APPENDIX A

NOP and Comments

City of SACRAMENTO
Community Development

300 Richards Blvd., 3rd Floor
Sacramento, CA 95811

Help Line: 916-264-5011
CityofSacramento.org/dsd

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING FOR THE LAND PARK COMMERCIAL CENTER PROJECT

PUBLIC COMMENT PERIOD
November 12, 2015 to December 14, 2015

INTRODUCTION

The City of Sacramento ("City") is the Lead Agency for preparation of an Environmental Impact Report (EIR) for the proposed Land Park Commercial Center Project (proposed project). The EIR will evaluate potential significant environmental effects associated with implementation of the proposed project. The EIR is being prepared in compliance with the California Environmental Quality Act (CEQA). Written comments regarding the issues that should be considered in the EIR, including potential alternatives to the proposed project and the scope of the analysis, are invited.

Under CEQA, upon deciding to prepare an EIR, the City, as lead agency, must issue a Notice of Preparation (NOP) to inform trustee and responsible agencies, and the public, of the decision to undertake preparation of an EIR. The purpose of the NOP is to provide information describing the proposed project and its potential environmental effects to those who may wish to comment regarding the scope and content of the information to be considered in the EIR. Agencies should comment on such information as it relates to their statutory responsibilities in connection with the proposed project. Agencies and the public are invited to provide comments on the scope of review, potential mitigation strategies, and alternative project designs. Comments on the merits of the proposed project are accepted through a separate planning process.

The project description, location, and environmental issue areas that may be affected by development of the proposed project are described below. The EIR will evaluate the project-specific and cumulative impacts, identify feasible mitigation measures to reduce or avoid significant project impacts, and identify a reasonable range of alternatives to the proposed project and their comparative environmental effects.

SUBMITTING COMMENTS

Comments as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the City's environmental project manager at the following address by Monday, December 14, 2015. Please include the contact person's full name and address so that staff may respond appropriately:

Dana Mahaffey, Associate Planner
City of Sacramento Community Development Department
Environmental Planning Services
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811-0218
DMahaffey@cityofsacramento.org

SCOPING MEETING

A public scoping meeting will be held on Wednesday, December 2, 2015, from 5:30 p.m. to 7:00 p.m. at California Middle School, 1600 Vallejo Way, Sacramento. Trustee and responsible agencies, as well as members of the public are invited to attend to learn more about the project and to provide written input on the scope of the EIR. The scoping meeting will have an "open house" format, so participants can attend at any point during this two-hour window. Participants arriving after 5:30 p.m. will not miss any meeting content. Written comments regarding relevant issues may be submitted at the meeting.

PROJECT LOCATION / SETTING

The proposed project consists of six new buildings that would be constructed in the Land Park Community Plan Area, at the intersection of Wentworth Avenue and Freeport Boulevard which includes the former Capital Nursery site.

Exhibit 1 shows the location of the project site, and Exhibit 2 shows the proposed site plan and building locations.

PROJECT DESCRIPTION

MO Capital, the project applicant, is requesting entitlements to construct a commercial project anchored by a grocery store (Raley's). The proposed project would reuse an existing developed area within the Land Park Community Plan Area. A general overview of the proposed project is included below.

The project site encompasses 9.87 acres fronting on Wentworth Avenue and Freeport Boulevard (see Exhibit 1). Existing buildings and greenhouses that were part of the former Capital Nursery (closed in 2012) along Freeport Boulevard would be demolished, along with two small vacant residences located on Wentworth Avenue. The project would construct a new one-story 55,000-square-foot grocery store and five freestanding buildings that would provide approximately 53,980 square feet of retail uses. A total of 439 on-site surface parking spaces would be provided along with new trees, landscaping, and public gathering places.

The existing Raley's store on Freeport Boulevard would relocate to the new store. The project applicant is working with the existing building landlord to identify a new tenant for the space.

Exhibits 3 and 4 illustrate the conceptual design of the proposed project.

Vehicle access would be provided along Freeport Boulevard with a secondary access along Wentworth Avenue. The loading docks and deliveries for the grocery store would be take place along the south side of the building. Truck access would be from Wentworth Avenue.

Dedicated sidewalks for pedestrians and access for bicyclists would be provided from Freeport Boulevard and Wentworth Avenue (see Exhibit 2). Bicycle racks would be provided throughout the project site.

REQUESTED ENTITLEMENTS

The City discretionary approvals/actions that would be considered for the proposed project include, but are not limited to, the following:

- General Plan Amendment to change 5.2 acres of land designated for suburban neighborhood low density and suburban neighborhood medium density to Urban Corridor Low;
- Rezone of 4.6 acres from R-1A-EA-4 and R-1 and R-2A-R-EA-4/R-2A-EA-4 (Residential zones) to C-2 and C-2-EA-4 (General Commercial Zone);
- Conditional Use Permit to construct a commercial/retail store that exceeds 40,000 square feet;
- Tentative Map to create five (5) commercial parcels that each contains a commercial building; and
- Site Plan and Design Review for the construction of a commercial center on a 9.87 acre site.

Review of the proposed project by the Planning and Design Commission would be conducted as a part of the EIR review and entitlements process. The project entitlements would ultimately require approval by the City Council.

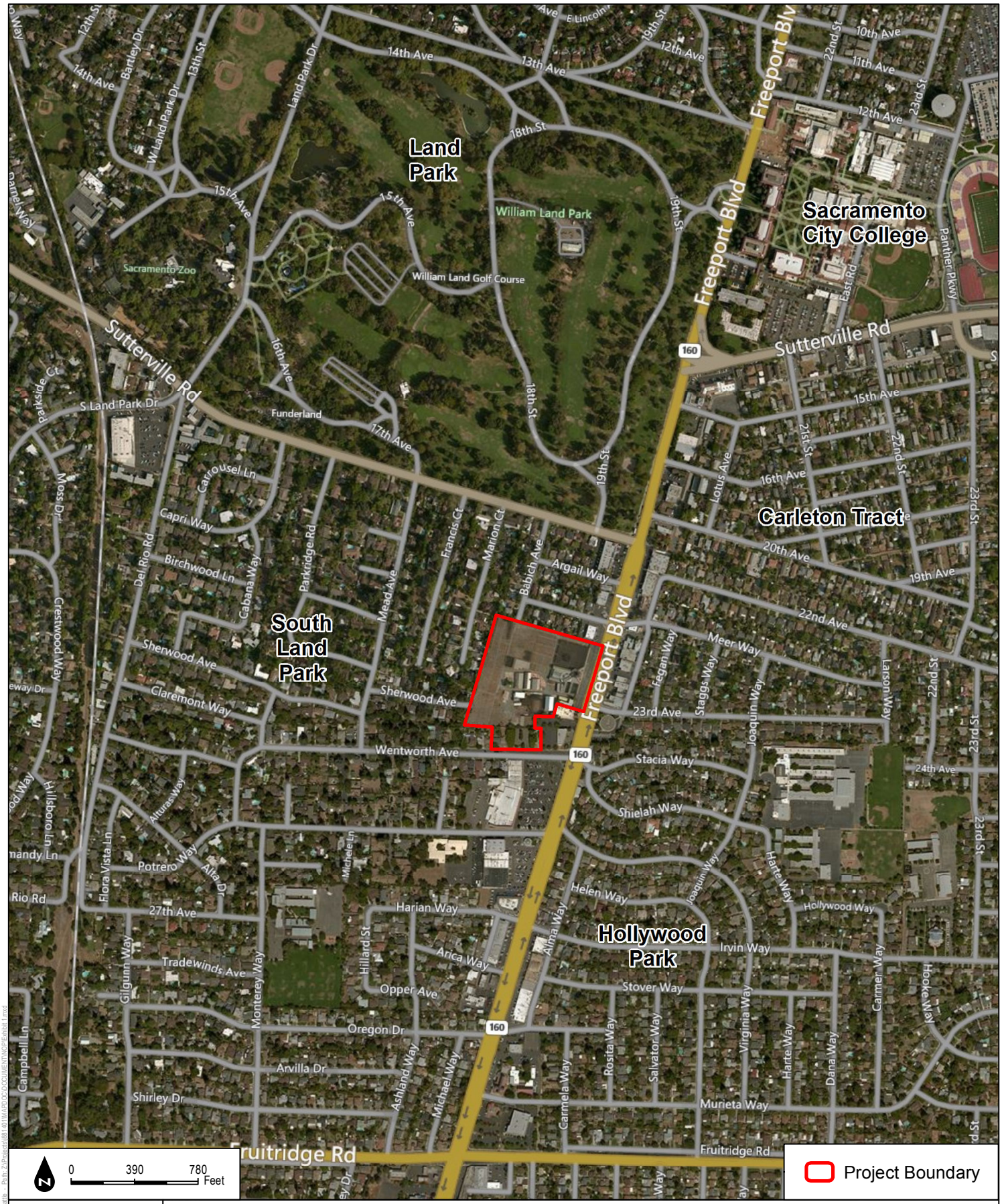
PROBABLE ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

Topics that the City has preliminarily determined would be discussed in the EIR for this project include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Emissions
- Hydrology and Water Quality
- Land Use, Planning and Population
- Noise
- Public Services, Energy and , Recreation
- Urban Decay
- Utilities and Service Systems
- Transportation/Traffic

As environmental documentation for this project becomes available, it will be available for review at the City's Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento California 95811, and online at:

http://portal.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports.aspx



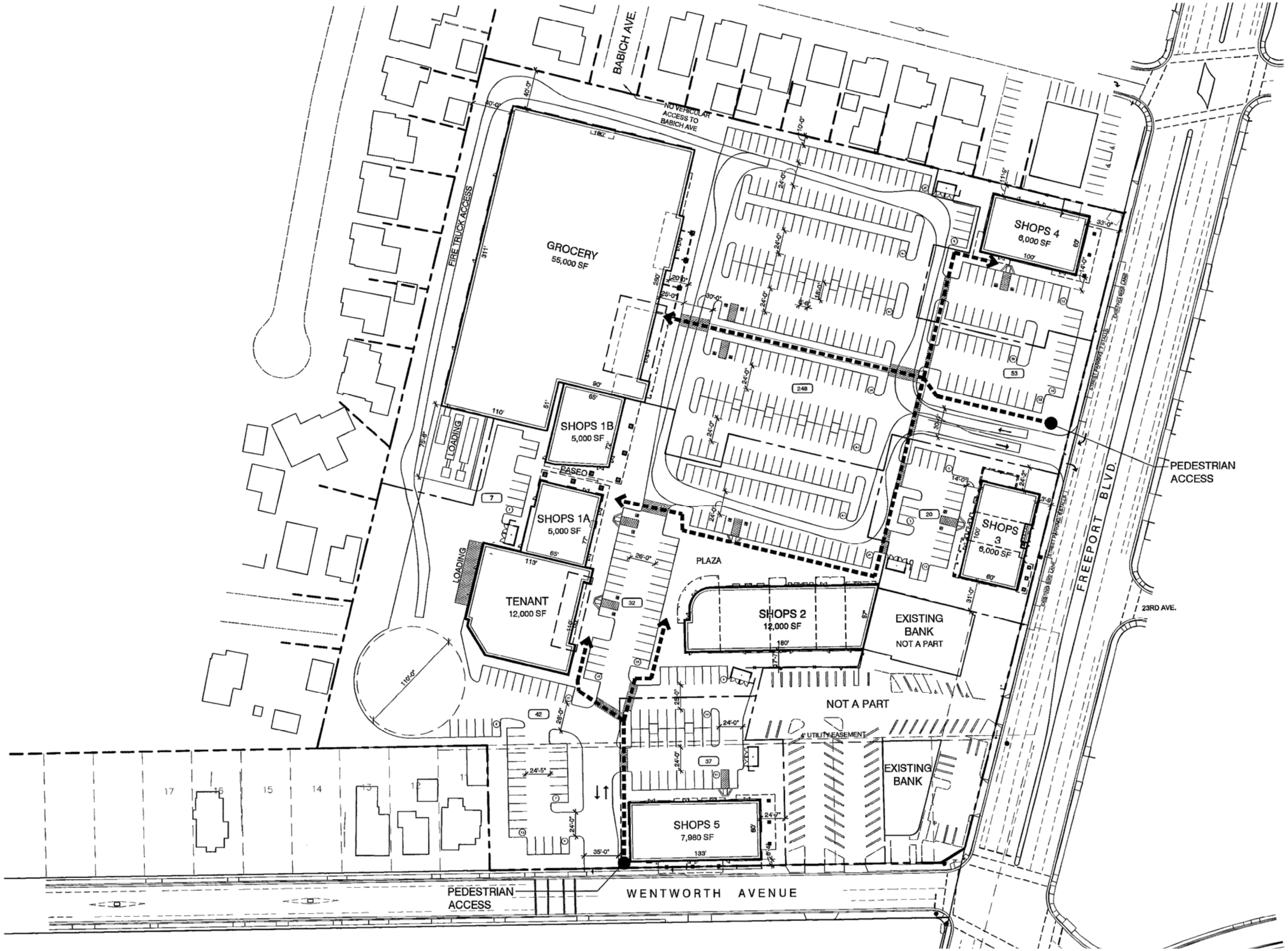
DUDEK

SOURCE: Bing Maps, 2015

EXHIBIT 1

Project Location

Land Park Commercial Center



SOURCE: MCG Architecture, 2015

DUDEK

EXHIBIT 2

Site Plan

Land Park Commercial Center

WEST

SOUTH

LEGEND:

MATERIAL/TYPE		MANUFACTURER	COLOR/NUMBER
EXTERIOR CEMENT PLASTER, WALLS AND TRIM:			
A	PAINT	BENJAMIN MOORE	ASHLAND SLATE, #1608
B	PAINT	BENJAMIN MOORE	COBBLESTONE PATH, #1606
C	PAINT	BENJAMIN MOORE	SILVERY MOON, #1604
D	PAINT	BENJAMIN MOORE	DEEP OCHRE, #1048
E	PAINT	BENJAMIN MOORE	LATTE, #2163-60
F	PAINT	BENJAMIN MOORE	WHITALL BROWN, #HC-69
ALUMINUM STOREFRONT:			
AA	ALUM STOREFRONT	KAWNEER	ANODIZED ALUMINUM, CLEAR
EXTERIOR WALL FINISHES:			
CC	STONE VENEER	---	STACKED SLATE, CHINA NATURAL
DD	BRICK VENEER	MCNEAR	COMMERCIAL SERIES, RED - DIESKIN
EE	COMPOSITE SIDING	RESYSTA	FVG-C24

FINISH MATERIAL KEYNOTES:

1	METAL CANOPY	6	STUCCO ACCENT
2	STUCCO	7	WOOD LOUVER
3	COPING	8	STOREFRONT
4	NOT USED	9	METAL DOOR
5	MASONRY VENEER	10	GREEN SCREEN
		11	WOOD SIDING

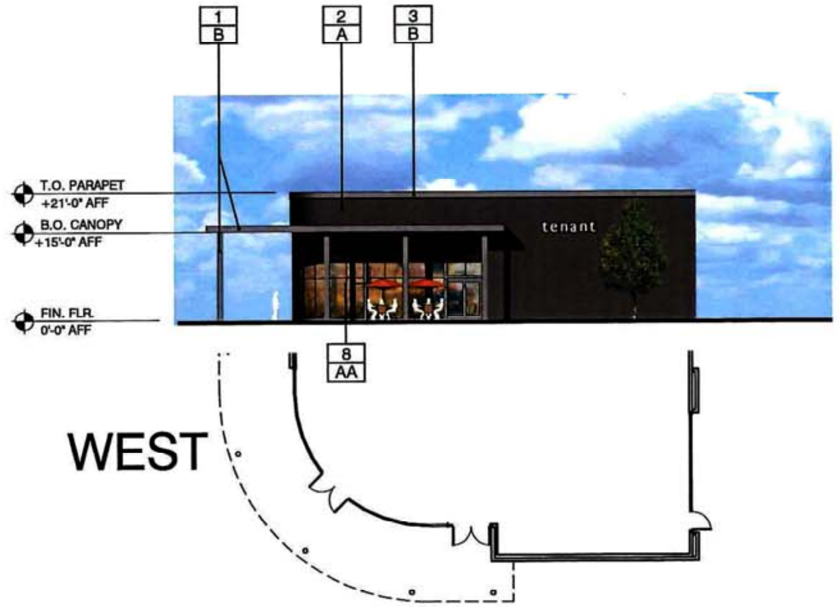
DUDEK

SOURCE: MCG Architecture, 2015

EXHIBIT 3

Building Elevation - Grocery Store

Land Park Commercial Center



WEST

SOUTH

NORTH

FINISH MATERIAL KEYNOTES:

1	METAL CANOPY	6	STUCCO ACCENT
2	STUCCO	7	WOOD LOUVER
3	COPING	8	STOREFRONT
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EXTERIOR WALL FINISHES:			
CC	STONE VENEER	---	STACKED SLATE, CHINA NATURAL
DD	BRICK VENEER	MCNEAR	COMMERCIAL SERIES, RED - DIESKIN
EE	COMPOSITE SIDING	RESYSTA	FVG-C24

DUDEK

SOURCE: MCG Architecture, 2015

EXHIBIT 4

Building Elevation - Retail Stores

Land Park Commercial Center

December 11, 2015

Catherine Bunch
4650 Marion Court
Sacramento CA 95822

Dana Mahaffey, Associate Planner
City of Sacramento Community Development Department
Environmental Planning Services
300 Richards Boulevard, 3rd Floor
Sacramento, CA 95811-0218

Dear Dana Mahaffey

We briefly met Dec 2 at Cal Middle School cafeteria for the Scoping EIP meeting concerning Raley's proposal on Freeport Boulevard, and I spoke with you by phone this past week. I thank you again for your time. As I understand things, if people from the community do not raise any concerns or ask any questions about the proposal, they cannot be reflected in the Environmental Impact Report that you oversee. Additionally, without hearing feedback from the public, Raley's is under no obligation to take into consideration or respond to our concerns. Hence, this letter to you.

For my part, my concerns center around the fact that for the past 80 years the vast majority of the old Capital Nursery site was covered mostly with soil and air-cleaning plants spread over a huge business lot that closed its doors every evening around 6 p.m. For eight decades.

My home, located within less than 300 feet of the proposed grocery, was purchased by my family three decades ago because of its very location behind the nursery at the end of a quiet cul-de-sac, a street whose entrance lies directly across from William Land Park. Because of these wonderful features, we have continually benefitted from an abundance of quiet enjoyment. For more than 30 years.

Raley's proposal is going to change all of that. I am very concerned about any and all of the following potential outcomes:

-air pollution from more than quadrupling the number of parking stalls. Capital Nursery provided about 75 parking stalls on the Freeport Blvd side. Raley's proposal calls for 439 cars spaces, or four times the nursery's old lot. This is moreover more than double the parking spaces at the current Raley's location.

-air pollution from the HVAC systems the new buildings will require, and any other air pollution that could come as a result of this proposal

-noise pollution from trucks loading on the docks for the huge grocery; the rooftop HVAC systems, the proposed shops and restaurants, and and any other noise pollution that could come with this proposal

-light pollution from the interior and exterior fixtures and parking lot, many of which I'm assuming will be in operation through the night.

-will more cell towers need to be built to accommodate the development? If so, what impact will they have on community members' health?

-will proposed building materials add any pollution concerns or risks?

-will proposed building heights cast undesirable shadows over our properties?

-how will our home values not decrease from all this?

I need to share too that the "open-house" format of the Dec 2 meeting did not provide a chance for those who attended to hear concerns expressed by everyone. As an example, I heard from one Parkridge Road home owner who likes to sleep with her windows open that she is currently awakened at 4 am by trucks loading over at Sprouts Grocery. That's at least 1000 feet away. What's it going to be like with the Raley's loading docks less than 300 feet away from my house? Only a few neighbors who happened to be standing near the Parkridge homeowner heard this. The rest did not. Neither did they hear what a Francis Court resident had to say about noise and the shopping center's layout in relation to vagrancy issues. Nor did they hear comments from a Sherwood Avenue homeowner. And of course this means I wasn't able to hear what others scattered around the room were having to say. As a local homeowner, this is worrisome.

At the Dec 2 meeting I did not get a chance to see the flow chart of the proposal procedures. I request that you send me one at your earliest convenience.

Raley's proposal presents a huge change from what surrounding dwellers have experienced for decades. Although Raley's well serves many of our grocery shopping needs, and has expressed a desire to create an aesthetically attractive shopping center, their present proposal definitely forebodes a lot of long-term negative effects on the quality of our lives and home investments.

Sincerely,

Catherine Bunch

email: nvmbr1@gmail.com
mailing address:
410A Fair Oaks Street
San Francisco, CA 94110

City of
SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Pinki Cockrell

Email: pinkic2003@yahoo.com

Address: 1411 Birchwood Lane, Sacramento 95822

Organization: On board of Land Park Community Association but this is for my personal analysis and remaining current

☒ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015**. Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

You may attach additional pages to this form and/or you may submit your written comments separately. Written comments on the scope of the EIR will be acknowledged in the Draft EIR and will be considered in preparation of the document.

(1) Hope to encourage a community room as with many Raleys, possibly in a Mezanine above the supermarket (with facing Freeport; no "eyes" on the back of building that would affect 2 story houses adjacent.) There is no community center in Land Park!
(2) officially designate bike parking; none present at current site.
(3) Allow removal of two small houses on Wentworth that were formerly rented to Capital Nursery employees. Although clear around for visibility, they are obviously vacant and seriously deteriorating. ASAP!
(4) Left turn signal northbound (protected) at Wentworth.
(5) Direct more eyes on the street with satellite buildings, rather than totally facing inward toward parking lot. Essential to maintaing a walkable neighborhood ambiance. Current story boards don't reflect that.

(6) What road improvements are necessary for the new plan? I personally don't foresee more traffic, but other neighbors have raised that concern.

(7) For re-occupation of the current site, I encourage a fitness center and a possible re-location of Hollywood Hardware and their historic sign. New owners want to expand!

(8) At other meetings, I heard input about sound walls and how flush they should be with current fences/fence lines. I prefer flush or shared to avoid access for loiterers, but my property isn't adjacent.

(9) Landscaping should be functional. Not palm trees that provide no shade or conifers that aren't faring well in the drought. Landscaping should enhance streetscape as well as parking lot ambiance.

(10) Raley's and the development team have been in dialog with the homeowners associations - Land Park and Hollywood Park. There is all appearance of conscientious efforts being a good neighborhood project.

(11) Safe walkability inside the parking lot is not quite assured on current story boards. Brick paving for paths might be feasible.

(12) No fuel stations on the current site or future site. None are proposed, but one wasn't proposed in earlier phases of Curtis Park Village either!!!!

(13) Suggest at least one vehicle charging station in the parking lot (as at Belle [redacted] Coolidge Library)

October 8, 2015

Dear City Planners -

We reside at 4621 Marion Court and the proposed development of the new Raley's shopping center AKA Land Park Commercial Center will be directly behind our house. We request that all correspondence and documents related to this site development be sent to our mailing address and our email address. For some reason, we did not received original notice from your office regarding the site development until I called to request this information. Thank you for emailing the site plans, dated September, 14, 2015 to us.

We have reviewed the plans which were emailed to us. We have a number of requests for studies to be completed before we can adequately respond to the plan as it is drafted. Also, we have a number of questions and comments.

Studies requested:

1. A study of the soil content in the existing site so that we can be certain that there are no toxins on the site.
2. A study of exterior light pollution which could result from store signage, parking or other site lighting. As nearby residents, we are concerned that the ambient light from the site will create a twilight effect on many blocks in the surrounding area and we request a study that addresses this issue.
3. A noise study of the current Raley's store and a comparison study of the projected site. Please include the following in your noise study, backup alarms on trucks, forklifts and frequent car alarms.
4. An air quality study of projected truck, car, and garbage air pollution as a result of the site being developed, both during construction and when occupied.

Questions:

1. What is the zoning on the site, we could not tell from the site plan which area is zoned commercial and which area is zoned residential. If the area is zoned residential, how can it be rezoned commercial - what is the planning requirements to rezone?
2. What is the timeline for hearings to be held so that we can make comments?
3. Is there another shopping center that is similar in size in the Land Park area that I can look at so that I can understand the size of this shopping center. It seems much bigger than the current Raleys?
4. Is there a limit to when trucks can deliver? Can we request that deliveries are only made during daylight hours?
5. What are the construction hours once construction begins?

Concerns:

1. We are concerned that the sound wall being planned will not address ambient light issues and sound issues.
2. We are concerned that the truck loading docks will be a very short distance from residential property and will be very disturbing in a residential neighborhood.
3. We are concerned that light and sound will diminish the quality of life in a residential neighborhood.
4. We are concerned that the scale of the development will approximate a typical suburban shopping center and does not reflect the Land Park/Hollywood Park Neighborhoods.

Sincerely,
Kevin Williams and Ann Collentine
4621 Marion Ct., 95822

From:	Whitney Fong
To:	Dana Mahaffey
Subject:	Re: Land Park Raley"s Project
Date:	Tuesday, December 15, 2015 11:25:59 AM

Hi Dana,

Here are my comments. Let me know if I should submit them in another format.
Thank you THANK YOU for letting me submit this morning:

I am extremely disheartened by several elements of the proposed Raley's development on Freeport Blvd.

First, the developer has essentially designed a behemoth of a structure (almost 40 feet tall!) that will not only tower over the poor homes on Marion Court (homes worth over a half million on a quiet, dead-end street), but also be directly visible from ALL THE SECOND STORIES of the homes on Francis Court where I live.

Since attending the meeting with the developers, I have driven around the city taking special note of commercial structures, particularly grocery stores. I have yet to encounter one that comes CLOSE to 40 feet in height. Why would someone need a 4-story grocery store??? Are there going to be different floors for shopping like a Nordstrom? It makes no sense.

The closest store I observed that looks remotely that tall is the Whole Foods on Eastern and Arden, which has a gabled roof in FRONT (not back, adjacent to the neighbors) that maybe reaches a height of 30 feet (not 40). It is a design element, intended to make the store look more like a lodge, and it does not cover the perimeter of the building. It is not towering over homes BEHIND the shopping center. As far as I can tell, the rear of the store is a very reasonable 20-22 feet.

Based on what the developer told us at the meeting, even though he admitted he "didn't know for sure," the Raley's structure on the submitted plans is 37-40 feet all around. What a joke. There is nothing on Freeport Blvd. in the vicinity that is close to being that tall, INCLUDING their current store!

Aside from the obvious eyesore of this monster, what will the noise implications be? Will the HVAC units be on the roof? Polluting the quiet enjoyment previously experienced by us neighbors? Will there be windows at that height for offices, allowing Raley's personnel to see right inside my second story bathroom? As an aside, I can't imagine that this height is at all consistent with the flat mid-century theme of South Land Park, which is where this store is located.

Second, the location of the loading dock in relation to surrounding homes is ABSURD. Raley's is essentially parking its trucks inside 7 homeowners' backyards. The beeping of the trucks will be heard all the way over on Francis Court. Any location closer to Wentworth (and closer to their current store) would be better, and be less of an abrupt transition from their current location.

As an aside, a gentleman who lives on Sherwood, who also happens to be against the development, attended the Open House meeting a few weeks ago. He specializes in this type

of work and remarked that businesses often "fudge the data" when it comes to assessing noise implications--that they intentionally reduce the number of trucks and deliveries on the day of the assessment. I'm confident the city won't fall for this nonsense.

I invite you to come to my house and my neighborhood and see the situation firsthand. As my husband and I are about to invest $500,000 in a remodel that includes a second story, I'm sickened by the cavalier attitude the developer has toward our neighborhood. There were several other options that could have impacted us less.

Thank you so much for your time and consideration of my comments.

Sincerely,
Whitney Fong
(916) 616-8557

[redacted]

City of SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Melisa Gaudreau

Email: M_gaudreau@sbcglobal.net

Address: 1524 Sherwood Ave.

Organization: neighbor

☒ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015**. Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

You may attach additional pages to this form and/or you may submit your written comments separately. Written comments on the scope of the EIR will be acknowledged in the Draft EIR and will be considered in preparation of the document.

Please incorporate plenty of bike access and parking; ~~plenty of~~ ample pedestrian-friendly walks connecting to streets; and shaded/drought-tolerant landscaping.

Please consider more building mass towards Freeport Blvd. and shift parking behind buildings, as suitable with more urban setting & active sidewalks.

Please incorporate iconic neon Raley's sign into site design.

From: Janis Heple
To: Dana Mahaffey
Subject: NOP Comments: Raley"s and Land Park Commerical Center
Date: Sunday, December 13, 2015 8:58:47 PM

December 13, 2015

Dear Associate Planner Dana Mahaffey,
I am writing regarding the Notice of Preparation for the Raley's and Land Park Commercial Center on Freeport Blvd. I live within the notification zone, on Marion Court - behind the proposed center. My home is three houses north of the property.

I believe that the EIR should address potential noise, air quality, and aesthetics impacts and address the following discussion points:

Noise related to deliveries at the loading dock
Deliveries could potentially occur in evening and early morning hours that would be disruptive to nearby neighbors. The EIR should show noise contours for the nearby neighborhood and describe whether these noise levels will exceed the City's noise ordinance thresholds.

The City should require the project design to include an enclosed delivery dock:
In talking with a former Raley's employee, and at the recent community meeting on December 2, I learned that Raley's has built enclosed delivery loading docks in other Raley's store locations. I feel strongly that this be done for this Raley's store location: homes are immediately behind the proposed dock area, and this one step would mitigate much of the potential noise and disruption from the new land use.

Air Quality Concerns
Truck exhaust is also an issue for this location, and diesel truck exhaust is of particular concern, as it is a toxic air contaminant. Again, an enclosed loading dock could help mitigate this impact on the neighborhood. The idling of engines must be kept to a minimum; to minimize emissions from idling, the loading dock should include electrical hookups for refrigeration trucks and trucks should be required to use these to minimize idling. And the upkeep of Raley's-owned trucks should be monitored closely in order to keep them from emitting any additional exhaust to the neighborhood.

Aesthetics and Lighting
Security Lighting needs to be designed using the latest lighting strategies, that block skyglow and light spillover to the neighborhood. There is now a great deal of information on proper placement of lights in order to minimize light pollution in the environment, minimizing the affect on both people and animals. Our neighborhood wants to see state-of-the-art lighting fixtures that minimize the visibility of lighting from off-site.

The plantings installed around the new center can also be used to mitigate some of the affects I have discussed in this letter: the landscape plan should be prepared by with care by a landscape architect experienced in designing plans for projects that need buffer zones between commercial developments and nearby residences. I noted that the plants identified in the current design are drought tolerant plants: are the plants that have been identified the best plants to reduce store lighting and other disruptions from the new store? How long will it take for these plants to reach maximum effectiveness? The landscape plan should specify plant sizes adequate to minimize the time it will take for them to reach maturity and provide for effective screening.

Hazardous Materials
I understand that a Phase 1 & Phase 2 assessment of any hazardous materials released to the site has been performed. Information from these assessments must be incorporated into the EIR.

I do shop at Raley’s, and so I look forward to a well thought out Environmental Impact Report so that the final product will be one that the neighborhood can support.

Sincerely,
Janis Heple

Hollywood Park Neighborhood Association
P.O. Box 22278 Sacramento CA 95822 - HollywoodPark95822.org - hpna95822@gmail.com

December 14, 2015

Via Email

Dana Mahaffey
Associate Planner
City of Sacramento
Community Development Department, Environmental Planning Services
DMahaffey@cityofsacramento.org

RE: Land Park Commercial Center (P15-048) EIR

Dear Ms. Mahaffey,

Thank you so much for the opportunity to comment on the appropriate scope of analysis for the Environmental Impact Review of the proposed Land Park Commercial Center (LPCC).

The Hollywood Park Neighborhood Association requests that the EIR include a pedestrian and bicycle safety study to address changes in pedestrian, bicycle and vehicle traffic flow. We expect the new shopping center to be a popular destination for people from all of the surrounding areas and would like to ensure safe access for all modes of transportation. Increased traffic through Hollywood Park is likely as vehicles use smaller streets like Helen Way or Irvin Way as a cutthrough from 24th Street and Fruitridge Road. The increased vehicle traffic will create new safety hazards to cyclists and pedestrians who use the adjoining streets and sidewalks to access the shopping center or travel through the neighborhood. The design must incorporate safe means of access for pedestrians, such as well marked crosswalks with overhead signs and flashing beacons, wide, ADA compliant sidewalks and other proactive solutions that create safe modes of transit for cyclists navigating the increased vehicle traffic.

Thank you once again for the opportunity to comment. We look forward to working with all parties involved on this exciting project.

Sincerely,

John Maradik-Symkowick
President
Hollywood Park Neighborhood Association

cc: City Councilmember Jay Schenirer (jschenirer@cityofsacramento.org)
County Supervisor Patrick Kennedy (kennedyp@saccounty.net)

City of SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: NAN JOHNSON

Email: 2hanjohnson@gmail.com

Address: 2958 17th St. - SACTO. 95818

Organization: —

☑ I would like to receive future environmental notices via email.

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I am particularly concerned that planning include an abundance of Shade! - including Large Shade trees.

From: Sharon Kowall
To: Dana Mahaffey
Subject: Raley"s / Land Park Center EIR Scope Comments
Date: Monday, December 14, 2015 6:02:14 PM

We have owned property and lived on Sherwood Ave, directly behind the proposed Raley's development. four houses from the rear boundary, for 24 years. Our concerns are as follows:

Noise and air pollution associated with deliveries. Deliveries could potentially occur in evening and early morning hours that would be disruptive to nearby neighbors. The EIR should show noise contours for the nearby neighborhood and describe whether these noise levels will exceed the City's noise ordinance thresholds. The City should require the project design to include an enclosed delivery dock. I understand that Raley's has done this at other locations to mitigate this problem.

Truck exhaust is also an issue for this location, and diesel truck exhaust is of particular concern, as it is a toxic air contaminant. Again, an enclosed loading dock could help mitigate this impact on the neighborhood. The idling of engines must be kept to a minimum; to minimize emissions from idling, the loading dock should include electrical hookups for refrigeration trucks and trucks should be required to use these to minimize idling. And the upkeep of Raley's-owned trucks should be monitored closely in order to keep them from emitting any additional exhaust to the neighborhood.

Lighting: Security Lighting needs to be designed using lighting strategies that block skyglow and light spillover to the neighborhood. There is now a great deal of information on proper placement of lights in order to minimize light pollution in the environment, minimizing the affect on both people and animals.
Plantings installed around the new center can also help mitigate this issue. Drought tolerance is of great importance, but also important is how long will it take for these plants to reach maximum effectiveness? The landscape plan should specify plant sizes adequate to minimize the time it will take for them to reach maturity and provide for effective screening.

The neighborhood is looking forward to having an aesthetically pleasing and non-disruptive addition to our community.

Sharon Kowall and Richard Phelps
1821 Sherwood Ave.
Sacramento, CA 95822

From:	Serge and Robin Testa
To:	Dana Mahaffey
Subject:	Land Park Commercial Center Project EIR Scope --Suggestion
Date:	Tuesday, December 01, 2015 10:36:56 PM

Hello Dana,

I own a house on Sherwood Ave., behind the proposed Raley's Land Park Commercial Center. I am writing to express some concerns and suggestions about the plans that have been submitted and the proposed EIR Scope. I noticed that Light Pollution was not included in your proposed EIR scope and suggest that it be added.

My concerns are:

1. Noise and exhaust from the loading dock area.

Homes are very close to the supermarket loading area. Truck engine exhaust and loading noise would certainly impact the residents. I believe that Raley's has built enclosed loading docks at other stores where residences are nearby and this would be very appropriate here. Deliveries should also be restricted to times that would minimize the impact on nearby residents.

2. Light Pollution.

Lighting in the area needs to be designed to not disturb neighbors' nighttime tranquility, while maintaining necessary security.

My suggestions are:

1. Ensure that there is adequate planting in the sound wall buffer area to help mitigate noise and light pollution and reduce heat.

2. Consider green solutions for parking areas to minimize heat and capture run-off.

Thank you for your attention.

Best regards,
Robin Testa

City of SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Edmond Lee

Email: Edhlee3@gmail.com

Address: 1909 Wentworth Ave.

Organization: Self

☒ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015**. Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

You may attach additional pages to this form and/or you may submit your written comments separately. Written comments on the scope of the EIR will be acknowledged in the Draft EIR and will be considered in preparation of the document.

Noise - Prior, during and construction
Dust - During construction
Toxics in the soil
Toxic mold in Building
Lighting
Storm drains number and location
Traffic flows and amount
Power - Electric field
Utilities - effects on Cell Service

City of
SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Katie McCort

Email: cjmccort@gmail.com

Address: 2192 Shielah Way

Organization: _____

☒ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015.** Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

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I quite like the idea of something ~~coming~~ going into that empty building - I really want that. My only concern is that there are already a lot of empty storefronts in that part of Freeport, and I wouldn't want to add the huge space where the Raley's currently is to the list of empty buildings. Is there any way to include a requirement, or at least a strong incentive, for them to fill the space they are vacating? Can they be persuaded to lead a Freeport Business Association, or something like that? I'd much rather that Freeport be a bustling center of commerce than a series of empty store fronts, and I'm sure Raley's want that too. Thanks for listening!

Will we get some help from Raley's or what can be done?

City of SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Jean Nelson

Email: jean-nelson@sbcglobal.net

Address:

Organization:

☐ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015**. Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

You may attach additional pages to this form and/or you may submit your written comments separately. Written comments on the scope of the EIR will be acknowledged in the Draft EIR and will be considered in preparation of the document.

Help!

I live on Claremont Way - it is a speedway cut-through street (no undulations) between Del Rio and Raleys/Freeport.

I understand that one street is used as a (Fire Dept) fast access street, is this why mine has no bumps?

Please help me come up with a traffic slowing measure before there is an even GREATER reason (more traffic predicted) to help our street

we have elderly, babies, toddlers, deaf cats, and be a hazard! monthly cocktail parties - we can safety :)

From: Elise Gumm
To: "Marzolf, Janet@HCD"
Cc: Dana Mahaffey; Tom Buford
Subject: RE: Land Park Commercial Center
Date: Friday, October 09, 2015 8:14:13 AM

Hi Janet,

I got your email.

An environmental impact report (EIR) is required for the project and noise and traffic studies will be completed to determine the impacts and mitigated alternatives. The timelines for getting the draft EIR is approximately 5-8 months. Neighbors within 300 feet will be receiving notification when the documents are available to review and comment. The environmental planner for the project is Dana Mahaffey, who is also copied in this email. You can contact her if you should have any questions relates to EIR process.

The following link also contains the project information including any future updates. Please check the link periodically to see updated documents.

http://portal.cityofsacramento.org/Community-Development/Planning/Major%20Projects

Thanks.

Elise Gumm, LEED AP BD+C
Associate Planner, Planning Division
300 Richards Blvd, 3rd Floor
Sacramento, CA 95811
Phone: (916) 808-1927
E-mail: egumm@cityofsacramento.org

City of SACRAMENTO
Community Development

Mission:To help plan, build, and maintain a great City
Vision: To be the best Community Development Department in California
Values: Professionalism, Innovation, Courtesy, Collaboration, Consistency

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From: Marzolf, Janet@HCD [mailto:Janet.Marzolf@hcd.ca.gov]
Sent: Tuesday, September 29, 2015 6:28 PM
To: Elise Gumm
Subject: Land Park Commercial Center

I live on Babich Avenue, four houses in from this project. I do have some questions.

1. What are the hours of operation of the grocery? (I'm concerned about noise.)
2. What times of day will trucks be loading/unloading items? (Again, I'm concerned about noise.)
3. Will the properties on Babich be viewable from the grocery building which is going to be higher than the wall? (I'm concerned about privacy in the houses and backyards.)
4. What will be done to keep traffic from cutting through Babich/Meer to Freeport to avoid the light at Freeport and Sutterville? (Concerned about additional traffic because of safety and noise.)
5. There have been drainage/flooding problems on Babich and Meer. Will there be an improved drainage system installed to prevent this? Right now the nursery property absorbs rainfall. Once that area is paved, there will be more runoff which would likely increase flooding.
6. Will any lighted signs on the property be visible from Babich?
7. Will there be outdoor music concerts permitted? If so, what time will they need to shut down?

Thank you for providing any information you can to address these concerns.

****

From: Melinda Rivasplata
To: Dana Mahaffey
Subject: Raley"s Land Park Commercial Center (P15-048) NOP
Date: Sunday, December 13, 2015 10:29:40 AM

Dear Dana,

We believe the EIR for the project should take into consideration the following in its discussion of potential impacts and mitigation measures.

Traffic and Air Quality:
Assumptions used to determine traffic volume and air quality impacts will no doubt take into account the number of trips using alternative modes of transportation (transit, pedestrian, and bicycle). These assumptions should accurately reflect the project design and whether it actually facilitates alternate modes (efficient accessibility and safe walkways through the site for pedestrians, adequate safe and secure bicycle parking at the front of the stores, and transit capacity and transit proximity). In particular, there should be safe and accessible bicycle parking at the front of the stores.

Noise, Air Quality:
The EIR should address the potential impacts related to the delivery dock. Engine idling of delivery vehicles will emit toxic air contaminants and generate noise that would have an adverse impact on the nearby neighborhood. The air quality analysis and noise analysis should address these impacts and provide mitigation measures that inlcude idle reduction technologies and practices (enclosed delivery dock, no idle zone, plug in technology for diesel trucks).

Aesthetics and Lighting:
The appearance of the project should improve the visual quality of Freeport Boulevard. The stores should be oriented to the street, and free-standing buildings should be minimized, in favor of a continuous set of businesses oriented to Freeport Boulevard. Currently the visual quality of the immediate area has been deteriorating due to the increase in the number of vacant buildings, older strip malls in decline, and poor upkeep at some properties. The existing commercial properties do not have much in the way of landscaping and the new construction at LPCC should help the situation; but the EIR should look at the cumulative impacts of the project related to landscaping and design. Shade trees in the parking lots should be of species providing a large canopy (not spindly crepe myrtles) to help mitigate for the increased paving.

Effects of delivery dock lighting, parking lot lighting and security lighting on the nearby neighborhood should be addressed in the EIR. The EIR should analyze the proposed landscape plan for effectiveness in reducing light and glare on Freeport

Boulevard and in the nearby neigbhorhood. Mitigation measures should be provided that minimize these effects. The analysis should take into consideration the time lag that may occur related to the time it will take for landscaping to mature and become effective at screening light and glare.

Sincerely,

Melinda and Terry Rivasplata
4900 Alta Drive
Sacramento, CA 95822

December 14, 2015

Submitted by e-mail
Dana Mahaffey, Associate Planner
City of Sacramento
Community Development Dept.
Environmental Planning Services
300 Richards Blvd., 3rd Floor
Sacramento, CA 95811-0218
E-mail: DMahaffey@cityofsacramento.org

Re: Notice of Preparation, Land Park Commercial Center (P15-048)

Dear Ms. Mahaffey:

On behalf of Sacramento Modern (SacMod), thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Land Park Commercial Center project. SacMod has been observing the developments and discussions surrounding the proposed plans to demolish and redesign the Capital Nursery site at 4700 Freeport Boulevard. The largest building on the new site would house the Raley's grocery store that is relocating from 4850 Freeport Boulevard.

SacMod is a 501(c)(3) non-profit organization founded in 2010; we are dedicated to preserving modern art, architecture, and design in the Sacramento region. We do this by conducting home tours, bike tours, walking tours, film screenings, preservation campaigns, publications, and educating the public about modernism.

At this time, our comments regarding the proposed project are limited to aesthetics, cultural resources, and zoning. Both 4700 Freeport Boulevard and 4850 Freeport Boulevard have mid-20th century character-defining features and materials that we believe could be retained and integrated into the new Land Park Commercial project.

Gretchen Steinberg 4910 South Land Park Drive, Sacramento, CA 95822
gretchen@SacMod.org
SacMod.org

4700 Freeport Boulevard/Proposed Project Site

The former Capital Nursery site at 4700 Freeport Boulevard was completed in November 1946 and was designed by Sacramento architect Leonard F. Starks, whose legacy firm still exists as Nacht & Lewis today. Capital Nursery's design included elements and materials such as an octagonal structure, Arizona sandstone bricks, wooden slats, and radiating pathways with lush landscaping. It also had an green neon sign with a design dating back to 1946 that contributed to the look and feel of the Freeport commercial corridor.

Many neighbors have fond memories and recollections of the Capital Nursery site. Authentic vintage footage showing Capital Nursery in the 50s can be seen in a YouTube video. This nostalgia is not only for the site but also of the plants and trees folks took home to grow and thrive in their own yards and homes. Many of the trees and plants in our neighborhood are from Capital Nursery.

While we were pleased to learn at the December 2nd scoping meeting that some of the proposed landscaping design from GATES + Associates includes a variety of trees that nod to the site's history and sense of place, we believe this idea could be further developed. The proposed project should harken back to the site's sense of place through the adaptive reuse of some of the historic materials, colors, designs, look, and feel (e.g., reintegrating some of the original Arizona sandstone bricks).

4850 Freeport Boulevard/Current Raley's Site

The current Raley's site was built in 1958 and includes a vintage neon sign designed by Electrical Products Corporation, which was located at 2101 28th Street (also noted in various historic records as Epco and Zeon). Electrical Products Corporation designed other favorites in the City of Sacramento, as the Sam's Hofbrau sign that was recently removed from J & 17th, the original Tower Records "dancing kids" sign atop Tower Café,"Jugglin' Joe from Gunther's Ice Cream, and the Hollywood Hardware hammer on Freeport Boulevard.

Freeport Boulevard has historically been a commercial corridor and contains many of Sacramento's beloved neon signs. The lost Capital Nursery neon sign and the current Raley's neon sign have contributed to the corridor's authentic and vintage character.

The 1958 Raley's sign from 4850 Freeport should be protected and preserved. Ideally, it could be relocated if the proposed Land Park Commercial project is realized. If it is not possible to move the existing sign, it should be preserved and the project should include a retro neon or neon-like sign to replace the loss of the Capital Nursery and Raley's vintage signs on Freeport Boulevard.

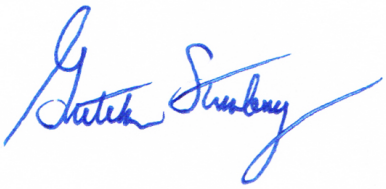
Proposed Zoning Changes

The look and feel of the surrounding mid-20th century neighborhoods call for an emphasis on the horizontal with lower scaling, massing, and setbacks away from the street.

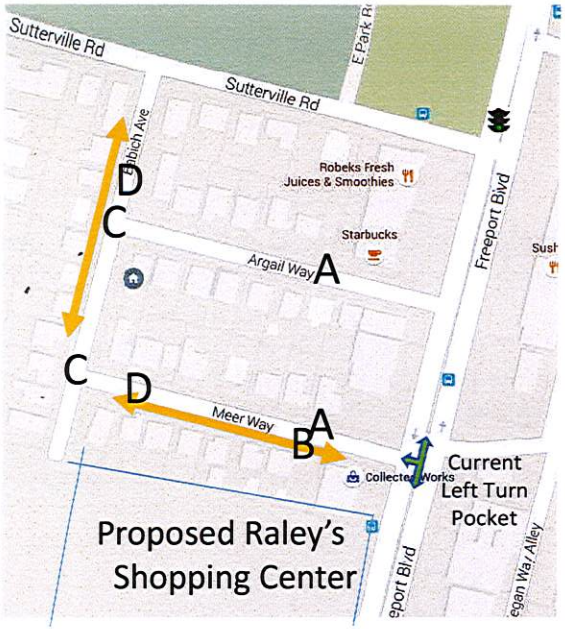
The proposed project calls for a rezone to C-2 and C-2-EA-4 (General Commercial Zone). The maximum height for this zoning can be up to 65 feet. The project itself currently calls for a building up to 40 feet. We suggest a rezone to C-1 (Limited Commercial Zone) should be considered to be more in keeping with the Applicant's expressed objectives and vision as stated in their Planning Entitlement Application.

In closing, SacMod commends Raley's for being a good neighbor all these years and appreciates the opportunity to provide constructive input at this early stage of planning. We hope the applicant, MO Capital — and the City of Sacramento — consider our suggestions.

Respectfully submitted,



Gretchen Steinberg, President, SacMod
In conjunction with the SacMod Board of Directors:
Dane Henas, Vice President
Nick Vinciguerra, Secretary
Zann Gates, Treasurer
Justin Wood, Director At-Large
Jon Hill, Director At-Large



RALEYS SHOPPING CENTER
Land Park Commercial (P15-048)
EIR Scoping Request

Please accept this letter as our request regarding the scope of the upcoming Environmental Impact Report for the proposed Raley's Shopping Center:

Residents along Meer Way, Babich Avenue, and Argail Way currently suffer from pass-through traffic, that is, traffic generated by parties passing through our residential neighborhood. This pass-through comes in four forms:

1) Northbound Freeport drivers seeking to turn Left on Sutterville and wishing to avoid the light.
   a) Travel down Meer Way and Babich Avenue to make the Left onto Sutterville
2) Eastbound Sutterville Road drivers seeking to turn Right on Freeport and wishing to avoid the light.
   a) Travel down Babich Avenue and Meer Way to make the Right onto Freeport.
3) Northbound Freeport drivers seeking to access the Starbucks, but wishing to avoid the U-Turn at the light
   a) Travel down Meer Way, Babich Avenue, and Argail Way
4) Starbucks patrons wishing to go North on Freeport Boulevard or West on Sutterville Road
   a) Travel down Argail to Babich and then left or right on Sutterville Road.

As a result of this traffic, the City placed speed bumps with cuts on Meer Way and Babich Avenue in 2010. It has not calmed traffic and the cuts allow those moving quickly to retain their speed. We believe the relocation of the Raley's shopping center to its new location will increase the pass-through traffic, especially traffic source #2 whose drivers will be able to see the Raley's shopping center from Sutterville Road.

We request the scope of the EIR include a traffic study for Meer Way, Babich Avenue, and Argail Way. Specifically, we request the EIR address four potential solutions to traffic, allowing the residential neighborhood to remain residential.

1) Consider installations of bollisters at both spots identified by the letter "A" in the map above. This would effectively block pass-through traffic, but given the positioning at the dividing line between residential and commercial properties, the commercial properties would still retain access from Freeport for their businesses.
2) Consider installation of bollisters at location "B". This would eliminate three of the four sources of pass-through traffic and allow commercial traffic on Meer Way continued access to the commercial properties.
3) Place (3-way) stop signs at each of the locations "C". This would act as a further traffic calming measure and occasional enforcement by the police department would contain abuse.
4) Replace speed bumps with cuts with speed tables, increasing the effectiveness of the calming measure (Locations "D").

Karl Schweikert,
1900 Argail Way, Sacramento, CA 95822

Catherine Wergin,

Dollie Wergin

From:	Karl Schweikert
To:	Dana Mahaffey
Subject:	Raleys Land Park - EIR Scoping comment
Date:	Monday, December 14, 2015 1:18:40 PM
Attachments:	p15-048 eir scope comment.pdf

Attached, please find the scoping request from my family.

The general content is as follows:

RALEYS SHOPPING CENTER
Land Park Commercial (P15-048)
EIR Scoping Request

Please accept this letter as our request regarding the scope of the upcoming Environmental Impact Report for the proposed Raley's Shopping Center:

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2) Eastbound Sutterville Road drivers seeking to turn Right on Freeport and wishing to avoid the light.
**Travel down Babich Avenue and Meer Way to make the Right onto Freeport.
3) Northbound Freeport drivers seeking to access the Starbucks, but wishing to avoid the U-Turn at the light
**Travel down Meer Way, Babich Avenue, and Argail Way
4) Starbucks patrons wishing to go North on Freeport Boulevard or West on Sutterville Road
**Travel down Argail to Babich and then left or right on Sutterville Road.

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1) Consider installations of bollisters at both spots identified by the letter "A" in the map above. This would effectively block pass-through traffic, but given the positioning at the dividing line between residential and commercial properties, the commercial properties would still retain access from Freeport for their businesses.
2) Consider installation of bollisters at location "B". This would eliminate three of the four sources of pass-through traffic and allow commercial traffic on Meer Way continued access to the commercial properties.
3) Place (3-way) stop signs at each of the locations "C". This would act as a further traffic calming measure and occasional enforcement by the police department would contain abuse.
4) Replace speed bumps with cuts with speed tables, increasing the effectiveness of the calming measure (Locations "D").

Karl Schweikert, Catherine Wergin, Dollie Wergin
1900 Argail Way, Sacramento, CA 95822

Karl Schweikert | Attorney
916.458.4932 | karl@churchwellwhite.com

Comments - EIR Scoping Meeting 12.2.15

1) Capital Nursery Site:

So many people have fond memories and recollections of Capital Nursery, which was designed by Sacramento architect Leonard F. Starks. This nostalgia is not only of the site but also of the plants and trees folks took home to grow and thrive in their own yards and homes. Many of the trees and plants in our neighborhood are from Capital Nursery.

I would like to see the proposed project harken back to the sense of place that Capital Nursery created. This can be done in a creative way, with adaptive reuse of some of the historic materials, colors, designs, look, and feel (for example, reintegrating some of the original bricks them into the new site — perhaps the landscaping.)

2) Neon Signs:

Freeport has historically been a commercial corridor and contains many of Sacramento's best neon signs. The neighborhood sadly lost the sign from 1955 from Capital Nursery, and now we face the loss of the 1958 Raley's sign.

Ideally, I'd like to see the 1958 Raley's sign from 4840 Freeport relocated. I realize that moving the sign would be no small feat. If it is not possible to move the existing sign, would Raley's be amenable to creating a cool and new neon or neon-like sign to replace the loss of the other two signs? My non-profit, Sacramento Modern, would be happy to consult with you regarding this matter.

Please feel free to contact me. Raley's has been a good neighbor and I appreciate the opportunity to provide constructive input.

Gretchen Steinberg
4910 S. Land Park Drive
Sacramento, CA 95822

sacramentomodern@comcast.net
916.813.7528

SIGN - 1958
ELECTRICAL
PRODUCTS
CORPORATION

PHOTO BY GREG BROWN
NOV. 2015

Bldg. Ins. Form 1

R-49

BUILDING DIVISION—BUILDING INSPECTOR'S REPORT CARD F 532.

TYPE BUILDINGS

$23.50

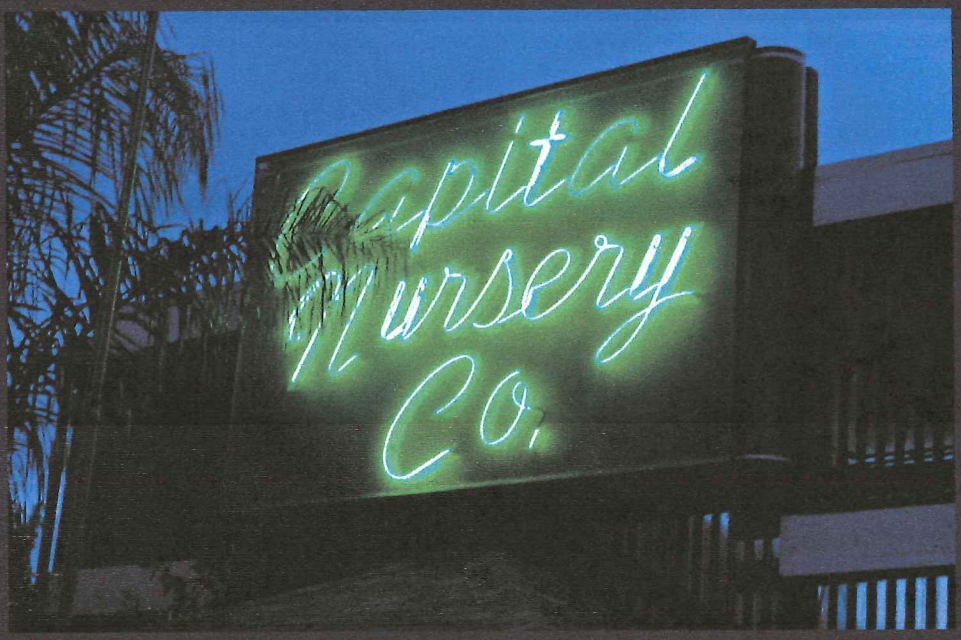
PERMIT NO. S-1452	LOCATION 4850 Freeport Blvd.
DATE Nov. 24, 58	PURPOSE Const sign Class-L
ZONE C-2	OWNER Raley's Super Market
	ARCH'T
	CONT'R Epleo sign 2101-28th St.

VAL. $8,000.	STORIES	ROOMS	APTS.	SIZE

INSP.	DATE	INSPECTOR
FORM		
JOIST		
FRAME		
LATH		
FINAL		

flickr You Explore Create Photos, people, or groups

← Back to photostream



Happyshooter ✓ Following

PRO

Capital Nursery Co.

South Sacramento, Ca

. . .

Caught it just at the right time of day. This neon burns really bright and it has a protective plastic sheeting over it. Came out almost white like the sunlight. A very good working neon, though...

231 views 5 faves 12 comments

Taken on June 4, 2011

SIGN 1955
PACIFICNEON

Nikon D70

ƒ/2.8 50.0 mm

1/15 Flash (off, did not fire)

Show EXIF

★ **Devil Doll**, **Toby Dickens** and **3 more people** faved this

mesmerical PRO 4y
How pretty! That neon script is awesome and I like the palm silhouette over it.

Tom... 4y
OK...You're gonna make me go out at night shootin again... very nice Joe...

Toby Dickens 4y
a capital sign!

Dusty_73 PRO 4y
Joe, this is great!!

John 4y
Green neon really is the best!

Carrie McGann PRO 4y
Blue and green hour! Remember this nursery so well, so much of

This photo is in 1 group

Invite to group

Signs of Sacramento
1,175 items

This photo is in 1 album

Neon In The Night
230 items

Bldg. Ins. Form 1

BUILDING DIVISION—BUILDING INSPECTOR'S REPORT CARD

TYPE BUILDINGS

PERMIT NO. S-177	LOCATION 4700 Freeport
DATE 2-2-55	PURPOSE Sign
ZONE	OWNER Capital Nursery
	ARCH'T
	CONT'R Pacific Neon

VAL. $2,000.00	STORIES	ROOMS	APTS.	SIZE

INSP.	DATE	INSPECTOR
FORM		
JOIST		
FRAME		
LATH		
FINAL		

SACBEE
4.30.1949

ARCHITECT—
LEONARD
F. STARKS

SIGN
1955
PACIFIC
NEON

An Invitation

to attend CAPITAL NURSERY COMPANY'S new educational "GARDEN EXPOSITION" Friday and Saturday, May 6th and 7th—10 A.M. to 6 P.M. Leading authorities on gardening, fertilizing, and insect control will be present. Feel free to bring your gardening problems to them.

Register for door prizes (mdse. orders), to be drawn Monday, May 9th, and mailed to the winners.

Cut bloom of the 1949 and 1950 All-American rose selections will be on display.

FRIDAY
MAY 6th

Arthur Navlet, outstanding radio and newspaper gardener will give a talk on plant propagation—2 P.M. May 6th.

SATURDAY
MAY 7th, 2 P. M.

Norvell Gillespie, syndicated newspaper columnist and radio gardener—also author of "Guide to Pacific Coast Gardening"—will speak on general gardening at 2 P. M. May 7th.

See Our Exhibit at the Home Show
May 5th Through 8th

2nd ANNUAL Sacramento HOME SHOW

Armstrong Bros.
CAPITAL NURSERY CO.
4700 FREEPORT BLVD., PHONE 5-2601

City of
SACRAMENTO
Community Development

LAND PARK COMMERCIAL CENTER (P15-048)

ENVIRONMENTAL IMPACT REPORT (EIR) NOTICE OF PREPARATION (NOP)

COMMENT FORM

Please provide the following information if you wish to receive a Notice of Availability of the Draft EIR and to document the author of comments received. Thank you.

Name: Ben Williams

Email: relampagoblanco@hotmail.com relampagoblanco@hotmail.com.

Address: 4541 Marion Court. Sac CA 95822

Organization: _____

☒ I would like to receive future environmental notices via email.

Please provide us with your written comments by **December 14, 2015.** Comments on the NOP may be sent to:

City of Sacramento
Community Development Department
300 Richards Blvd, Third Floor
Sacramento, CA 95811

Attn: Dana Mahaffey, Associate Planner (Email: dmahaffey@cityofsacramento.org)

You may attach additional pages to this form and/or you may submit your written comments separately. Written comments on the scope of the EIR will be acknowledged in the Draft EIR and will be considered in preparation of the document.

We live on Marion Court where our backyard will border the back of Raleys. We feel that we will be intensely impacted by this development and have the following questions:

(1) What is the noise level for surrounding neighborhood?

(2) Will there be sufficient trees to block view from our backyard into the back of the Raleys store? We do not want the building of Raleys casting a shadow / looming over our home.

(3) What is the sight line from the neighborhood into this development? Will it be intrusive and invade our sight line

(4) What is the amount of ~~flat~~ pollution that will be generated by the development? How will it affect our area ~~quality~~ quality? We have family members with reactive airways diverse in the household.

(5) What is the impact on market value of the nearby house? Will our house depreciate with this development?

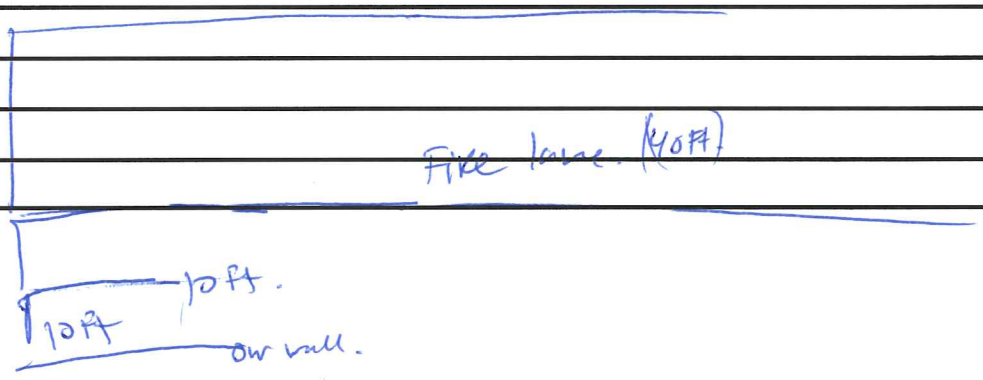
(6) When will demolition and construction take place? We work nights (as physicians) and sleep in the daytime, loud daytime construction would be detrimental to our work and sleep.

(7) How will traffic be affected? Both Sutherville and Freeport are very busy streets already. A large influx of cars would worsen traffic.

(8) How can we opposed the requested entitlement to keep the land be designated for suburban neighborhood low density. We do not want the land to become designated as urban corridor.

(9) What will be the small shop and tenant that will share this development? We want to encourage small independent business to move in, Not large chain stores.

(10) What happen if the shops/tenants become vacant? We already have some vacant shops on the corner of Sutherville and Freeport. That have created poor aesthetic in the nearby Area.



APPENDIX B

CalEEMod Outputs and
Climate Action Plan Checklist -
Summer, Winter, Annual, and Mitigation

CalEEMod Outputs
Proposed Project - Summer, Winter, Annual, and Mitigation

Raleys Project - Construction and Operations

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	439.00	Space	4.00	175,600.00	0
Regional Shopping Center	53.98	1000sqft	1.74	53,980.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for the project

Construction Phase - Modified construction schedule based on general input from the applicant

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips)

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - 11,000 CY would be exported

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	107,218.00	64,944.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	321,654.00	163,470.00
tblAreaCoating	Area_Nonresidential_Exterior	107218	64944
tblAreaCoating	Area_Nonresidential_Interior	321654	163470
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.95	4.00
tblLandUse	LotAcreage	1.24	1.74
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51

tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.18
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.18
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.18
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	18.2032	3.4679	20.9584	9.9670	3.1903	12.5018	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	79.7972	31.6142	33.6099	0.0588	1.5187	1.8552	3.3739	0.4101	1.7368	2.1468	0.0000	5,422.5136	5,422.5136	0.8301	0.0000	5,439.9465
Total	**86.9303**	**111.1458**	**94.4005**	**0.1555**	**19.7219**	**5.3230**	**24.3323**	**10.3771**	**4.9271**	**14.6486**	**0.0000**	**15,157.1323**	**15,157.1323**	**2.7934**	**0.0000**	**15,215.7928**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	8.2667	3.4679	11.0219	4.5051	3.1903	7.0399	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	79.7972	31.6142	33.6099	0.0588	1.5187	1.8552	3.3739	0.4101	1.7368	2.1468	0.0000	5,422.5136	5,422.5136	0.8301	0.0000	5,439.9465
Total	**86.9303**	**111.1458**	**94.4005**	**0.1555**	**9.7855**	**5.3230**	**14.3958**	**4.9152**	**4.9271**	**9.1867**	**0.0000**	**15,157.1323**	**15,157.1323**	**2.7934**	**0.0000**	**15,215.7928**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.38**	**0.00**	**40.84**	**52.63**	**0.00**	**37.29**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Energy	0.0429	0.3903	0.3278	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.3128	468.3128	8.9800e-003	8.5900e-003	471.1629
Mobile	19.3961	27.9928	152.2791	0.3474	22.8371	0.4092	23.2462	6.1006	0.3773	6.4779		27,296.1111	27,296.1111	1.0269		27,317.6763
Total	**28.1136**	**28.3836**	**152.6637**	**0.3497**	**22.8371**	**0.4390**	**23.2761**	**6.1006**	**0.4072**	**6.5078**		**27,764.5444**	**27,764.5444**	**1.0362**	**8.5900e-003**	**27,788.9665**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Energy	0.0416	0.3784	0.3178	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.0205	454.0205	8.7000e-003	8.3200e-003	456.7836
Mobile	19.3961	27.9928	152.2791	0.3474	22.8371	0.4092	23.2462	6.1006	0.3773	6.4779		27,296.1111	27,296.1111	1.0269		27,317.6763
Total	**28.1123**	**28.3717**	**152.6537**	**0.3496**	**22.8371**	**0.4381**	**23.2752**	**6.1006**	**0.4063**	**6.5069**		**27,750.2521**	**27,750.2521**	**1.0359**	**8.3200e-003**	**27,774.5872**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.04**	**0.01**	**0.02**	**0.00**	**0.21**	**0.00**	**0.00**	**0.22**	**0.01**	**0.00**	**0.05**	**0.05**	**0.03**	**3.14**	**0.05**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 163,470; Non-Residential Outdoor: 64,944 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	151.00	63.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5905	30.8955	21.4729	0.0311		2.1322	2.1322		1.9959	1.9959		3,074.5419	3,074.5419	0.7829		3,090.9829
Total	**3.5905**	**30.8955**	**21.4729**	**0.0311**		**2.1322**	**2.1322**		**1.9959**	**1.9959**		**3,074.5419**	**3,074.5419**	**0.7829**		**3,090.9829**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6564	4.4813	7.9501	0.0132	0.3702	0.0699	0.4401	0.1054	0.0642	0.1696		1,293.2001	1,293.2001	9.6500e-003		1,293.4026
Worker	0.5396	0.4866	6.5234	0.0147	1.1487	8.1600e-003	1.1568	0.3047	7.5200e-003	0.3122		1,159.5277	1,159.5277	0.0532		1,160.6448
Total	**1.1959**	**4.9679**	**14.4735**	**0.0278**	**1.5188**	**0.0781**	**1.5969**	**0.4101**	**0.0717**	**0.4818**		**2,452.7277**	**2,452.7277**	**0.0629**		**2,454.0475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5905	30.8955	21.4729	0.0311		2.1322	2.1322		1.9959	1.9959	0.0000	3,074.5419	3,074.5419	0.7829		3,090.9829
Total	**3.5905**	**30.8955**	**21.4729**	**0.0311**		**2.1322**	**2.1322**		**1.9959**	**1.9959**	**0.0000**	**3,074.5419**	**3,074.5419**	**0.7829**		**3,090.9829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.6564	4.4813	7.9501	0.0132	0.3702	0.0699	0.4401	0.1054	0.0642	0.1696		1,293.2001	1,293.2001	9.6500e-003		1,293.4026
Worker	0.5396	0.4866	6.5234	0.0147	1.1487	8.1600e-003	1.1568	0.3047	7.5200e-003	0.3122		1,159.5277	1,159.5277	0.0532		1,160.6448
Total	**1.1959**	**4.9679**	**14.4735**	**0.0278**	**1.5188**	**0.0781**	**1.5969**	**0.4101**	**0.0717**	**0.4818**		**2,452.7277**	**2,452.7277**	**0.0629**		**2,454.0475**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0797	27.1364	20.7885	0.0311		1.7829	1.7829		1.6704	1.6704		3,037.4055	3,037.4055	0.7718		3,053.6129
Total	**3.0797**	**27.1364**	**20.7885**	**0.0311**		**1.7829**	**1.7829**		**1.6704**	**1.6704**		**3,037.4055**	**3,037.4055**	**0.7718**		**3,053.6129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5455	4.0394	6.9376	0.0131	0.3701	0.0642	0.4343	0.1054	0.0590	0.1644		1,269.3316	1,269.3316	9.4000e-003		1,269.5290
Worker	0.4840	0.4384	5.8839	0.0147	1.1487	7.9900e-003	1.1567	0.3047	7.4000e-003	0.3121		1,115.7765	1,115.7765	0.0490		1,116.8046
Total	**1.0296**	**4.4778**	**12.8214**	**0.0278**	**1.5187**	**0.0722**	**1.5910**	**0.4101**	**0.0664**	**0.4765**		**2,385.1081**	**2,385.1081**	**0.0584**		**2,386.3336**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0797	27.1364	20.7885	0.0311		1.7829	1.7829		1.6704	1.6704	0.0000	3,037.4055	3,037.4055	0.7718		3,053.6129
Total	**3.0797**	**27.1364**	**20.7885**	**0.0311**		**1.7829**	**1.7829**		**1.6704**	**1.6704**	**0.0000**	**3,037.4055**	**3,037.4055**	**0.7718**		**3,053.6129**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5455	4.0394	6.9376	0.0131	0.3701	0.0642	0.4343	0.1054	0.0590	0.1644		1,269.3316	1,269.3316	9.4000e-003		1,269.5290
Worker	0.4840	0.4384	5.8839	0.0147	1.1487	7.9900e-003	1.1567	0.3047	7.4000e-003	0.3121		1,115.7765	1,115.7765	0.0490		1,116.8046
Total	**1.0296**	**4.4778**	**12.8214**	**0.0278**	**1.5187**	**0.0722**	**1.5910**	**0.4101**	**0.0664**	**0.4765**		**2,385.1081**	**2,385.1081**	**0.0584**		**2,386.3336**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.4024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**79.7011**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0962	0.0871	1.1690	2.9200e-003	0.2282	1.5900e-003	0.2298	0.0605	1.4700e-003	0.0620		221.6775	221.6775	9.7300e-003		221.8817
Total	**0.0962**	**0.0871**	**1.1690**	**2.9200e-003**	**0.2282**	**1.5900e-003**	**0.2298**	**0.0605**	**1.4700e-003**	**0.0620**		**221.6775**	**221.6775**	**9.7300e-003**		**221.8817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.4024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**79.7011**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0962	0.0871	1.1690	2.9200e-003	0.2282	1.5900e-003	0.2298	0.0605	1.4700e-003	0.0620		221.6775	221.6775	9.7300e-003		221.8817
Total	**0.0962**	**0.0871**	**1.1690**	**2.9200e-003**	**0.2282**	**1.5900e-003**	**0.2298**	**0.0605**	**1.4700e-003**	**0.0620**		**221.6775**	**221.6775**	**9.7300e-003**		**221.8817**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	19.3961	27.9928	152.2791	0.3474	22.8371	0.4092	23.2462	6.1006	0.3773	6.4779		27,296.1111	27,296.1111	1.0269		27,317.6763
Unmitigated	19.3961	27.9928	152.2791	0.3474	22.8371	0.4092	23.2462	6.1006	0.3773	6.4779		27,296.1111	27,296.1111	1.0269		27,317.6763

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,575.14	1,575.14	1575.14	2,586,380	2,586,380
Supermarket	4,992.90	4,992.90	4992.90	8,198,362	8,198,362
Total	6,568.04	6,568.04	6,568.04	10,784,742	10,784,742

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0416	0.3784	0.3178	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.0205	454.0205	8.7000e-003	8.3200e-003	456.7836
NaturalGas Unmitigated	0.0429	0.3903	0.3278	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.3128	468.3128	8.9800e-003	8.5900e-003	471.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	661.07	7.1300e-003	0.0648	0.0544	3.9000e-004		4.9300e-003	4.9300e-003		4.9300e-003	4.9300e-003		77.7730	77.7730	1.4900e-003	1.4300e-003	78.2463
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0429**	**0.3903**	**0.3278**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.3129**	**468.3129**	**8.9800e-003**	**8.5900e-003**	**471.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.634894	6.8500e-003	0.0622	0.0523	3.7000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003		74.6934	74.6934	1.4300e-003	1.3700e-003	75.1479
Supermarket	3.22428	0.0348	0.3161	0.2655	1.9000e-003		0.0240	0.0240		0.0240	0.0240		379.3272	379.3272	7.2700e-003	6.9500e-003	381.6357
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3784**	**0.3178**	**2.2700e-003**		**0.0288**	**0.0288**		**0.0288**	**0.0288**		**454.0205**	**454.0205**	**8.7000e-003**	**8.3200e-003**	**456.7836**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Unmitigated	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.3800e-003	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Total	**8.6745**	**5.3000e-004**	**0.0567**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1204**	**0.1204**	**3.3000e-004**		**0.1273**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.3800e-003	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Total	**8.6745**	**5.3000e-004**	**0.0567**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1204**	**0.1204**	**3.3000e-004**		**0.1273**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project - Construction and Operations

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	439.00	Space	4.00	175,600.00	0
Regional Shopping Center	53.98	1000sqft	1.74	53,980.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for the project

Construction Phase - Modified construction schedule based on general input from the applicant

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips)

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - 11,000 CY would be exported

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	107,218.00	64,944.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	321,654.00	163,470.00
tblAreaCoating	Area_Nonresidential_Exterior	107218	64944
tblAreaCoating	Area_Nonresidential_Interior	321654	163470
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.95	4.00
tblLandUse	LotAcreage	1.24	1.74
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51

tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.18
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.18
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.18
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	18.2032	3.4684	20.9584	9.9670	3.1908	12.5018	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	79.7833	32.0040	37.0833	0.0570	1.5187	1.8561	3.3748	0.4101	1.7377	2.1477	0.0000	5,274.9772	5,274.9772	0.8305	0.0000	5,292.4168
Total	**87.1245**	**112.4371**	**102.1732**	**0.1534**	**19.7219**	**5.3245**	**24.3332**	**10.3771**	**4.9284**	**14.6495**	**0.0000**	**14,982.8703**	**14,982.8703**	**2.7940**	**0.0000**	**15,041.5447**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	8.2667	3.4684	11.0219	4.5051	3.1908	7.0399	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	79.7833	32.0040	37.0833	0.0570	1.5187	1.8561	3.3748	0.4101	1.7377	2.1477	0.0000	5,274.9772	5,274.9772	0.8305	0.0000	5,292.4167
Total	**87.1245**	**112.4371**	**102.1732**	**0.1534**	**9.7855**	**5.3245**	**14.3968**	**4.9152**	**4.9284**	**9.1876**	**0.0000**	**14,982.8703**	**14,982.8703**	**2.7940**	**0.0000**	**15,041.5447**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.38**	**0.00**	**40.83**	**52.63**	**0.00**	**37.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Energy	0.0429	0.3903	0.3278	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.3128	468.3128	8.9800e-003	8.5900e-003	471.1629
Mobile	17.8684	31.7183	171.5402	0.3139	22.8371	0.4128	23.2499	6.1006	0.3806	6.4813		24,764.6553	24,764.6553	1.0282		24,786.2477
Total	**26.5858**	**32.1091**	**171.9248**	**0.3162**	**22.8371**	**0.4426**	**23.2797**	**6.1006**	**0.4105**	**6.5111**		**25,233.0885**	**25,233.0885**	**1.0375**	**8.5900e-003**	**25,257.5379**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Energy	0.0416	0.3784	0.3178	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.0205	454.0205	8.7000e-003	8.3200e-003	456.7836
Mobile	17.8684	31.7183	171.5402	0.3139	22.8371	0.4128	23.2499	6.1006	0.3806	6.4813		24,764.6553	24,764.6553	1.0282		24,786.2477
Total	**26.5845**	**32.0972**	**171.9148**	**0.3162**	**22.8371**	**0.4417**	**23.2788**	**6.1006**	**0.4096**	**6.5102**		**25,218.7962**	**25,218.7962**	**1.0372**	**8.3200e-003**	**25,243.1586**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.04**	**0.01**	**0.02**	**0.00**	**0.21**	**0.00**	**0.00**	**0.22**	**0.01**	**0.00**	**0.06**	**0.06**	**0.03**	**3.14**	**0.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 163,470; Non-Residential Outdoor: 64,944 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	151.00	63.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5905	30.8955	21.4729	0.0311		2.1322	2.1322		1.9959	1.9959		3,074.5419	3,074.5419	0.7829		3,090.9829
Total	**3.5905**	**30.8955**	**21.4729**	**0.0311**		**2.1322**	**2.1322**		**1.9959**	**1.9959**		**3,074.5419**	**3,074.5419**	**0.7829**		**3,090.9829**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8559	4.8009	12.0161	0.0131	0.3702	0.0709	0.4411	0.1054	0.0652	0.1705		1,281.8883	1,281.8883	9.9600e-003		1,282.0974
Worker	0.4661	0.6032	5.8428	0.0129	1.1487	8.1600e-003	1.1568	0.3047	7.5200e-003	0.3122		1,017.8880	1,017.8880	0.0532		1,019.0052
Total	**1.3221**	**5.4041**	**17.8589**	**0.0260**	**1.5188**	**0.0791**	**1.5979**	**0.4101**	**0.0727**	**0.4828**		**2,299.7763**	**2,299.7763**	**0.0632**		**2,301.1026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5905	30.8955	21.4729	0.0311		2.1322	2.1322		1.9959	1.9959	0.0000	3,074.5419	3,074.5419	0.7829		3,090.9829
Total	**3.5905**	**30.8955**	**21.4729**	**0.0311**		**2.1322**	**2.1322**		**1.9959**	**1.9959**	**0.0000**	**3,074.5419**	**3,074.5419**	**0.7829**		**3,090.9829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.8559	4.8009	12.0161	0.0131	0.3702	0.0709	0.4411	0.1054	0.0652	0.1705		1,281.8883	1,281.8883	9.9600e-003		1,282.0974
Worker	0.4661	0.6032	5.8428	0.0129	1.1487	8.1600e-003	1.1568	0.3047	7.5200e-003	0.3122		1,017.8880	1,017.8880	0.0532		1,019.0052
Total	**1.3221**	**5.4041**	**17.8589**	**0.0260**	**1.5188**	**0.0791**	**1.5979**	**0.4101**	**0.0727**	**0.4828**		**2,299.7763**	**2,299.7763**	**0.0632**		**2,301.1026**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0797	27.1364	20.7885	0.0311		1.7829	1.7829		1.6704	1.6704		3,037.4055	3,037.4055	0.7718		3,053.6129
Total	**3.0797**	**27.1364**	**20.7885**	**0.0311**		**1.7829**	**1.7829**		**1.6704**	**1.6704**		**3,037.4055**	**3,037.4055**	**0.7718**		**3,053.6129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6973	4.3248	11.0672	0.0130	0.3701	0.0652	0.4352	0.1054	0.0599	0.1653		1,258.1839	1,258.1839	9.7200e-003		1,258.3880
Worker	0.4141	0.5429	5.2276	0.0129	1.1487	7.9900e-003	1.1567	0.3047	7.4000e-003	0.3121		979.3879	979.3879	0.0490		980.4159
Total	**1.1114**	**4.8677**	**16.2948**	**0.0259**	**1.5187**	**0.0732**	**1.5919**	**0.4101**	**0.0673**	**0.4774**		**2,237.5717**	**2,237.5717**	**0.0587**		**2,238.8039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0797	27.1364	20.7885	0.0311		1.7829	1.7829		1.6704	1.6704	0.0000	3,037.4055	3,037.4055	0.7718		3,053.6129
Total	**3.0797**	**27.1364**	**20.7885**	**0.0311**		**1.7829**	**1.7829**		**1.6704**	**1.6704**	**0.0000**	**3,037.4055**	**3,037.4055**	**0.7718**		**3,053.6129**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6973	4.3248	11.0672	0.0130	0.3701	0.0652	0.4352	0.1054	0.0599	0.1653		1,258.1839	1,258.1839	9.7200e-003		1,258.3880
Worker	0.4141	0.5429	5.2276	0.0129	1.1487	7.9900e-003	1.1567	0.3047	7.4000e-003	0.3121		979.3879	979.3879	0.0490		980.4159
Total	**1.1114**	**4.8677**	**16.2948**	**0.0259**	**1.5187**	**0.0732**	**1.5919**	**0.4101**	**0.0673**	**0.4774**		**2,237.5717**	**2,237.5717**	**0.0587**		**2,238.8039**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.4024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**79.7011**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0823	0.1079	1.0386	2.5600e-003	0.2282	1.5900e-003	0.2298	0.0605	1.4700e-003	0.0620		194.5804	194.5804	9.7300e-003		194.7846
Total	**0.0823**	**0.1079**	**1.0386**	**2.5600e-003**	**0.2282**	**1.5900e-003**	**0.2298**	**0.0605**	**1.4700e-003**	**0.0620**		**194.5804**	**194.5804**	**9.7300e-003**		**194.7846**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.4024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**79.7011**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0823	0.1079	1.0386	2.5600e-003	0.2282	1.5900e-003	0.2298	0.0605	1.4700e-003	0.0620		194.5804	194.5804	9.7300e-003		194.7846
Total	**0.0823**	**0.1079**	**1.0386**	**2.5600e-003**	**0.2282**	**1.5900e-003**	**0.2298**	**0.0605**	**1.4700e-003**	**0.0620**		**194.5804**	**194.5804**	**9.7300e-003**		**194.7846**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.8684	31.7183	171.5402	0.3139	22.8371	0.4128	23.2499	6.1006	0.3806	6.4813		24,764.6553	24,764.6553	1.0282		24,786.2477
Unmitigated	17.8684	31.7183	171.5402	0.3139	22.8371	0.4128	23.2499	6.1006	0.3806	6.4813		24,764.6553	24,764.6553	1.0282		24,786.2477

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,575.14	1,575.14	1575.14	2,586,380	2,586,380
Supermarket	4,992.90	4,992.90	4992.90	8,198,362	8,198,362
Total	6,568.04	6,568.04	6,568.04	10,784,742	10,784,742

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0416	0.3784	0.3178	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.0205	454.0205	8.7000e-003	8.3200e-003	456.7836
NaturalGas Unmitigated	0.0429	0.3903	0.3278	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.3128	468.3128	8.9800e-003	8.5900e-003	471.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	661.07	7.1300e-003	0.0648	0.0544	3.9000e-004		4.9300e-003	4.9300e-003		4.9300e-003	4.9300e-003		77.7730	77.7730	1.4900e-003	1.4300e-003	78.2463
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0429**	**0.3903**	**0.3278**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.3129**	**468.3129**	**8.9800e-003**	**8.5900e-003**	**471.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.634894	6.8500e-003	0.0622	0.0523	3.7000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003		74.6934	74.6934	1.4300e-003	1.3700e-003	75.1479
Supermarket	3.22428	0.0348	0.3161	0.2655	1.9000e-003		0.0240	0.0240		0.0240	0.0240		379.3272	379.3272	7.2700e-003	6.9500e-003	381.6357
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3784**	**0.3178**	**2.2700e-003**		**0.0288**	**0.0288**		**0.0288**	**0.0288**		**454.0205**	**454.0205**	**8.7000e-003**	**8.3200e-003**	**456.7836**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Unmitigated	8.6745	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.3800e-003	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Total	**8.6745**	**5.3000e-004**	**0.0567**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1204**	**0.1204**	**3.3000e-004**		**0.1273**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.2340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.3800e-003	5.3000e-004	0.0567	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004		0.1204	0.1204	3.3000e-004		0.1273
Total	**8.6745**	**5.3000e-004**	**0.0567**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**		**0.1204**	**0.1204**	**3.3000e-004**		**0.1273**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project - Construction and Operations

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	439.00	Space	4.00	175,600.00	0
Regional Shopping Center	53.98	1000sqft	1.74	53,980.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for the project

Construction Phase - Modified construction schedule based on general input from the applicant

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips)

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - 11,000 CY would be exported

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	107,218.00	64,944.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	321,654.00	163,470.00
tblAreaCoating	Area_Nonresidential_Exterior	107218	64944
tblAreaCoating	Area_Nonresidential_Interior	321654	163470
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.95	4.00
tblLandUse	LotAcreage	1.24	1.74
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51

tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.18
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.18
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.18
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3898	3.6598	3.1993	4.6700e-003	0.3347	0.1885	0.5232	0.1296	0.1751	0.3047	0.0000	414.4093	414.4093	0.0802	0.0000	416.0935
2018	1.0530	1.9941	2.1236	3.5300e-003	0.0863	0.1158	0.2020	0.0234	0.1083	0.1317	0.0000	297.8314	297.8314	0.0493	0.0000	298.8661
Total	**1.4428**	**5.6539**	**5.3229**	**8.2000e-003**	**0.4209**	**0.3042**	**0.7252**	**0.1529**	**0.2834**	**0.4364**	**0.0000**	**712.2407**	**712.2407**	**0.1295**	**0.0000**	**714.9596**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3898	3.6598	3.1993	4.6700e-003	0.1905	0.1885	0.3790	0.0691	0.1751	0.2443	0.0000	414.4090	414.4090	0.0802	0.0000	416.0932
2018	1.0530	1.9940	2.1236	3.5300e-003	0.0863	0.1158	0.2020	0.0234	0.1083	0.1317	0.0000	297.8311	297.8311	0.0493	0.0000	298.8659
Total	**1.4428**	**5.6539**	**5.3229**	**8.2000e-003**	**0.2767**	**0.3042**	**0.5810**	**0.0925**	**0.2834**	**0.3759**	**0.0000**	**712.2402**	**712.2402**	**0.1295**	**0.0000**	**714.9591**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.26**	**0.00**	**19.88**	**39.53**	**0.00**	**13.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.5828	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144
Energy	7.8300e-003	0.0712	0.0598	4.3000e-004		5.4100e-003	5.4100e-003		5.4100e-003	5.4100e-003	0.0000	832.8417	832.8417	0.0417	9.7300e-003	836.7338
Mobile	3.0870	5.4671	27.4105	0.0583	4.0147	0.0747	4.0894	1.0756	0.0688	1.1444	0.0000	4,175.0540	4,175.0540	0.1694	0.0000	4,178.6122
Waste						0.0000	0.0000		0.0000	0.0000	74.4733	0.0000	74.4733	4.4013	0.0000	166.8995
Water						0.0000	0.0000		0.0000	0.0000	3.8133	15.5846	19.3979	0.0140	8.4600e-003	22.3149
Total	**4.6776**	**5.5384**	**27.4774**	**0.0588**	**4.0147**	**0.0801**	**4.0948**	**1.0756**	**0.0743**	**1.1498**	**78.2867**	**5,023.4940**	**5,101.7806**	**4.6263**	**0.0182**	**5,204.5749**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.5828	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144
Energy	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	824.9226	824.9226	0.0413	9.6300e-003	828.7752
Mobile	3.0870	5.4671	27.4105	0.0583	4.0147	0.0747	4.0894	1.0756	0.0688	1.1444	0.0000	4,175.0540	4,175.0540	0.1694	0.0000	4,178.6122
Waste						0.0000	0.0000		0.0000	0.0000	18.6183	0.0000	18.6183	1.1003	0.0000	41.7249
Water						0.0000	0.0000		0.0000	0.0000	3.8133	15.5846	19.3979	0.0140	8.4700e-003	22.3191
Total	**4.6774**	**5.5362**	**27.4756**	**0.0587**	**4.0147**	**0.0799**	**4.0947**	**1.0756**	**0.0741**	**1.1497**	**22.4317**	**5,015.5748**	**5,038.0065**	**1.3251**	**0.0181**	**5,071.4458**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.04**	**0.01**	**0.03**	**0.00**	**0.20**	**0.00**	**0.00**	**0.22**	**0.01**	**71.35**	**0.16**	**1.25**	**71.36**	**0.49**	**2.56**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 163,470; Non-Residential Outdoor: 64,944 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	151.00	63.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0406	0.0000	0.0406	6.1400e-003	0.0000	6.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2364	73.2364	0.0201	0.0000	73.6583

Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0406**	**0.0425**	**0.0831**	**6.1400e-003**	**0.0396**	**0.0457**	**0.0000**	**73.2364**	**73.2364**	**0.0201**	**0.0000**	**73.6583**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	2.7700e-003	0.0000	2.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2363	73.2363	0.0201	0.0000	73.6583
Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0183**	**0.0425**	**0.0608**	**2.7700e-003**	**0.0396**	**0.0424**	**0.0000**	**73.2363**	**73.2363**	**0.0201**	**0.0000**	**73.6583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0903**	**0.0138**	**0.1041**	**0.0497**	**0.0127**	**0.0623**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0407**	**0.0138**	**0.0544**	**0.0223**	**0.0127**	**0.0350**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.1312**	**0.0498**	**0.1810**	**0.0541**	**0.0458**	**0.0999**	**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0591	0.0000	0.0591	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.0591**	**0.0498**	**0.1088**	**0.0244**	**0.0458**	**0.0701**	**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1293	1.1122	0.7730	1.1200e-003		0.0768	0.0768		0.0719	0.0719	0.0000	100.4104	100.4104	0.0256	0.0000	100.9473
Total	**0.1293**	**1.1122**	**0.7730**	**1.1200e-003**		**0.0768**	**0.0768**		**0.0719**	**0.0719**	**0.0000**	**100.4104**	**100.4104**	**0.0256**	**0.0000**	**100.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0261	0.1700	0.3417	4.7000e-004	0.0129	2.5300e-003	0.0155	3.7000e-003	2.3300e-003	6.0200e-003	0.0000	42.0790	42.0790	3.2000e-004	0.0000	42.0857
Worker	0.0162	0.0194	0.2033	4.8000e-004	0.0399	2.9000e-004	0.0402	0.0106	2.7000e-004	0.0109	0.0000	34.2210	34.2210	1.7400e-003	0.0000	34.2575
Total	**0.0422**	**0.1894**	**0.5450**	**9.5000e-004**	**0.0529**	**2.8200e-003**	**0.0557**	**0.0143**	**2.6000e-003**	**0.0169**	**0.0000**	**76.3000**	**76.3000**	**2.0600e-003**	**0.0000**	**76.3432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1293	1.1122	0.7730	1.1200e-003		0.0768	0.0768		0.0719	0.0719	0.0000	100.4103	100.4103	0.0256	0.0000	100.9472
Total	**0.1293**	**1.1122**	**0.7730**	**1.1200e-003**		**0.0768**	**0.0768**		**0.0719**	**0.0719**	**0.0000**	**100.4103**	**100.4103**	**0.0256**	**0.0000**	**100.9472**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0261	0.1700	0.3417	4.7000e-004	0.0129	2.5300e-003	0.0155	3.7000e-003	2.3300e-003	6.0200e-003	0.0000	42.0790	42.0790	3.2000e-004	0.0000	42.0857
Worker	0.0162	0.0194	0.2033	4.8000e-004	0.0399	2.9000e-004	0.0402	0.0106	2.7000e-004	0.0109	0.0000	34.2210	34.2210	1.7400e-003	0.0000	34.2575
Total	**0.0422**	**0.1894**	**0.5450**	**9.5000e-004**	**0.0529**	**2.8200e-003**	**0.0557**	**0.0143**	**2.6000e-003**	**0.0169**	**0.0000**	**76.3000**	**76.3000**	**2.0600e-003**	**0.0000**	**76.3432**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1740	1.5332	1.1746	1.7500e-003		0.1007	0.1007		0.0944	0.0944	0.0000	155.6851	155.6851	0.0396	0.0000	156.5158
Total	**0.1740**	**1.5332**	**1.1746**	**1.7500e-003**		**0.1007**	**0.1007**		**0.0944**	**0.0944**	**0.0000**	**155.6851**	**155.6851**	**0.0396**	**0.0000**	**156.5158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0338	0.2403	0.4837	7.4000e-004	0.0203	3.6500e-003	0.0240	5.8000e-003	3.3600e-003	9.1600e-003	0.0000	64.8208	64.8208	4.9000e-004	0.0000	64.8311
Worker	0.0226	0.0274	0.2867	7.5000e-004	0.0627	4.5000e-004	0.0631	0.0167	4.2000e-004	0.0171	0.0000	51.6777	51.6777	2.5100e-003	0.0000	51.7304
Total	**0.0564**	**0.2677**	**0.7705**	**1.4900e-003**	**0.0830**	**4.1000e-003**	**0.0871**	**0.0225**	**3.7800e-003**	**0.0262**	**0.0000**	**116.4985**	**116.4985**	**3.0000e-003**	**0.0000**	**116.5615**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1740	1.5332	1.1746	1.7500e-003		0.1007	0.1007		0.0944	0.0944	0.0000	155.6849	155.6849	0.0396	0.0000	156.5156
Total	**0.1740**	**1.5332**	**1.1746**	**1.7500e-003**		**0.1007**	**0.1007**		**0.0944**	**0.0944**	**0.0000**	**155.6849**	**155.6849**	**0.0396**	**0.0000**	**156.5156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0338	0.2403	0.4837	7.4000e-004	0.0203	3.6500e-003	0.0240	5.8000e-003	3.3600e-003	9.1600e-003	0.0000	64.8208	64.8208	4.9000e-004	0.0000	64.8311
Worker	0.0226	0.0274	0.2867	7.5000e-004	0.0627	4.5000e-004	0.0631	0.0167	4.2000e-004	0.0171	0.0000	51.6777	51.6777	2.5100e-003	0.0000	51.7304
Total	**0.0564**	**0.2677**	**0.7705**	**1.4900e-003**	**0.0830**	**4.1000e-003**	**0.0871**	**0.0225**	**3.7800e-003**	**0.0262**	**0.0000**	**116.4985**	**116.4985**	**3.0000e-003**	**0.0000**	**116.5615**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019

Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7940					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7970**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	9.6000e-004	0.0101	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8172	1.8172	9.0000e-005	0.0000	1.8190
Total	**8.0000e-004**	**9.6000e-004**	**0.0101**	**3.0000e-005**	**2.2000e-003**	**2.0000e-005**	**2.2200e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8172**	**1.8172**	**9.0000e-005**	**0.0000**	**1.8190**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7940					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7970**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	9.6000e-004	0.0101	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8172	1.8172	9.0000e-005	0.0000	1.8190
Total	**8.0000e-004**	**9.6000e-004**	**0.0101**	**3.0000e-005**	**2.2000e-003**	**2.0000e-005**	**2.2200e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8172**	**1.8172**	**9.0000e-005**	**0.0000**	**1.8190**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.0870	5.4671	27.4105	0.0583	4.0147	0.0747	4.0894	1.0756	0.0688	1.1444	0.0000	4,175.0540	4,175.0540	0.1694	0.0000	4,178.6122
Unmitigated	3.0870	5.4671	27.4105	0.0583	4.0147	0.0747	4.0894	1.0756	0.0688	1.1444	0.0000	4,175.0540	4,175.0540	0.1694	0.0000	4,178.6122

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,575.14	1,575.14	1575.14	2,586,380	2,586,380
Supermarket	4,992.90	4,992.90	4992.90	8,198,362	8,198,362
Total	6,568.04	6,568.04	6,568.04	10,784,742	10,784,742

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	749.7544	749.7544	0.0399	8.2500e-003	753.1495
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	755.3073	755.3073	0.0402	8.3100e-003	758.7275
NaturalGas Mitigated	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1682	75.1682	1.4400e-003	1.3800e-003	75.6257
NaturalGas Unmitigated	7.8300e-003	0.0712	0.0598	4.3000e-004		5.4100e-003	5.4100e-003		5.4100e-003	5.4100e-003	0.0000	77.5344	77.5344	1.4900e-003	1.4200e-003	78.0063

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	241291	1.3000e-003	0.0118	9.9400e-003	7.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004	0.0000	12.8762	12.8762	2.5000e-004	2.4000e-004	12.9546
Supermarket	1.21165e+006	6.5300e-003	0.0594	0.0499	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	64.6583	64.6583	1.2400e-003	1.1900e-003	65.0518
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**7.8300e-003**	**0.0712**	**0.0598**	**4.3000e-004**		**5.4100e-003**	**5.4100e-003**		**5.4100e-003**	**5.4100e-003**	**0.0000**	**77.5345**	**77.5345**	**1.4900e-003**	**1.4300e-003**	**78.0063**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	231736	1.2500e-003	0.0114	9.5400e-003	7.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	12.3663	12.3663	2.4000e-004	2.3000e-004	12.4416
Supermarket	1.17686e+006	6.3500e-003	0.0577	0.0485	3.5000e-004		4.3800e-003	4.3800e-003		4.3800e-003	4.3800e-003	0.0000	62.8019	62.8019	1.2000e-003	1.1500e-003	63.1841
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.6000e-003**	**0.0691**	**0.0580**	**4.2000e-004**		**5.2400e-003**	**5.2400e-003**		**5.2400e-003**	**5.2400e-003**	**0.0000**	**75.1682**	**75.1682**	**1.4400e-003**	**1.3800e-003**	**75.6257**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	154528	38.2174	2.0300e-003	4.2000e-004	38.3904
Regional Shopping Center	646680	159.9349	8.5100e-003	1.7600e-003	160.6591
Supermarket	2.2528e+006	557.1551	0.0296	6.1300e-003	559.6780
Total		**755.3073**	**0.0402**	**8.3100e-003**	**758.7275**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	154528	38.2174	2.0300e-003	4.2000e-004	38.3904
Regional Shopping Center	638610	157.9390	8.4000e-003	1.7400e-003	158.6542
Supermarket	2.23842e+006	553.5980	0.0294	6.0900e-003	556.1049
Total		**749.7544**	**0.0399**	**8.2500e-003**	**753.1495**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5828	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144
Unmitigated	1.5828	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5027					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.7000e-004	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144
Total	**1.5828**	**7.0000e-005**	**7.0900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0137**	**0.0137**	**4.0000e-005**	**0.0000**	**0.0144**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5027					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.7000e-004	7.0000e-005	7.0900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0137	0.0137	4.0000e-005	0.0000	0.0144
Total	**1.5828**	**7.0000e-005**	**7.0900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0137**	**0.0137**	**4.0000e-005**	**0.0000**	**0.0144**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	19.3979	0.0140	8.4700e-003	22.3191
Unmitigated	19.3979	0.0140	8.4600e-003	22.3149

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.99843 / 2.45065	8.4632	5.2400e-003	3.1500e-003	9.5510
Supermarket	6.77975 / 0.209683	10.9347	8.7100e-003	5.3100e-003	12.7639
Total		**19.3979**	**0.0140**	**8.4600e-003**	**22.3149**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.99843 / 2.45065	8.4632	5.2600e-003	3.1600e-003	9.5526

Supermarket	6.77975 / 0.209683	10.9347	8.7400e-003	5.3200e-003	12.7665
Total		**19.3979**	**0.0140**	**8.4800e-003**	**22.3191**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.6183	1.1003	0.0000	41.7249
Unmitigated	74.4733	4.4013	0.0000	166.8995

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	56.68	11.5055	0.6800	0.0000	25.7846
Supermarket	310.2	62.9678	3.7213	0.0000	141.1149

Total		**74.4733**	**4.4013**	**0.0000**	**166.8995**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	14.17	2.8764	0.1700	0.0000	6.4462
Supermarket	77.55	15.7420	0.9303	0.0000	35.2787
Total		**18.6183**	**1.1003**	**0.0000**	**41.7249**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Version: CalEEMod.2013.2.2

Date: 3/4/2016 12:45 PM

Raleys Project - Construction and Operations

Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Utilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	5	No Change	0.00
Forklifts	Diesel	No Change	0	4	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00

Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000
Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.80200E-002	5.72230E-001	2.08800E-001	4.60000E-004	2.50800E-002	2.30800E-002	0.00000E+000	4.19709E+001	4.19709E+001	1.29900E-002	0.00000E+000	4.22436E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41922E+001	4.41922E+001	1.35400E-002	0.00000E+000	4.44766E+001
Forklifts	7.06400E-002	6.18840E-001	4.53610E-001	5.60000E-004	5.01000E-002	4.60900E-002	0.00000E+000	5.19424E+001	5.19424E+001	1.60700E-002	0.00000E+000	5.22799E+001
Generator Sets	4.90800E-002	3.93120E-001	3.47560E-001	6.10000E-004	2.56200E-002	2.56200E-002	0.00000E+000	5.22817E+001	5.22817E+001	3.95000E-003	0.00000E+000	5.23647E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67633E+000	8.67633E+000	2.66000E-003	0.00000E+000	8.73216E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25421E+000	8.25421E+000	2.57000E-003	0.00000E+000	8.30817E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32630E+000	7.32630E+000	2.28000E-003	0.00000E+000	7.37419E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78824E+000	4.78824E+000	1.49000E-003	0.00000E+000	4.81954E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81601E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14589E+001	4.14589E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	1.08380E-001	1.05575E+000	8.83400E-001	1.16000E-003	7.71300E-002	7.09600E-002	0.00000E+000	1.06926E+002	1.06926E+002	3.30400E-002	0.00000E+000	1.07620E+002
Welders	4.29900E-002	1.57700E-001	1.73890E-001	2.40000E-004	1.10200E-002	1.10200E-002	0.00000E+000	1.74104E+001	1.74104E+001	3.51000E-003	0.00000E+000	1.74840E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000

Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.80200E-002	5.72230E-001	2.08800E-001	4.60000E-004	2.50800E-002	2.30800E-002	0.00000E+000	4.19709E+001	4.19709E+001	1.29900E-002	0.00000E+000	4.22436E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41921E+001	4.41921E+001	1.35400E-002	0.00000E+000	4.44765E+001
Forklifts	7.06400E-002	6.18840E-001	4.53610E-001	5.60000E-004	5.01000E-002	4.60900E-002	0.00000E+000	5.19423E+001	5.19423E+001	1.60700E-002	0.00000E+000	5.22798E+001
Generator Sets	4.90800E-002	3.93120E-001	3.47560E-001	6.10000E-004	2.56200E-002	2.56200E-002	0.00000E+000	5.22816E+001	5.22816E+001	3.95000E-003	0.00000E+000	5.23646E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67632E+000	8.67632E+000	2.66000E-003	0.00000E+000	8.73215E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25420E+000	8.25420E+000	2.57000E-003	0.00000E+000	8.30816E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32629E+000	7.32629E+000	2.28000E-003	0.00000E+000	7.37418E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78823E+000	4.78823E+000	1.49000E-003	0.00000E+000	4.81953E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81600E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14588E+001	4.14588E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	1.08380E-001	1.05575E+000	8.83400E-001	1.16000E-003	7.71300E-002	7.09600E-002	0.00000E+000	1.06926E+002	1.06926E+002	3.30400E-002	0.00000E+000	1.07620E+002
Welders	4.29900E-002	1.57700E-001	1.73890E-001	2.40000E-004	1.10200E-002	1.10200E-002	0.00000E+000	1.74104E+001	1.74104E+001	3.51000E-003	0.00000E+000	1.74840E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	9.28247E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19130E-006	1.19130E-006	0.00000E+000	0.00000E+000	1.18361E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.35771E-006	1.35771E-006	0.00000E+000	0.00000E+000	1.34903E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15513E-006	1.15513E-006	0.00000E+000	0.00000E+000	1.14767E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14763E-006	1.14763E-006	0.00000E+000	0.00000E+000	1.14581E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15256E-006	1.15256E-006	0.00000E+000	0.00000E+000	1.14519E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21150E-006	1.21150E-006	0.00000E+000	0.00000E+000	1.20363E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36495E-006	1.36495E-006	0.00000E+000	0.00000E+000	1.35608E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.08845E-006	2.08845E-006	0.00000E+000	0.00000E+000	2.07489E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21132E-006	1.21132E-006	0.00000E+000	0.00000E+000	1.20358E-006

Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20601E-006	1.20601E-006	0.00000E+000	0.00000E+000	1.19830E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12227E-006	1.12227E-006	0.00000E+000	0.00000E+000	1.20795E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14874E-006	1.14874E-006	0.00000E+000	0.00000E+000	1.14390E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.14	0.04	0.14	0.04	0.00	0.00
Demolition	Fugitive Dust	0.04	0.01	0.02	0.00	0.55	0.55
Demolition	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading/Utilities	Fugitive Dust	0.13	0.05	0.06	0.02	0.55	0.55
Grading/Utilities	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55

Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.75	0.72	0.74
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	2.94	3.05	3.06	2.33	3.14	3.14	0.00	3.05	3.05	3.36	3.50	3.05
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.36	-0.24	-0.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.11	0.33		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	5.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	

CalEEMod Outputs
Alternative 2 - Summer, Winter, Annual, and Mitigation

Raleys Project Alt 2 - Construction and Operations

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	0.72	125,000.00	0
Parking Lot	1,007.00	Space	6.30	402,800.00	0
Apartments Low Rise	40.00	Dwelling Unit	2.50	40,000.00	107
Regional Shopping Center	125.00	1000sqft	0.72	125,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	131,042.00	149,168.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	393,126.00	375,000.00
tblAreaCoating	Area_Nonresidential_Exterior	131042	149168
tblAreaCoating	Area_Nonresidential_Interior	393126	375000
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	348.18	261.13
tblEnergyUse	T24E	6.08	4.56
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24NG	11,068.06	8,301.04
tblEnergyUse	T24NG	13.07	9.80
tblEnergyUse	T24NG	4.72	3.54
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	2.87	0.72
tblLandUse	LotAcreage	9.06	6.30
tblLandUse	LotAcreage	2.87	0.72
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	6.50	4.51
tblVehicleTrips	HS_TL	5.00	4.51
tblVehicleTrips	HW_TL	10.00	4.51
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	6.59
tblVehicleTrips	ST_TR	2.37	13.31
tblVehicleTrips	ST_TR	49.97	45.00
tblVehicleTrips	SU_TR	6.07	6.59
tblVehicleTrips	SU_TR	0.98	13.31
tblVehicleTrips	SU_TR	25.24	45.00
tblVehicleTrips	WD_TR	11.01	13.31
tblVehicleTrips	WD_TR	42.94	45.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	11.7006	90.9575	83.1309	0.1328	18.2032	5.8093	20.9584	9.9670	5.4356	12.5018	0.0000	12,590.5495	12,590.5495	2.1968	0.0000	12,636.6814
2018	207.7210	80.0942	78.3499	0.1327	2.7668	4.8701	7.6369	0.7466	4.5605	5.3071	0.0000	12,369.2174	12,369.2174	2.1589	0.0000	12,414.5543
Total	**219.4216**	**171.0516**	**161.4808**	**0.2655**	**20.9700**	**10.6794**	**28.5953**	**10.7136**	**9.9961**	**17.8089**	**0.0000**	**24,959.7669**	**24,959.7669**	**4.3557**	**0.0000**	**25,051.2357**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	11.7006	90.9575	83.1309	0.1328	8.2667	5.8093	11.0219	4.5051	5.4356	7.0399	0.0000	12,590.5495	12,590.5495	2.1968	0.0000	12,636.6814
2018	207.7210	80.0942	78.3499	0.1327	2.7668	4.8701	7.6369	0.7466	4.5605	5.3071	0.0000	12,369.2174	12,369.2174	2.1589	0.0000	12,414.5543
Total	**219.4216**	**171.0516**	**161.4808**	**0.2655**	**11.0335**	**10.6794**	**18.6588**	**5.2517**	**9.9961**	**12.3470**	**0.0000**	**24,959.7668**	**24,959.7668**	**4.3557**	**0.0000**	**25,051.2357**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.38**	**0.00**	**34.75**	**50.98**	**0.00**	**30.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Energy	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
Mobile	22.3020	32.1827	175.0735	0.3993	26.2537	0.4704	26.7241	7.0133	0.4338	7.4471		31,380.1978	31,380.1978	1.1806		31,404.9903
Total	**38.4453**	**32.8333**	**178.9875**	**0.4032**	**26.2537**	**0.5360**	**26.7897**	**7.0133**	**0.4994**	**7.5127**	**0.0000**	**32,127.9820**	**32,127.9820**	**1.2014**	**0.0136**	**32,157.4257**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Energy	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
Mobile	22.3020	32.1827	175.0735	0.3993	26.2537	0.4704	26.7241	7.0133	0.4338	7.4471		31,380.1978	31,380.1978	1.1806		31,404.9903
Total	**38.4453**	**32.8333**	**178.9875**	**0.4032**	**26.2537**	**0.5360**	**26.7897**	**7.0133**	**0.4994**	**7.5127**	**0.0000**	**32,127.9820**	**32,127.9820**	**1.2014**	**0.0136**	**32,157.4257**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 81,000; Residential Outdoor: 27,000; Non-Residential Indoor: 375,000; Non-Residential Outdoor: 149,168

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	18.60	226	0.29
Building Construction	Forklifts	4	21.30	89	0.20
Building Construction	Generator Sets	1	21.30	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	18.60	97	0.37
Building Construction	Welders	1	21.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	278.00	111.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.5507	82.1660	57.1137	0.0826		5.6711	5.6711		5.3086	5.3086		8,177.2946	8,177.2946	2.0818		8,221.0128
Total	**9.5507**	**82.1660**	**57.1137**	**0.0826**		**5.6711**	**5.6711**		**5.3086**	**5.3086**		**8,177.2946**	**8,177.2946**	**2.0818**		**8,221.0128**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1565	7.8956	14.0074	0.0232	0.6522	0.1232	0.7753	0.1857	0.1131	0.2988		2,278.4954	2,278.4954	0.0170		2,278.8522
Worker	0.9934	0.8959	12.0099	0.0270	2.1147	0.0150	2.1298	0.5610	0.0139	0.5748		2,134.7595	2,134.7595	0.0979		2,136.8163
Total	**2.1498**	**8.7915**	**26.0172**	**0.0502**	**2.7669**	**0.1382**	**2.9051**	**0.7467**	**0.1270**	**0.8736**		**4,413.2549**	**4,413.2549**	**0.1149**		**4,415.6686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.5507	82.1660	57.1137	0.0826		5.6711	5.6711		5.3086	5.3086	0.0000	8,177.2946	8,177.2946	2.0818		8,221.0128
Total	**9.5507**	**82.1660**	**57.1137**	**0.0826**		**5.6711**	**5.6711**		**5.3086**	**5.3086**	**0.0000**	**8,177.2946**	**8,177.2946**	**2.0818**		**8,221.0128**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	1.1565	7.8956	14.0074	0.0232	0.6522	0.1232	0.7753	0.1857	0.1131	0.2988		2,278.4954	2,278.4954	0.0170		2,278.8522
Worker	0.9934	0.8959	12.0099	0.0270	2.1147	0.0150	2.1298	0.5610	0.0139	0.5748		2,134.7595	2,134.7595	0.0979		2,136.8163
Total	**2.1498**	**8.7915**	**26.0172**	**0.0502**	**2.7669**	**0.1382**	**2.9051**	**0.7467**	**0.1270**	**0.8736**		**4,413.2549**	**4,413.2549**	**0.1149**		**4,415.6686**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.1920	72.1699	55.2941	0.0826		4.7422	4.7422		4.4429	4.4429		8,078.5649	8,078.5649	2.0522		8,121.6613
Total	**8.1920**	**72.1699**	**55.2941**	**0.0826**		**4.7422**	**4.7422**		**4.4429**	**4.4429**		**8,078.5649**	**8,078.5649**	**2.0522**		**8,121.6613**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.9612	7.1171	12.2233	0.0231	0.6520	0.1132	0.7652	0.1856	0.1040	0.2897		2,236.4414	2,236.4414	0.0166		2,236.7893
Worker	0.8911	0.8072	10.8326	0.0270	2.1147	0.0147	2.1295	0.5610	0.0136	0.5746		2,054.2111	2,054.2111	0.0901		2,056.1038
Total	**1.8523**	**7.9242**	**23.0558**	**0.0501**	**2.7668**	**0.1279**	**2.8947**	**0.7466**	**0.1176**	**0.8642**		**4,290.6525**	**4,290.6525**	**0.1067**		**4,292.8931**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.1920	72.1699	55.2941	0.0826		4.7422	4.7422		4.4429	4.4429	0.0000	8,078.5649	8,078.5649	2.0522		8,121.6613
Total	**8.1920**	**72.1699**	**55.2941**	**0.0826**		**4.7422**	**4.7422**		**4.4429**	**4.4429**	**0.0000**	**8,078.5649**	**8,078.5649**	**2.0522**		**8,121.6613**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.9612	7.1171	12.2233	0.0231	0.6520	0.1132	0.7652	0.1856	0.1040	0.2897		2,236.4414	2,236.4414	0.0166		2,236.7893
Worker	0.8911	0.8072	10.8326	0.0270	2.1147	0.0147	2.1295	0.5610	0.0136	0.5746		2,054.2111	2,054.2111	0.0901		2,056.1038
Total	**1.8523**	**7.9242**	**23.0558**	**0.0501**	**2.7668**	**0.1279**	**2.8947**	**0.7466**	**0.1176**	**0.8642**		**4,290.6525**	**4,290.6525**	**0.1067**		**4,292.8931**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	207.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**207.5415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1795	0.1626	2.1821	5.4500e-003	0.4260	2.9600e-003	0.4290	0.1130	2.7400e-003	0.1157		413.7979	413.7979	0.0182		414.1792
Total	**0.1795**	**0.1626**	**2.1821**	**5.4500e-003**	**0.4260**	**2.9600e-003**	**0.4290**	**0.1130**	**2.7400e-003**	**0.1157**		**413.7979**	**413.7979**	**0.0182**		**414.1792**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	207.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**207.5415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1795	0.1626	2.1821	5.4500e-003	0.4260	2.9600e-003	0.4290	0.1130	2.7400e-003	0.1157		413.7979	413.7979	0.0182		414.1792
Total	**0.1795**	**0.1626**	**2.1821**	**5.4500e-003**	**0.4260**	**2.9600e-003**	**0.4290**	**0.1130**	**2.7400e-003**	**0.1157**		**413.7979**	**413.7979**	**0.0182**		**414.1792**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.3020	32.1827	175.0735	0.3993	26.2537	0.4704	26.7241	7.0133	0.4338	7.4471		31,380.1978	31,380.1978	1.1806		31,404.9903
Unmitigated	22.3020	32.1827	175.0735	0.3993	26.2537	0.4704	26.7241	7.0133	0.4338	7.4471		31,380.1978	31,380.1978	1.1806		31,404.9903

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	263.60	263.60	263.60	432,736	432,736
General Office Building	1,663.75	1,663.75	1663.75	2,731,279	2,731,279
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	5,625.00	5,625.00	5625.00	9,234,225	9,234,225
Total	7,552.35	7,552.35	7,552.35	12,398,240	12,398,240

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	4.51	4.51	4.51	46.50	12.50	41.00	100	0	0
General Office Building	4.51	4.51	4.51	33.00	48.00	19.00	100	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
NaturalGas Unmitigated	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	3589.04	0.0387	0.3519	0.2956	2.1100e-003		0.0267	0.0267		0.0267	0.0267		422.2401	422.2401	8.0900e-003	7.7400e-003	424.8098
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1530.82	0.0165	0.1501	0.1261	9.0000e-004		0.0114	0.0114		0.0114	0.0114		180.0967	180.0967	3.4500e-003	3.3000e-003	181.1927
Apartments Low Rise	1183.46	0.0128	0.1091	0.0464	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003		139.2302	139.2302	2.6700e-003	2.5500e-003	140.0775
Total		**0.0680**	**0.6110**	**0.4681**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**741.5670**	**741.5670**	**0.0142**	**0.0136**	**746.0800**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.53082	0.0165	0.1501	0.1261	9.0000e-004		0.0114	0.0114		0.0114	0.0114		180.0967	180.0967	3.4500e-003	3.3000e-003	181.1927
Apartments Low Rise	1.18346	0.0128	0.1091	0.0464	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003		139.2302	139.2302	2.6700e-003	2.5500e-003	140.0775
General Office Building	3.58904	0.0387	0.3519	0.2956	2.1100e-003		0.0267	0.0267		0.0267	0.0267		422.2401	422.2401	8.0900e-003	7.7400e-003	424.8098
Total		**0.0680**	**0.6110**	**0.4681**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**741.5670**	**741.5670**	**0.0142**	**0.0136**	**746.0800**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Unmitigated	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	1.1356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.8259					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1138	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186		6.2172	6.2172	6.5800e-003		6.3553
Total	**16.0753**	**0.0396**	**3.4460**	**1.8000e-004**		**0.0186**	**0.0186**		**0.0186**	**0.0186**	**0.0000**	**6.2172**	**6.2172**	**6.5800e-003**	**0.0000**	**6.3553**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.8259					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1138	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186		6.2172	6.2172	6.5800e-003		6.3553
Total	**16.0753**	**0.0396**	**3.4460**	**1.8000e-004**		**0.0186**	**0.0186**		**0.0186**	**0.0186**	**0.0000**	**6.2172**	**6.2172**	**6.5800e-003**	**0.0000**	**6.3553**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 2 - Construction and Operations

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	0.72	125,000.00	0
Parking Lot	1,007.00	Space	6.30	402,800.00	0
Apartments Low Rise	40.00	Dwelling Unit	2.50	40,000.00	107
Regional Shopping Center	125.00	1000sqft	0.72	125,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	131,042.00	149,168.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	393,126.00	375,000.00
tblAreaCoating	Area_Nonresidential_Exterior	131042	149168
tblAreaCoating	Area_Nonresidential_Interior	393126	375000
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	348.18	261.13
tblEnergyUse	T24E	6.08	4.56
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24NG	11,068.06	8,301.04
tblEnergyUse	T24NG	13.07	9.80
tblEnergyUse	T24NG	4.72	3.54
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	2.87	0.72
tblLandUse	LotAcreage	9.06	6.30
tblLandUse	LotAcreage	2.87	0.72
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	6.50	4.51
tblVehicleTrips	HS_TL	5.00	4.51
tblVehicleTrips	HW_TL	10.00	4.51
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	6.59
tblVehicleTrips	ST_TR	2.37	13.31
tblVehicleTrips	ST_TR	49.97	45.00
tblVehicleTrips	SU_TR	6.07	6.59
tblVehicleTrips	SU_TR	0.98	13.31
tblVehicleTrips	SU_TR	25.24	45.00
tblVehicleTrips	WD_TR	11.01	13.31
tblVehicleTrips	WD_TR	42.94	45.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	11.9170	91.7352	89.0418	0.1294	18.2032	5.8111	20.9584	9.9670	5.4372	12.5018	0.0000	12,309.8521	12,309.8521	2.1973	0.0000	12,355.9956
2018	207.6951	80.7893	84.4177	0.1293	2.7668	4.8718	7.6385	0.7466	4.5620	5.3086	0.0000	12,098.4765	12,098.4765	2.1595	0.0000	12,143.8252
Total	**219.6121**	**172.5245**	**173.4594**	**0.2587**	**20.9700**	**10.6828**	**28.5969**	**10.7136**	**9.9992**	**17.8104**	**0.0000**	**24,408.3286**	**24,408.3286**	**4.3568**	**0.0000**	**24,499.8208**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	11.9170	91.7352	89.0418	0.1294	8.2667	5.8111	11.0219	4.5051	5.4372	7.0399	0.0000	12,309.8521	12,309.8521	2.1973	0.0000	12,355.9956
2018	207.6951	80.7893	84.4177	0.1293	2.7668	4.8718	7.6385	0.7466	4.5620	5.3086	0.0000	12,098.4765	12,098.4765	2.1595	0.0000	12,143.8252
Total	**219.6121**	**172.5245**	**173.4594**	**0.2587**	**11.0335**	**10.6828**	**18.6605**	**5.2517**	**9.9992**	**12.3485**	**0.0000**	**24,408.3286**	**24,408.3286**	**4.3568**	**0.0000**	**24,499.8207**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.38**	**0.00**	**34.75**	**50.98**	**0.00**	**30.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Energy	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
Mobile	20.5453	36.4657	197.2264	0.3609	26.2537	0.4746	26.7283	7.0133	0.4376	7.4509		28,470.0007	28,470.0007	1.1821		28,494.8244
Total	**36.6886**	**37.1163**	**201.1405**	**0.3648**	**26.2537**	**0.5402**	**26.7939**	**7.0133**	**0.5032**	**7.5166**	**0.0000**	**29,217.7849**	**29,217.7849**	**1.2029**	**0.0136**	**29,247.2598**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Energy	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
Mobile	20.5453	36.4657	197.2264	0.3609	26.2537	0.4746	26.7283	7.0133	0.4376	7.4509		28,470.0007	28,470.0007	1.1821		28,494.8244
Total	**36.6886**	**37.1163**	**201.1405**	**0.3648**	**26.2537**	**0.5402**	**26.7939**	**7.0133**	**0.5032**	**7.5166**	**0.0000**	**29,217.7849**	**29,217.7849**	**1.2029**	**0.0136**	**29,247.2598**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 81,000; Residential Outdoor: 27,000; Non-Residential Indoor: 375,000; Non-Residential Outdoor: 149,168

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	18.60	226	0.29
Building Construction	Forklifts	4	21.30	89	0.20
Building Construction	Generator Sets	1	21.30	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	18.60	97	0.37
Building Construction	Welders	1	21.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	278.00	111.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.5507	82.1660	57.1137	0.0826		5.6711	5.6711		5.3086	5.3086		8,177.2946	8,177.2946	2.0818		8,221.0128
Total	**9.5507**	**82.1660**	**57.1137**	**0.0826**		**5.6711**	**5.6711**		**5.3086**	**5.3086**		**8,177.2946**	**8,177.2946**	**2.0818**		**8,221.0128**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5081	8.4588	21.1712	0.0231	0.6522	0.1250	0.7771	0.1857	0.1148	0.3005		2,258.5652	2,258.5652	0.0175		2,258.9335
Worker	0.8582	1.1105	10.7569	0.0237	2.1147	0.0150	2.1298	0.5610	0.0139	0.5748		1,873.9924	1,873.9924	0.0979		1,876.0492
Total	**2.3663**	**9.5692**	**31.9281**	**0.0468**	**2.7669**	**0.1400**	**2.9069**	**0.7467**	**0.1286**	**0.8753**		**4,132.5576**	**4,132.5576**	**0.1155**		**4,134.9828**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	9.5507	82.1660	57.1137	0.0826		5.6711	5.6711		5.3086	5.3086	0.0000	8,177.2946	8,177.2946	2.0818		8,221.0128
Total	**9.5507**	**82.1660**	**57.1137**	**0.0826**		**5.6711**	**5.6711**		**5.3086**	**5.3086**	**0.0000**	**8,177.2946**	**8,177.2946**	**2.0818**		**8,221.0128**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	1.5081	8.4588	21.1712	0.0231	0.6522	0.1250	0.7771	0.1857	0.1148	0.3005		2,258.5652	2,258.5652	0.0175		2,258.9335
Worker	0.8582	1.1105	10.7569	0.0237	2.1147	0.0150	2.1298	0.5610	0.0139	0.5748		1,873.9924	1,873.9924	0.0979		1,876.0492
Total	**2.3663**	**9.5692**	**31.9281**	**0.0468**	**2.7669**	**0.1400**	**2.9069**	**0.7467**	**0.1286**	**0.8753**		**4,132.5576**	**4,132.5576**	**0.1155**		**4,134.9828**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.1920	72.1699	55.2941	0.0826		4.7422	4.7422		4.4429	4.4429		8,078.5649	8,078.5649	2.0522		8,121.6613
Total	**8.1920**	**72.1699**	**55.2941**	**0.0826**		**4.7422**	**4.7422**		**4.4429**	**4.4429**		**8,078.5649**	**8,078.5649**	**2.0522**		**8,121.6613**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2286	7.6199	19.4994	0.0230	0.6520	0.1148	0.7669	0.1856	0.1055	0.2912		2,216.8001	2,216.8001	0.0171		2,217.1598
Worker	0.7625	0.9995	9.6242	0.0237	2.1147	0.0147	2.1295	0.5610	0.0136	0.5746		1,803.1114	1,803.1114	0.0901		1,805.0041
Total	**1.9910**	**8.6194**	**29.1236**	**0.0467**	**2.7668**	**0.1295**	**2.8963**	**0.7466**	**0.1192**	**0.8657**		**4,019.9115**	**4,019.9115**	**0.1073**		**4,022.1639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.1920	72.1699	55.2941	0.0826		4.7422	4.7422		4.4429	4.4429	0.0000	8,078.5649	8,078.5649	2.0522		8,121.6613
Total	**8.1920**	**72.1699**	**55.2941**	**0.0826**		**4.7422**	**4.7422**		**4.4429**	**4.4429**	**0.0000**	**8,078.5649**	**8,078.5649**	**2.0522**		**8,121.6613**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2286	7.6199	19.4994	0.0230	0.6520	0.1148	0.7669	0.1856	0.1055	0.2912		2,216.8001	2,216.8001	0.0171		2,217.1598
Worker	0.7625	0.9995	9.6242	0.0237	2.1147	0.0147	2.1295	0.5610	0.0136	0.5746		1,803.1114	1,803.1114	0.0901		1,805.0041
Total	**1.9910**	**8.6194**	**29.1236**	**0.0467**	**2.7668**	**0.1295**	**2.8963**	**0.7466**	**0.1192**	**0.8657**		**4,019.9115**	**4,019.9115**	**0.1073**		**4,022.1639**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	207.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**207.5415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1536	0.2013	1.9387	4.7800e-003	0.4260	2.9600e-003	0.4290	0.1130	2.7400e-003	0.1157		363.2167	363.2167	0.0182		363.5980
Total	**0.1536**	**0.2013**	**1.9387**	**4.7800e-003**	**0.4260**	**2.9600e-003**	**0.4290**	**0.1130**	**2.7400e-003**	**0.1157**		**363.2167**	**363.2167**	**0.0182**		**363.5980**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	207.2429					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**207.5415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1536	0.2013	1.9387	4.7800e-003	0.4260	2.9600e-003	0.4290	0.1130	2.7400e-003	0.1157		363.2167	363.2167	0.0182		363.5980
Total	**0.1536**	**0.2013**	**1.9387**	**4.7800e-003**	**0.4260**	**2.9600e-003**	**0.4290**	**0.1130**	**2.7400e-003**	**0.1157**		**363.2167**	**363.2167**	**0.0182**		**363.5980**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	20.5453	36.4657	197.2264	0.3609	26.2537	0.4746	26.7283	7.0133	0.4376	7.4509		28,470.0007	28,470.0007	1.1821		28,494.8244
Unmitigated	20.5453	36.4657	197.2264	0.3609	26.2537	0.4746	26.7283	7.0133	0.4376	7.4509		28,470.0007	28,470.0007	1.1821		28,494.8244

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	263.60	263.60	263.60	432,736	432,736
General Office Building	1,663.75	1,663.75	1663.75	2,731,279	2,731,279
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	5,625.00	5,625.00	5625.00	9,234,225	9,234,225
Total	7,552.35	7,552.35	7,552.35	12,398,240	12,398,240

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	4.51	4.51	4.51	46.50	12.50	41.00	100	0	0
General Office Building	4.51	4.51	4.51	33.00	48.00	19.00	100	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801
NaturalGas Unmitigated	0.0680	0.6110	0.4681	3.7100e-003		0.0470	0.0470		0.0470	0.0470		741.5670	741.5670	0.0142	0.0136	746.0801

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	3589.04	0.0387	0.3519	0.2956	2.1100e-003		0.0267	0.0267		0.0267	0.0267		422.2401	422.2401	8.0900e-003	7.7400e-003	424.8098
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1530.82	0.0165	0.1501	0.1261	9.0000e-004		0.0114	0.0114		0.0114	0.0114		180.0967	180.0967	3.4500e-003	3.3000e-003	181.1927
Apartments Low Rise	1183.46	0.0128	0.1091	0.0464	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003		139.2302	139.2302	2.6700e-003	2.5500e-003	140.0775
Total		**0.0680**	**0.6110**	**0.4681**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**741.5670**	**741.5670**	**0.0142**	**0.0136**	**746.0800**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.53082	0.0165	0.1501	0.1261	9.0000e-004		0.0114	0.0114		0.0114	0.0114		180.0967	180.0967	3.4500e-003	3.3000e-003	181.1927
Apartments Low Rise	1.18346	0.0128	0.1091	0.0464	7.0000e-004		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003		139.2302	139.2302	2.6700e-003	2.5500e-003	140.0775
General Office Building	3.58904	0.0387	0.3519	0.2956	2.1100e-003		0.0267	0.0267		0.0267	0.0267		422.2401	422.2401	8.0900e-003	7.7400e-003	424.8098
Total		**0.0680**	**0.6110**	**0.4681**	**3.7100e-003**		**0.0470**	**0.0470**		**0.0470**	**0.0470**		**741.5670**	**741.5670**	**0.0142**	**0.0136**	**746.0800**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553
Unmitigated	16.0753	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186	0.0000	6.2172	6.2172	6.5800e-003	0.0000	6.3553

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	1.1356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.8259					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1138	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186		6.2172	6.2172	6.5800e-003		6.3553
Total	**16.0753**	**0.0396**	**3.4460**	**1.8000e-004**		**0.0186**	**0.0186**		**0.0186**	**0.0186**	**0.0000**	**6.2172**	**6.2172**	**6.5800e-003**	**0.0000**	**6.3553**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	14.8259					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1138	0.0396	3.4460	1.8000e-004		0.0186	0.0186		0.0186	0.0186		6.2172	6.2172	6.5800e-003		6.3553
Total	**16.0753**	**0.0396**	**3.4460**	**1.8000e-004**		**0.0186**	**0.0186**		**0.0186**	**0.0186**	**0.0000**	**6.2172**	**6.2172**	**6.5800e-003**	**0.0000**	**6.3553**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 2 - Construction and Operations

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	0.72	125,000.00	0
Parking Lot	1,007.00	Space	6.30	402,800.00	0
Apartments Low Rise	40.00	Dwelling Unit	2.50	40,000.00	107
Regional Shopping Center	125.00	1000sqft	0.72	125,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	131,042.00	149,168.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	393,126.00	375,000.00
tblAreaCoating	Area_Nonresidential_Exterior	131042	149168
tblAreaCoating	Area_Nonresidential_Interior	393126	375000
tblConstructionPhase	NumDays	300.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	T24E	348.18	261.13
tblEnergyUse	T24E	6.08	4.56
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24NG	11,068.06	8,301.04
tblEnergyUse	T24NG	13.07	9.80
tblEnergyUse	T24NG	4.72	3.54
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	2.87	0.72
tblLandUse	LotAcreage	9.06	6.30
tblLandUse	LotAcreage	2.87	0.72
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	8.00	21.30
tblOffRoadEquipment	UsageHours	7.00	18.60
tblOffRoadEquipment	UsageHours	8.00	21.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	6.50	4.51
tblVehicleTrips	HS_TL	5.00	4.51
tblVehicleTrips	HW_TL	10.00	4.51
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	6.59
tblVehicleTrips	ST_TR	2.37	13.31
tblVehicleTrips	ST_TR	49.97	45.00
tblVehicleTrips	SU_TR	6.07	6.59
tblVehicleTrips	SU_TR	0.98	13.31
tblVehicleTrips	SU_TR	25.24	45.00
tblVehicleTrips	WD_TR	11.01	13.31
tblVehicleTrips	WD_TR	42.94	45.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.6378	5.6514	4.9137	7.2900e-003	0.3781	0.3181	0.6962	0.1413	0.2964	0.4377	0.0000	641.9005	641.9005	0.1243	0.0000	644.5113
2018	2.6657	4.7454	4.6916	7.6600e-003	0.1563	0.2861	0.4425	0.0423	0.2679	0.3102	0.0000	650.6469	650.6469	0.1175	0.0000	653.1136
Total	**3.3035**	**10.3968**	**9.6054**	**0.0150**	**0.5344**	**0.6042**	**1.1386**	**0.1836**	**0.5643**	**0.7479**	**0.0000**	**1,292.5474**	**1,292.5474**	**0.2418**	**0.0000**	**1,297.6249**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.6378	5.6514	4.9137	7.2900e-003	0.2339	0.3181	0.5520	0.0809	0.2964	0.3773	0.0000	641.8999	641.8999	0.1243	0.0000	644.5108
2018	2.6657	4.7454	4.6916	7.6600e-003	0.1563	0.2861	0.4425	0.0423	0.2679	0.3102	0.0000	650.6464	650.6464	0.1175	0.0000	653.1131
Total	**3.3035**	**10.3968**	**9.6054**	**0.0150**	**0.3903**	**0.6042**	**0.9945**	**0.1232**	**0.5643**	**0.6874**	**0.0000**	**1,292.5463**	**1,292.5463**	**0.2418**	**0.0000**	**1,297.6238**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**26.98**	**0.00**	**12.66**	**32.92**	**0.00**	**8.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9272	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207
Energy	0.0124	0.1115	0.0854	6.8000e-004		8.5700e-003	8.5700e-003		8.5700e-003	8.5700e-003	0.0000	1,066.3110	1,066.3110	0.0525	0.0126	1,071.3308
Mobile	3.5495	6.2854	31.5143	0.0671	4.6154	0.0858	4.7012	1.2365	0.0791	1.3156	0.0000	4,799.7353	4,799.7353	0.1948	0.0000	4,803.8260
Waste						0.0000	0.0000		0.0000	0.0000	53.9753	0.0000	53.9753	3.1899	0.0000	120.9621
Water						0.0000	0.0000		0.0000	0.0000	12.0583	60.1197	72.1779	0.0447	0.0269	81.4508
Total	**6.4891**	**6.4018**	**32.0305**	**0.0678**	**4.6154**	**0.0967**	**4.7121**	**1.2365**	**0.0900**	**1.3265**	**66.0336**	**5,926.8710**	**5,992.9045**	**3.4826**	**0.0395**	**6,078.2904**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9272	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207
Energy	0.0124	0.1115	0.0854	6.8000e-004		8.5700e-003	8.5700e-003		8.5700e-003	8.5700e-003	0.0000	1,066.3110	1,066.3110	0.0525	0.0126	1,071.3308
Mobile	3.5495	6.2854	31.5143	0.0671	4.6154	0.0858	4.7012	1.2365	0.0791	1.3156	0.0000	4,799.7353	4,799.7353	0.1948	0.0000	4,803.8260
Waste						0.0000	0.0000		0.0000	0.0000	13.4938	0.0000	13.4938	0.7975	0.0000	30.2405
Water						0.0000	0.0000		0.0000	0.0000	12.0583	60.1197	72.1779	0.0449	0.0269	81.4643
Total	**6.4891**	**6.4018**	**32.0305**	**0.0678**	**4.6154**	**0.0967**	**4.7121**	**1.2365**	**0.0900**	**1.3265**	**25.5521**	**5,926.8710**	**5,952.4231**	**1.0904**	**0.0396**	**5,987.5823**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**61.30**	**0.00**	**0.68**	**68.69**	**-0.10**	**1.49**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 81,000; Residential Outdoor: 27,000; Non-Residential Indoor: 375,000; Non-Residential Outdoor: 149,168

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	18.60	226	0.29
Building Construction	Forklifts	4	21.30	89	0.20

Building Construction	Generator Sets	1	21.30	84	0.74
Building Construction	Tractors/Loaders/Backhoes	4	18.60	97	0.37
Building Construction	Welders	1	21.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	278.00	111.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0406	0.0000	0.0406	6.1400e-003	0.0000	6.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2364	73.2364	0.0201	0.0000	73.6583

Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0406**	**0.0425**	**0.0831**	**6.1400e-003**	**0.0396**	**0.0457**	**0.0000**	**73.2364**	**73.2364**	**0.0201**	**0.0000**	**73.6583**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	2.7700e-003	0.0000	2.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2363	73.2363	0.0201	0.0000	73.6583
Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0183**	**0.0425**	**0.0608**	**2.7700e-003**	**0.0396**	**0.0424**	**0.0000**	**73.2363**	**73.2363**	**0.0201**	**0.0000**	**73.6583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0903**	**0.0138**	**0.1041**	**0.0497**	**0.0127**	**0.0623**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0407**	**0.0138**	**0.0544**	**0.0223**	**0.0127**	**0.0350**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.1312**	**0.0498**	**0.1810**	**0.0541**	**0.0458**	**0.0999**	**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0591	0.0000	0.0591	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.0591**	**0.0498**	**0.1088**	**0.0244**	**0.0458**	**0.0701**	**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3438	2.9580	2.0561	2.9700e-003		0.2042	0.2042		0.1911	0.1911	0.0000	267.0594	267.0594	0.0680	0.0000	268.4872
Total	**0.3438**	**2.9580**	**2.0561**	**2.9700e-003**		**0.2042**	**0.2042**		**0.1911**	**0.1911**	**0.0000**	**267.0594**	**267.0594**	**0.0680**	**0.0000**	**268.4872**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0459	0.2994	0.6021	8.3000e-004	0.0228	4.4600e-003	0.0273	6.5200e-003	4.1000e-003	0.0106	0.0000	74.1392	74.1392	5.6000e-004	0.0000	74.1510
Worker	0.0298	0.0358	0.3743	8.8000e-004	0.0735	5.4000e-004	0.0740	0.0196	5.0000e-004	0.0201	0.0000	63.0029	63.0029	3.2000e-003	0.0000	63.0701
Total	**0.0757**	**0.3352**	**0.9764**	**1.7100e-003**	**0.0963**	**5.0000e-003**	**0.1013**	**0.0261**	**4.6000e-003**	**0.0307**	**0.0000**	**137.1421**	**137.1421**	**3.7600e-003**	**0.0000**	**137.2211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3438	2.9580	2.0561	2.9700e-003		0.2042	0.2042		0.1911	0.1911	0.0000	267.0591	267.0591	0.0680	0.0000	268.4869
Total	**0.3438**	**2.9580**	**2.0561**	**2.9700e-003**		**0.2042**	**0.2042**		**0.1911**	**0.1911**	**0.0000**	**267.0591**	**267.0591**	**0.0680**	**0.0000**	**268.4869**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0459	0.2994	0.6021	8.3000e-004	0.0228	4.4600e-003	0.0273	6.5200e-003	4.1000e-003	0.0106	0.0000	74.1392	74.1392	5.6000e-004	0.0000	74.1510
Worker	0.0298	0.0358	0.3743	8.8000e-004	0.0735	5.4000e-004	0.0740	0.0196	5.0000e-004	0.0201	0.0000	63.0029	63.0029	3.2000e-003	0.0000	63.0701
Total	**0.0757**	**0.3352**	**0.9764**	**1.7100e-003**	**0.0963**	**5.0000e-003**	**0.1013**	**0.0261**	**4.6000e-003**	**0.0307**	**0.0000**	**137.1421**	**137.1421**	**3.7600e-003**	**0.0000**	**137.2211**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4629	4.0776	3.1241	4.6700e-003		0.2679	0.2679		0.2510	0.2510	0.0000	414.0744	414.0744	0.1052	0.0000	416.2834
Total	**0.4629**	**4.0776**	**3.1241**	**4.6700e-003**		**0.2679**	**0.2679**		**0.2510**	**0.2510**	**0.0000**	**414.0744**	**414.0744**	**0.1052**	**0.0000**	**416.2834**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0595	0.4234	0.8523	1.3000e-003	0.0358	6.4300e-003	0.0422	0.0102	5.9100e-003	0.0161	0.0000	114.2081	114.2081	8.6000e-004	0.0000	114.2262
Worker	0.0417	0.0505	0.5279	1.3800e-003	0.1154	8.3000e-004	0.1162	0.0307	7.7000e-004	0.0315	0.0000	95.1417	95.1417	4.6200e-003	0.0000	95.2388
Total	**0.1012**	**0.4739**	**1.3802**	**2.6800e-003**	**0.1511**	**7.2600e-003**	**0.1584**	**0.0409**	**6.6800e-003**	**0.0476**	**0.0000**	**209.3498**	**209.3498**	**5.4800e-003**	**0.0000**	**209.4649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4629	4.0776	3.1241	4.6700e-003		0.2679	0.2679		0.2510	0.2510	0.0000	414.0739	414.0739	0.1052	0.0000	416.2829
Total	**0.4629**	**4.0776**	**3.1241**	**4.6700e-003**		**0.2679**	**0.2679**		**0.2510**	**0.2510**	**0.0000**	**414.0739**	**414.0739**	**0.1052**	**0.0000**	**416.2829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0595	0.4234	0.8523	1.3000e-003	0.0358	6.4300e-003	0.0422	0.0102	5.9100e-003	0.0161	0.0000	114.2081	114.2081	8.6000e-004	0.0000	114.2262
Worker	0.0417	0.0505	0.5279	1.3800e-003	0.1154	8.3000e-004	0.1162	0.0307	7.7000e-004	0.0315	0.0000	95.1417	95.1417	4.6200e-003	0.0000	95.2388
Total	**0.1012**	**0.4739**	**1.3802**	**2.6800e-003**	**0.1511**	**7.2600e-003**	**0.1584**	**0.0409**	**6.6800e-003**	**0.0476**	**0.0000**	**209.3498**	**209.3498**	**5.4800e-003**	**0.0000**	**209.4649**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019

Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0724					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**2.0754**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	1.8000e-003	0.0188	5.0000e-005	4.1100e-003	3.0000e-005	4.1400e-003	1.0900e-003	3.0000e-005	1.1200e-003	0.0000	3.3921	3.3921	1.6000e-004	0.0000	3.3955
Total	**1.4900e-003**	**1.8000e-003**	**0.0188**	**5.0000e-005**	**4.1100e-003**	**3.0000e-005**	**4.1400e-003**	**1.0900e-003**	**3.0000e-005**	**1.1200e-003**	**0.0000**	**3.3921**	**3.3921**	**1.6000e-004**	**0.0000**	**3.3955**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0724					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**2.0754**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	1.8000e-003	0.0188	5.0000e-005	4.1100e-003	3.0000e-005	4.1400e-003	1.0900e-003	3.0000e-005	1.1200e-003	0.0000	3.3921	3.3921	1.6000e-004	0.0000	3.3955
Total	**1.4900e-003**	**1.8000e-003**	**0.0188**	**5.0000e-005**	**4.1100e-003**	**3.0000e-005**	**4.1400e-003**	**1.0900e-003**	**3.0000e-005**	**1.1200e-003**	**0.0000**	**3.3921**	**3.3921**	**1.6000e-004**	**0.0000**	**3.3955**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.5495	6.2854	31.5143	0.0671	4.6154	0.0858	4.7012	1.2365	0.0791	1.3156	0.0000	4,799.7353	4,799.7353	0.1948	0.0000	4,803.8260
Unmitigated	3.5495	6.2854	31.5143	0.0671	4.6154	0.0858	4.7012	1.2365	0.0791	1.3156	0.0000	4,799.7353	4,799.7353	0.1948	0.0000	4,803.8260

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	263.60	263.60	263.60	432,736	432,736
General Office Building	1,663.75	1,663.75	1663.75	2,731,279	2,731,279
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	5,625.00	5,625.00	5625.00	9,234,225	9,234,225
Total	7,552.35	7,552.35	7,552.35	12,398,240	12,398,240

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	4.51	4.51	4.51	46.50	12.50	41.00	100	0	0
General Office Building	4.51	4.51	4.51	33.00	48.00	19.00	100	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	943.5363	943.5363	0.0502	0.0104	947.8089
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	943.5363	943.5363	0.0502	0.0104	947.8089
NaturalGas Mitigated	0.0124	0.1115	0.0854	6.8000e-004		8.5700e-003	8.5700e-003		8.5700e-003	8.5700e-003	0.0000	122.7747	122.7747	2.3500e-003	2.2500e-003	123.5219
NaturalGas Unmitigated	0.0124	0.1115	0.0854	6.8000e-004		8.5700e-003	8.5700e-003		8.5700e-003	8.5700e-003	0.0000	122.7747	122.7747	2.3500e-003	2.2500e-003	123.5219

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	1.31e+006	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.9066	69.9066	1.3400e-003	1.2800e-003	70.3320
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	558750	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.8170	29.8170	5.7000e-004	5.5000e-004	29.9985
Apartments Low Rise	431962	2.3300e-003	0.0199	8.4700e-003	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0511	23.0511	4.4000e-004	4.2000e-004	23.1914
Total		**0.0124**	**0.1115**	**0.0854**	**6.8000e-004**		**8.5700e-003**	**8.5700e-003**		**8.5700e-003**	**8.5700e-003**	**0.0000**	**122.7747**	**122.7747**	**2.3500e-003**	**2.2500e-003**	**123.5219**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	558750	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.8170	29.8170	5.7000e-004	5.5000e-004	29.9985
Apartments Low Rise	431962	2.3300e-003	0.0199	8.4700e-003	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0511	23.0511	4.4000e-004	4.2000e-004	23.1914
General Office Building	1.31e+006	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.9066	69.9066	1.3400e-003	1.2800e-003	70.3320
Total		**0.0124**	**0.1115**	**0.0854**	**6.8000e-004**		**8.5700e-003**	**8.5700e-003**		**8.5700e-003**	**8.5700e-003**	**0.0000**	**122.7747**	**122.7747**	**2.3500e-003**	**2.2500e-003**	**123.5219**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	148129	36.6348	1.9500e-003	4.0000e-004	36.8007
General Office Building	1.815e+006	448.8798	0.0239	4.9400e-003	450.9125
Parking Lot	354464	87.6649	4.6600e-003	9.6000e-004	88.0618
Regional Shopping Center	1.4975e+006	370.3568	0.0197	4.0800e-003	372.0338
Total		**943.5363**	**0.0502**	**0.0104**	**947.8089**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	148129	36.6348	1.9500e-003	4.0000e-004	36.8007
General Office Building	1.815e+006	448.8798	0.0239	4.9400e-003	450.9125
Parking Lot	354464	87.6649	4.6600e-003	9.6000e-004	88.0618
Regional Shopping Center	1.4975e+006	370.3568	0.0197	4.0800e-003	372.0338
Total		**943.5363**	**0.0502**	**0.0104**	**947.8089**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9272	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207
Unmitigated	2.9272	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2072					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7057					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0142	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207
Total	**2.9272**	**4.9500e-003**	**0.4308**	**2.0000e-005**		**2.3300e-003**	**2.3300e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**0.7050**	**0.7050**	**7.5000e-004**	**0.0000**	**0.7207**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2072					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7057					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0142	4.9500e-003	0.4308	2.0000e-005		2.3300e-003	2.3300e-003		2.3300e-003	2.3300e-003	0.0000	0.7050	0.7050	7.5000e-004	0.0000	0.7207
Total	**2.9272**	**4.9500e-003**	**0.4308**	**2.0000e-005**		**2.3300e-003**	**2.3300e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**0.7050**	**0.7050**	**7.5000e-004**	**0.0000**	**0.7207**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	72.1779	0.0449	0.0269	81.4643
Unmitigated	72.1779	0.0447	0.0269	81.4508

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.60616 / 1.64301	5.5558	3.4200e-003	2.0600e-003	6.2650
General Office Building	22.2167 / 13.6167	47.0243	0.0291	0.0175	53.0688
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	9.25907 / 5.67491	19.5979	0.0121	7.3000e-003	22.1170
Total		**72.1779**	**0.0447**	**0.0269**	**81.4508**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.60616 / 1.64301	5.5558	3.4300e-003	2.0600e-003	6.2661
General Office Building	22.2167 / 13.6167	47.0243	0.0292	0.0176	53.0775
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	9.25907 / 5.67491	19.5979	0.0122	7.3100e-003	22.1207

Total		**72.1779**	**0.0449**	**0.0269**	**81.4643**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.4938	0.7975	0.0000	30.2405
Unmitigated	53.9753	3.1899	0.0000	120.9621

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	18.4	3.7350	0.2207	0.0000	8.3705
General Office Building	116.25	23.5977	1.3946	0.0000	52.8840
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	131.25	26.6426	1.5745	0.0000	59.7077
Total		**53.9753**	**3.1898**	**0.0000**	**120.9621**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	4.6	0.9338	0.0552	0.0000	2.0926
General Office Building	29.0625	5.8994	0.3487	0.0000	13.2210
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	32.8125	6.6606	0.3936	0.0000	14.9269
Total		**13.4938**	**0.7975**	**0.0000**	**30.2405**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Version: CalEEMod.2013.2.2

Date: 5/19/2016 4:13 PM

Raleys Project Alt 2 - Construction and Operations

Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Utilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	5	No Change	0.00
Forklifts	Diesel	No Change	0	4	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00

Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000
Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	1.27590E-001	1.52051E+000	5.54810E-001	1.21000E-003	6.66500E-002	6.13200E-002	0.00000E+000	1.11523E+002	1.11523E+002	3.45000E-002	0.00000E+000	1.12247E+002
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41922E+001	4.41922E+001	1.35400E-002	0.00000E+000	4.44766E+001
Forklifts	1.88070E-001	1.64766E+000	1.20773E+000	1.50000E-003	1.33380E-001	1.22710E-001	0.00000E+000	1.38297E+002	1.38297E+002	4.27900E-002	0.00000E+000	1.39195E+002
Generator Sets	1.30670E-001	1.04667E+000	9.25390E-001	1.62000E-003	6.82100E-002	6.82100E-002	0.00000E+000	1.39200E+002	1.39200E+002	1.05200E-002	0.00000E+000	1.39421E+002
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67633E+000	8.67633E+000	2.66000E-003	0.00000E+000	8.73216E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25421E+000	8.25421E+000	2.57000E-003	0.00000E+000	8.30817E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32630E+000	7.32630E+000	2.28000E-003	0.00000E+000	7.37419E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78824E+000	4.78824E+000	1.49000E-003	0.00000E+000	4.81954E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81601E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14589E+001	4.14589E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	2.61730E-001	2.55307E+000	2.14898E+000	2.83000E-003	1.85980E-001	1.71100E-001	0.00000E+000	2.60196E+002	2.60196E+002	8.04600E-002	0.00000E+000	2.61885E+002
Welders	1.14460E-001	4.19870E-001	4.62980E-001	6.30000E-004	2.93300E-002	2.93300E-002	0.00000E+000	4.63552E+001	4.63552E+001	9.34000E-003	0.00000E+000	4.65513E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000
Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001

Cranes	1.27590E-001	1.52050E+000	5.54810E-001	1.21000E-003	6.66500E-002	6.13200E-002	0.00000E+000	1.11523E+002	1.11523E+002	3.45000E-002	0.00000E+000	1.12247E+002
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41921E+001	4.41921E+001	1.35400E-002	0.00000E+000	4.44765E+001
Forklifts	1.88070E-001	1.64766E+000	1.20773E+000	1.50000E-003	1.33380E-001	1.22710E-001	0.00000E+000	1.38296E+002	1.38296E+002	4.27900E-002	0.00000E+000	1.39195E+002
Generator Sets	1.30670E-001	1.04667E+000	9.25390E-001	1.62000E-003	6.82100E-002	6.82100E-002	0.00000E+000	1.39200E+002	1.39200E+002	1.05200E-002	0.00000E+000	1.39421E+002
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67632E+000	8.67632E+000	2.66000E-003	0.00000E+000	8.73215E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25420E+000	8.25420E+000	2.57000E-003	0.00000E+000	8.30816E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32629E+000	7.32629E+000	2.28000E-003	0.00000E+000	7.37418E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78823E+000	4.78823E+000	1.49000E-003	0.00000E+000	4.81953E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81600E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14588E+001	4.14588E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	2.61720E-001	2.55307E+000	2.14898E+000	2.83000E-003	1.85980E-001	1.71100E-001	0.00000E+000	2.60195E+002	2.60195E+002	8.04600E-002	0.00000E+000	2.61885E+002
Welders	1.14460E-001	4.19870E-001	4.62980E-001	6.30000E-004	2.93300E-002	2.93300E-002	0.00000E+000	4.63552E+001	4.63552E+001	9.34000E-003	0.00000E+000	4.65512E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	9.28247E-007
Cranes	0.00000E+000	6.57674E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16568E-006	1.16568E-006	0.00000E+000	0.00000E+000	1.15816E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.35771E-006	1.35771E-006	0.00000E+000	0.00000E+000	1.34903E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15693E-006	1.15693E-006	0.00000E+000	0.00000E+000	1.14947E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22126E-006	1.22126E-006	0.00000E+000	0.00000E+000	1.14760E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15256E-006	1.15256E-006	0.00000E+000	0.00000E+000	1.14519E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21150E-006	1.21150E-006	0.00000E+000	0.00000E+000	1.20363E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36495E-006	1.36495E-006	0.00000E+000	0.00000E+000	1.35608E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.08845E-006	2.08845E-006	0.00000E+000	0.00000E+000	2.07489E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21132E-006	1.21132E-006	0.00000E+000	0.00000E+000	1.20358E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20601E-006	1.20601E-006	0.00000E+000	0.00000E+000	1.19830E-006
Tractors/Loaders/Backhoes	3.82073E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19141E-006	1.19141E-006	0.00000E+000	0.00000E+000	1.18373E-006

Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.07863E-006	1.07863E-006	0.00000E+000	0.00000E+000	1.07409E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.25	0.07	0.25	0.07	0.00	0.00
Demolition	Fugitive Dust	0.04	0.01	0.02	0.00	0.55	0.55
Demolition	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading/Utilities	Fugitive Dust	0.13	0.05	0.06	0.02	0.55	0.55
Grading/Utilities	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.36	-0.15	-0.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.15	0.40		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			

	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	

No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	

No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	

CalEEMod Outputs
Alternative 3 - Summer, Winter, Annual, and Mitigation

Raleys Project Alt 3 - Construction and Operations

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	395.00	Space	4.00	158,000.00	0
Regional Shopping Center	43.00	1000sqft	1.00	43,000.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,464.00	64,491.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	304,392.00	147,000.00
tblAreaCoating	Area_Nonresidential_Interior	304392	147000
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.55	4.00
tblLandUse	LotAcreage	0.99	1.00
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.82
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.82
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.82
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	18.2032	3.4679	20.9584	9.9670	3.1903	12.5018	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	73.9080	28.5480	30.5519	0.0536	1.4057	1.6712	3.0769	0.3795	1.5645	1.9440	0.0000	4,936.7507	4,936.7507	0.7487	0.0000	4,952.4723
Total	**81.0410**	**108.0797**	**91.3424**	**0.1503**	**19.6089**	**5.1391**	**24.0352**	**10.3465**	**4.7549**	**14.4458**	**0.0000**	**14,671.3695**	**14,671.3695**	**2.7119**	**0.0000**	**14,728.3187**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	8.2667	3.4679	11.0219	4.5051	3.1903	7.0399	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	73.9080	28.5480	30.5519	0.0536	1.4057	1.6712	3.0769	0.3795	1.5645	1.9440	0.0000	4,936.7507	4,936.7507	0.7487	0.0000	4,952.4723
Total	**81.0410**	**108.0797**	**91.3424**	**0.1503**	**9.6724**	**5.1391**	**14.0988**	**4.8846**	**4.7549**	**8.9839**	**0.0000**	**14,671.3694**	**14,671.3694**	**2.7119**	**0.0000**	**14,728.3187**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.67**	**0.00**	**41.34**	**52.79**	**0.00**	**37.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Energy	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
Mobile	18.5305	26.7402	145.4665	0.3318	21.8139	0.3908	22.2047	5.8273	0.3604	6.1877		26,073.4423	26,073.4423	0.9809		26,094.0421
Total	**26.6725**	**27.1178**	**145.8344**	**0.3341**	**21.8139**	**0.4197**	**22.2336**	**5.8273**	**0.3892**	**6.2166**		**26,526.0439**	**26,526.0439**	**0.9899**	**8.3000e-003**	**26,549.4036**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Energy	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
Mobile	18.5305	26.7402	145.4665	0.3318	21.8139	0.3908	22.2047	5.8273	0.3604	6.1877		26,073.4423	26,073.4423	0.9809		26,094.0421
Total	**26.6725**	**27.1178**	**145.8344**	**0.3341**	**21.8139**	**0.4197**	**22.2336**	**5.8273**	**0.3892**	**6.2166**		**26,526.0439**	**26,526.0439**	**0.9899**	**8.3000e-003**	**26,549.4036**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 147,000; Non-Residential Outdoor: 64,491 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.30	226	0.29
Building Construction	Forklifts	4	7.20	89	0.20
Building Construction	Generator Sets	1	7.20	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	6.30	97	0.37
Building Construction	Welders	1	7.20	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2315	27.8059	19.3256	0.0280		1.9190	1.9190		1.7963	1.7963		2,767.0877	2,767.0877	0.7046		2,781.8846
Total	**3.2315**	**27.8059**	**19.3256**	**0.0280**		**1.9190**	**1.9190**		**1.7963**	**1.7963**		**2,767.0877**	**2,767.0877**	**0.7046**		**2,781.8846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6043	4.1256	7.3192	0.0121	0.3408	0.0644	0.4051	0.0970	0.0591	0.1561		1,190.5652	1,190.5652	8.8800e-003		1,190.7516
Worker	0.5003	0.4512	6.0481	0.0136	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		1,075.0588	1,075.0588	0.0493		1,076.0946
Total	**1.1045**	**4.5768**	**13.3673**	**0.0257**	**1.4058**	**0.0719**	**1.4777**	**0.3795**	**0.0661**	**0.4456**		**2,265.6239**	**2,265.6239**	**0.0582**		**2,266.8462**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2315	27.8059	19.3256	0.0280		1.9190	1.9190		1.7963	1.7963	0.0000	2,767.0877	2,767.0877	0.7046		2,781.8846
Total	**3.2315**	**27.8059**	**19.3256**	**0.0280**		**1.9190**	**1.9190**		**1.7963**	**1.7963**	**0.0000**	**2,767.0877**	**2,767.0877**	**0.7046**		**2,781.8846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.6043	4.1256	7.3192	0.0121	0.3408	0.0644	0.4051	0.0970	0.0591	0.1561		1,190.5652	1,190.5652	8.8800e-003		1,190.7516
Worker	0.5003	0.4512	6.0481	0.0136	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		1,075.0588	1,075.0588	0.0493		1,076.0946
Total	**1.1045**	**4.5768**	**13.3673**	**0.0257**	**1.4058**	**0.0719**	**1.4777**	**0.3795**	**0.0661**	**0.4456**		**2,265.6239**	**2,265.6239**	**0.0582**		**2,266.8462**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7717	24.4227	18.7097	0.0279		1.6047	1.6047		1.5033	1.5033		2,733.6649	2,733.6649	0.6946		2,748.2516
Total	**2.7717**	**24.4227**	**18.7097**	**0.0279**		**1.6047**	**1.6047**		**1.5033**	**1.5033**		**2,733.6649**	**2,733.6649**	**0.6946**		**2,748.2516**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5022	3.7188	6.3870	0.0121	0.3407	0.0591	0.3998	0.0970	0.0544	0.1514		1,168.5910	1,168.5910	8.6600e-003		1,168.7728
Worker	0.4488	0.4065	5.4552	0.0136	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		1,034.4948	1,034.4948	0.0454		1,035.4480
Total	**0.9510**	**4.1253**	**11.8422**	**0.0257**	**1.4057**	**0.0666**	**1.4722**	**0.3795**	**0.0612**	**0.4407**		**2,203.0858**	**2,203.0858**	**0.0541**		**2,204.2207**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7717	24.4227	18.7097	0.0279		1.6047	1.6047		1.5033	1.5033	0.0000	2,733.6649	2,733.6649	0.6946		2,748.2516
Total	**2.7717**	**24.4227**	**18.7097**	**0.0279**		**1.6047**	**1.6047**		**1.5033**	**1.5033**	**0.0000**	**2,733.6649**	**2,733.6649**	**0.6946**		**2,748.2516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5022	3.7188	6.3870	0.0121	0.3407	0.0591	0.3998	0.0970	0.0544	0.1514		1,168.5910	1,168.5910	8.6600e-003		1,168.7728
Worker	0.4488	0.4065	5.4552	0.0136	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		1,034.4948	1,034.4948	0.0454		1,035.4480
Total	**0.9510**	**4.1253**	**11.8422**	**0.0257**	**1.4057**	**0.0666**	**1.4722**	**0.3795**	**0.0612**	**0.4407**		**2,203.0858**	**2,203.0858**	**0.0541**		**2,204.2207**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**73.8182**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0813	1.0911	2.7200e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		206.8990	206.8990	9.0800e-003		207.0896
Total	**0.0898**	**0.0813**	**1.0911**	**2.7200e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**206.8990**	**206.8990**	**9.0800e-003**		**207.0896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**73.8182**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0813	1.0911	2.7200e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		206.8990	206.8990	9.0800e-003		207.0896
Total	**0.0898**	**0.0813**	**1.0911**	**2.7200e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**206.8990**	**206.8990**	**9.0800e-003**		**207.0896**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.5305	26.7402	145.4665	0.3318	21.8139	0.3908	22.2047	5.8273	0.3604	6.1877		26,073.4423	26,073.4423	0.9809		26,094.0421
Unmitigated	18.5305	26.7402	145.4665	0.3318	21.8139	0.3908	22.2047	5.8273	0.3604	6.1877		26,073.4423	26,073.4423	0.9809		26,094.0421

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,282.26	1,282.26	1282.26	2,105,009	2,105,009
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,275.16	6,275.16	6,275.16	10,301,554	10,301,554

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
NaturalGas Unmitigated	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	526.603	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003		61.9533	61.9533	1.1900e-003	1.1400e-003	62.3303
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0415**	**0.3771**	**0.3168**	**2.2600e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**452.4932**	**452.4932**	**8.6800e-003**	**8.3000e-003**	**455.2470**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.526603	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003		61.9533	61.9533	1.1900e-003	1.1400e-003	62.3303
Supermarket	3.31959	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0415**	**0.3771**	**0.3168**	**2.2600e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**452.4932**	**452.4932**	**8.6800e-003**	**8.3000e-003**	**455.2470**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Unmitigated	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.4733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Total	**8.1005**	**4.7000e-004**	**0.0511**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1084**	**0.1084**	**2.9000e-004**		**0.1146**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Total	**8.1005**	**4.7000e-004**	**0.0511**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1084**	**0.1084**	**2.9000e-004**		**0.1146**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 3 - Construction and Operations

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	395.00	Space	4.00	158,000.00	0
Regional Shopping Center	43.00	1000sqft	1.00	43,000.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,464.00	64,491.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	304,392.00	147,000.00
tblAreaCoating	Area_Nonresidential_Interior	304392	147000
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.55	4.00
tblLandUse	LotAcreage	0.99	1.00
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.82
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.82
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.82
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	18.2032	3.4684	20.9584	9.9670	3.1908	12.5018	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	73.8950	28.9076	33.7453	0.0519	1.4057	1.6721	3.0777	0.3795	1.5653	1.9448	0.0000	4,800.0347	4,800.0347	0.7489	0.0000	4,815.7624
Total	**81.2361**	**109.3407**	**98.8352**	**0.1483**	**19.6089**	**5.1404**	**24.0361**	**10.3465**	**4.7561**	**14.4466**	**0.0000**	**14,507.9278**	**14,507.9278**	**2.7125**	**0.0000**	**14,564.8903**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	8.2667	3.4684	11.0219	4.5051	3.1908	7.0399	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	73.8950	28.9076	33.7453	0.0519	1.4057	1.6721	3.0777	0.3795	1.5653	1.9448	0.0000	4,800.0347	4,800.0347	0.7489	0.0000	4,815.7624
Total	**81.2361**	**109.3407**	**98.8352**	**0.1483**	**9.6724**	**5.1404**	**14.0997**	**4.8846**	**4.7561**	**8.9847**	**0.0000**	**14,507.9278**	**14,507.9278**	**2.7125**	**0.0000**	**14,564.8903**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.67**	**0.00**	**41.34**	**52.79**	**0.00**	**37.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Energy	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
Mobile	17.0709	30.2989	163.8732	0.2998	21.8139	0.3943	22.2082	5.8273	0.3636	6.1909		23,655.3933	23,655.3933	0.9822		23,676.0190
Total	**25.2129**	**30.6765**	**164.2410**	**0.3021**	**21.8139**	**0.4231**	**22.2370**	**5.8273**	**0.3924**	**6.2197**		**24,107.9949**	**24,107.9949**	**0.9911**	**8.3000e-003**	**24,131.3806**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Energy	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
Mobile	17.0709	30.2989	163.8732	0.2998	21.8139	0.3943	22.2082	5.8273	0.3636	6.1909		23,655.3933	23,655.3933	0.9822		23,676.0190
Total	**25.2129**	**30.6765**	**164.2410**	**0.3021**	**21.8139**	**0.4231**	**22.2370**	**5.8273**	**0.3924**	**6.2197**		**24,107.9949**	**24,107.9949**	**0.9911**	**8.3000e-003**	**24,131.3806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 147,000; Non-Residential Outdoor: 64,491 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.30	226	0.29
Building Construction	Forklifts	4	7.20	89	0.20
Building Construction	Generator Sets	1	7.20	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	6.30	97	0.37
Building Construction	Welders	1	7.20	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2315	27.8059	19.3256	0.0280		1.9190	1.9190		1.7963	1.7963		2,767.0877	2,767.0877	0.7046		2,781.8846
Total	**3.2315**	**27.8059**	**19.3256**	**0.0280**		**1.9190**	**1.9190**		**1.7963**	**1.7963**		**2,767.0877**	**2,767.0877**	**0.7046**		**2,781.8846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7880	4.4199	11.0624	0.0121	0.3408	0.0653	0.4061	0.0970	0.0600	0.1570		1,180.1512	1,180.1512	9.1700e-003		1,180.3437
Worker	0.4322	0.5592	5.4172	0.0119	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		943.7372	943.7372	0.0493		944.7730
Total	**1.2202**	**4.9791**	**16.4796**	**0.0240**	**1.4058**	**0.0729**	**1.4786**	**0.3795**	**0.0670**	**0.4465**		**2,123.8884**	**2,123.8884**	**0.0585**		**2,125.1166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2315	27.8059	19.3256	0.0280		1.9190	1.9190		1.7963	1.7963	0.0000	2,767.0877	2,767.0877	0.7046		2,781.8846
Total	**3.2315**	**27.8059**	**19.3256**	**0.0280**		**1.9190**	**1.9190**		**1.7963**	**1.7963**	**0.0000**	**2,767.0877**	**2,767.0877**	**0.7046**		**2,781.8846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.7880	4.4199	11.0624	0.0121	0.3408	0.0653	0.4061	0.0970	0.0600	0.1570		1,180.1512	1,180.1512	9.1700e-003		1,180.3437
Worker	0.4322	0.5592	5.4172	0.0119	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		943.7372	943.7372	0.0493		944.7730
Total	**1.2202**	**4.9791**	**16.4796**	**0.0240**	**1.4058**	**0.0729**	**1.4786**	**0.3795**	**0.0670**	**0.4465**		**2,123.8884**	**2,123.8884**	**0.0585**		**2,125.1166**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7717	24.4227	18.7097	0.0279		1.6047	1.6047		1.5033	1.5033		2,733.6649	2,733.6649	0.6946		2,748.2516
Total	**2.7717**	**24.4227**	**18.7097**	**0.0279**		**1.6047**	**1.6047**		**1.5033**	**1.5033**		**2,733.6649**	**2,733.6649**	**0.6946**		**2,748.2516**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6420	3.9816	10.1889	0.0120	0.3407	0.0600	0.4007	0.0970	0.0551	0.1521		1,158.3280	1,158.3280	8.9500e-003		1,158.5159
Worker	0.3840	0.5033	4.8467	0.0119	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		908.0417	908.0417	0.0454		908.9949
Total	**1.0259**	**4.4849**	**15.0356**	**0.0240**	**1.4057**	**0.0674**	**1.4731**	**0.3795**	**0.0620**	**0.4415**		**2,066.3697**	**2,066.3697**	**0.0543**		**2,067.5108**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7717	24.4227	18.7097	0.0279		1.6047	1.6047		1.5033	1.5033	0.0000	2,733.6649	2,733.6649	0.6946		2,748.2516
Total	**2.7717**	**24.4227**	**18.7097**	**0.0279**		**1.6047**	**1.6047**		**1.5033**	**1.5033**	**0.0000**	**2,733.6649**	**2,733.6649**	**0.6946**		**2,748.2516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6420	3.9816	10.1889	0.0120	0.3407	0.0600	0.4007	0.0970	0.0551	0.1521		1,158.3280	1,158.3280	8.9500e-003		1,158.5159
Worker	0.3840	0.5033	4.8467	0.0119	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		908.0417	908.0417	0.0454		908.9949
Total	**1.0259**	**4.4849**	**15.0356**	**0.0240**	**1.4057**	**0.0674**	**1.4731**	**0.3795**	**0.0620**	**0.4415**		**2,066.3697**	**2,066.3697**	**0.0543**		**2,067.5108**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**73.8182**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0768	0.1007	0.9694	2.3900e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		181.6083	181.6083	9.0800e-003		181.7990
Total	**0.0768**	**0.1007**	**0.9694**	**2.3900e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**181.6083**	**181.6083**	**9.0800e-003**		**181.7990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	73.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**73.8182**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0768	0.1007	0.9694	2.3900e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		181.6083	181.6083	9.0800e-003		181.7990
Total	**0.0768**	**0.1007**	**0.9694**	**2.3900e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**181.6083**	**181.6083**	**9.0800e-003**		**181.7990**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.0709	30.2989	163.8732	0.2998	21.8139	0.3943	22.2082	5.8273	0.3636	6.1909		23,655.3933	23,655.3933	0.9822		23,676.0190
Unmitigated	17.0709	30.2989	163.8732	0.2998	21.8139	0.3943	22.2082	5.8273	0.3636	6.1909		23,655.3933	23,655.3933	0.9822		23,676.0190

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,282.26	1,282.26	1282.26	2,105,009	2,105,009
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,275.16	6,275.16	6,275.16	10,301,554	10,301,554

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470
NaturalGas Unmitigated	0.0415	0.3771	0.3168	2.2600e-003		0.0287	0.0287		0.0287	0.0287		452.4932	452.4932	8.6700e-003	8.3000e-003	455.2470

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	526.603	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003		61.9533	61.9533	1.1900e-003	1.1400e-003	62.3303
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0415**	**0.3771**	**0.3168**	**2.2600e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**452.4932**	**452.4932**	**8.6800e-003**	**8.3000e-003**	**455.2470**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.526603	5.6800e-003	0.0516	0.0434	3.1000e-004		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003		61.9533	61.9533	1.1900e-003	1.1400e-003	62.3303
Supermarket	3.31959	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0415**	**0.3771**	**0.3168**	**2.2600e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**452.4932**	**452.4932**	**8.6800e-003**	**8.3000e-003**	**455.2470**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Unmitigated	8.1005	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.4733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Total	**8.1005**	**4.7000e-004**	**0.0511**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1084**	**0.1084**	**2.9000e-004**		**0.1146**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8400e-003	4.7000e-004	0.0511	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1084	0.1084	2.9000e-004		0.1146
Total	**8.1005**	**4.7000e-004**	**0.0511**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1084**	**0.1084**	**2.9000e-004**		**0.1146**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 3 - Construction and Operations

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	395.00	Space	4.00	158,000.00	0
Regional Shopping Center	43.00	1000sqft	1.00	43,000.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,464.00	64,491.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	304,392.00	147,000.00
tblAreaCoating	Area_Nonresidential_Interior	304392	147000
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.55	4.00
tblLandUse	LotAcreage	0.99	1.00
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	8.00	7.20
tblOffRoadEquipment	UsageHours	7.00	6.30
tblOffRoadEquipment	UsageHours	8.00	7.20
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	5.00	4.51

tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.82
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.82
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.82
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3736	3.5337	3.0801	4.4900e-003	0.3307	0.1806	0.5113	0.1285	0.1677	0.2963	0.0000	398.5358	398.5358	0.0775	0.0000	400.1631
2018	0.9724	1.8196	1.9462	3.2400e-003	0.0799	0.1054	0.1853	0.0216	0.0986	0.1202	0.0000	273.2326	273.2326	0.0451	0.0000	274.1795
Total	**1.3460**	**5.3533**	**5.0263**	**7.7300e-003**	**0.4107**	**0.2860**	**0.6966**	**0.1502**	**0.2663**	**0.4165**	**0.0000**	**671.7684**	**671.7684**	**0.1226**	**0.0000**	**674.3425**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3736	3.5337	3.0801	4.4900e-003	0.1866	0.1806	0.3671	0.0681	0.1677	0.2358	0.0000	398.5355	398.5355	0.0775	0.0000	400.1628
2018	0.9724	1.8196	1.9462	3.2400e-003	0.0799	0.1054	0.1853	0.0216	0.0986	0.1202	0.0000	273.2324	273.2324	0.0451	0.0000	274.1793
Total	**1.3460**	**5.3533**	**5.0263**	**7.7300e-003**	**0.2665**	**0.2860**	**0.5524**	**0.0897**	**0.2663**	**0.3560**	**0.0000**	**671.7679**	**671.7679**	**0.1226**	**0.0000**	**674.3420**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.11**	**0.00**	**20.70**	**40.27**	**0.00**	**14.52**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4781	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130
Energy	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	793.8600	793.8600	0.0397	9.2800e-003	797.5715
Mobile	2.9492	5.2225	26.1849	0.0557	3.8349	0.0713	3.9062	1.0274	0.0658	1.0931	0.0000	3,988.0444	3,988.0444	0.1619	0.0000	3,991.4433
Waste						0.0000	0.0000		0.0000	0.0000	72.1328	0.0000	72.1328	4.2629	0.0000	161.6543
Water						0.0000	0.0000		0.0000	0.0000	3.5256	14.1508	17.6764	0.0129	7.8200e-003	20.3721
Total	**4.4349**	**5.2913**	**26.2491**	**0.0561**	**3.8349**	**0.0766**	**3.9114**	**1.0274**	**0.0710**	**1.0984**	**75.6584**	**4,796.0675**	**4,871.7259**	**4.4774**	**0.0171**	**4,971.0542**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4781	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130
Energy	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	793.8600	793.8600	0.0397	9.2800e-003	797.5715
Mobile	2.9492	5.2225	26.1849	0.0557	3.8349	0.0713	3.9062	1.0274	0.0658	1.0931	0.0000	3,988.0444	3,988.0444	0.1619	0.0000	3,991.4433
Waste						0.0000	0.0000		0.0000	0.0000	18.0332	0.0000	18.0332	1.0657	0.0000	40.4136
Water						0.0000	0.0000		0.0000	0.0000	3.5256	14.1508	17.6764	0.0129	7.8300e-003	20.3760
Total	**4.4349**	**5.2913**	**26.2491**	**0.0561**	**3.8349**	**0.0766**	**3.9114**	**1.0274**	**0.0710**	**1.0984**	**21.5588**	**4,796.0675**	**4,817.6263**	**1.2802**	**0.0171**	**4,849.8174**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**71.51**	**0.00**	**1.11**	**71.41**	**-0.06**	**2.44**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 147,000; Non-Residential Outdoor: 64,491 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.30	226	0.29
Building Construction	Forklifts	4	7.20	89	0.20

Building Construction	Generator Sets	1	7.20	84	0.74
Building Construction	Tractors/Loaders/Backhoes	4	6.30	97	0.37
Building Construction	Welders	1	7.20	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0406	0.0000	0.0406	6.1400e-003	0.0000	6.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2364	73.2364	0.0201	0.0000	73.6583

Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0406**	**0.0425**	**0.0831**	**6.1400e-003**	**0.0396**	**0.0457**	**0.0000**	**73.2364**	**73.2364**	**0.0201**	**0.0000**	**73.6583**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	2.7700e-003	0.0000	2.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2363	73.2363	0.0201	0.0000	73.6583
Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0183**	**0.0425**	**0.0608**	**2.7700e-003**	**0.0396**	**0.0424**	**0.0000**	**73.2363**	**73.2363**	**0.0201**	**0.0000**	**73.6583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0903**	**0.0138**	**0.1041**	**0.0497**	**0.0127**	**0.0623**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0407**	**0.0138**	**0.0544**	**0.0223**	**0.0127**	**0.0350**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.1312**	**0.0498**	**0.1810**	**0.0541**	**0.0458**	**0.0999**	**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0591	0.0000	0.0591	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.0591**	**0.0498**	**0.1088**	**0.0244**	**0.0458**	**0.0701**	**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1163	1.0010	0.6957	1.0100e-003		0.0691	0.0691		0.0647	0.0647	0.0000	90.3694	90.3694	0.0230	0.0000	90.8526
Total	**0.1163**	**1.0010**	**0.6957**	**1.0100e-003**		**0.0691**	**0.0691**		**0.0647**	**0.0647**	**0.0000**	**90.3694**	**90.3694**	**0.0230**	**0.0000**	**90.8526**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0240	0.1565	0.3146	4.3000e-004	0.0119	2.3300e-003	0.0142	3.4100e-003	2.1400e-003	5.5500e-003	0.0000	38.7394	38.7394	2.9000e-004	0.0000	38.7456
Worker	0.0150	0.0180	0.1885	4.4000e-004	0.0370	2.7000e-004	0.0373	9.8400e-003	2.5000e-004	0.0101	0.0000	31.7281	31.7281	1.6100e-003	0.0000	31.7619
Total	**0.0390**	**0.1745**	**0.5031**	**8.7000e-004**	**0.0489**	**2.6000e-003**	**0.0515**	**0.0133**	**2.3900e-003**	**0.0157**	**0.0000**	**70.4675**	**70.4675**	**1.9000e-003**	**0.0000**	**70.5075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1163	1.0010	0.6957	1.0100e-003		0.0691	0.0691		0.0647	0.0647	0.0000	90.3692	90.3692	0.0230	0.0000	90.8525
Total	**0.1163**	**1.0010**	**0.6957**	**1.0100e-003**		**0.0691**	**0.0691**		**0.0647**	**0.0647**	**0.0000**	**90.3692**	**90.3692**	**0.0230**	**0.0000**	**90.8525**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0240	0.1565	0.3146	4.3000e-004	0.0119	2.3300e-003	0.0142	3.4100e-003	2.1400e-003	5.5500e-003	0.0000	38.7394	38.7394	2.9000e-004	0.0000	38.7456
Worker	0.0150	0.0180	0.1885	4.4000e-004	0.0370	2.7000e-004	0.0373	9.8400e-003	2.5000e-004	0.0101	0.0000	31.7281	31.7281	1.6100e-003	0.0000	31.7619
Total	**0.0390**	**0.1745**	**0.5031**	**8.7000e-004**	**0.0489**	**2.6000e-003**	**0.0515**	**0.0133**	**2.3900e-003**	**0.0157**	**0.0000**	**70.4675**	**70.4675**	**1.9000e-003**	**0.0000**	**70.5075**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1566	1.3799	1.0571	1.5800e-003		0.0907	0.0907		0.0849	0.0849	0.0000	140.1166	140.1166	0.0356	0.0000	140.8642
Total	**0.1566**	**1.3799**	**1.0571**	**1.5800e-003**		**0.0907**	**0.0907**		**0.0849**	**0.0849**	**0.0000**	**140.1166**	**140.1166**	**0.0356**	**0.0000**	**140.8642**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0311	0.2212	0.4453	6.8000e-004	0.0187	3.3600e-003	0.0221	5.3400e-003	3.0900e-003	8.4300e-003	0.0000	59.6763	59.6763	4.5000e-004	0.0000	59.6857
Worker	0.0210	0.0254	0.2658	6.9000e-004	0.0581	4.2000e-004	0.0585	0.0155	3.9000e-004	0.0158	0.0000	47.9131	47.9131	2.3300e-003	0.0000	47.9620
Total	**0.0521**	**0.2466**	**0.7112**	**1.3700e-003**	**0.0768**	**3.7800e-003**	**0.0806**	**0.0208**	**3.4800e-003**	**0.0243**	**0.0000**	**107.5894**	**107.5894**	**2.7800e-003**	**0.0000**	**107.6477**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1566	1.3799	1.0571	1.5800e-003		0.0907	0.0907		0.0849	0.0849	0.0000	140.1164	140.1164	0.0356	0.0000	140.8640
Total	**0.1566**	**1.3799**	**1.0571**	**1.5800e-003**		**0.0907**	**0.0907**		**0.0849**	**0.0849**	**0.0000**	**140.1164**	**140.1164**	**0.0356**	**0.0000**	**140.8640**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0311	0.2212	0.4453	6.8000e-004	0.0187	3.3600e-003	0.0221	5.3400e-003	3.0900e-003	8.4300e-003	0.0000	59.6763	59.6763	4.5000e-004	0.0000	59.6857
Worker	0.0210	0.0254	0.2658	6.9000e-004	0.0581	4.2000e-004	0.0585	0.0155	3.9000e-004	0.0158	0.0000	47.9131	47.9131	2.3300e-003	0.0000	47.9620
Total	**0.0521**	**0.2466**	**0.7112**	**1.3700e-003**	**0.0768**	**3.7800e-003**	**0.0806**	**0.0208**	**3.4800e-003**	**0.0243**	**0.0000**	**107.5894**	**107.5894**	**2.7800e-003**	**0.0000**	**107.6477**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019

Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7382**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	9.0000e-004	9.4100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6960	1.6960	8.0000e-005	0.0000	1.6978
Total	**7.4000e-004**	**9.0000e-004**	**9.4100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0700e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6960**	**1.6960**	**8.0000e-005**	**0.0000**	**1.6978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7382**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	9.0000e-004	9.4100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6960	1.6960	8.0000e-005	0.0000	1.6978
Total	**7.4000e-004**	**9.0000e-004**	**9.4100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0700e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6960**	**1.6960**	**8.0000e-005**	**0.0000**	**1.6978**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9492	5.2225	26.1849	0.0557	3.8349	0.0713	3.9062	1.0274	0.0658	1.0931	0.0000	3,988.0444	3,988.0444	0.1619	0.0000	3,991.4433
Unmitigated	2.9492	5.2225	26.1849	0.0557	3.8349	0.0713	3.9062	1.0274	0.0658	1.0931	0.0000	3,988.0444	3,988.0444	0.1619	0.0000	3,991.4433

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,282.26	1,282.26	1282.26	2,105,009	2,105,009
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,275.16	6,275.16	6,275.16	10,301,554	10,301,554

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	718.9447	718.9447	0.0382	7.9100e-003	722.2003
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	718.9447	718.9447	0.0382	7.9100e-003	722.2003
NaturalGas Mitigated	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	74.9153	74.9153	1.4400e-003	1.3700e-003	75.3712
NaturalGas Unmitigated	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	74.9153	74.9153	1.4400e-003	1.3700e-003	75.3712

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	192210	1.0400e-003	9.4200e-003	7.9100e-003	6.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	10.2571	10.2571	2.0000e-004	1.9000e-004	10.3195
Supermarket	1.21165e+006	6.5300e-003	0.0594	0.0499	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	64.6583	64.6583	1.2400e-003	1.1900e-003	65.0518
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.5700e-003**	**0.0688**	**0.0578**	**4.2000e-004**		**5.2300e-003**	**5.2300e-003**		**5.2300e-003**	**5.2300e-003**	**0.0000**	**74.9153**	**74.9153**	**1.4400e-003**	**1.3800e-003**	**75.3712**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	192210	1.0400e-003	9.4200e-003	7.9100e-003	6.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	10.2571	10.2571	2.0000e-004	1.9000e-004	10.3195
Supermarket	1.21165e+006	6.5300e-003	0.0594	0.0499	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	64.6583	64.6583	1.2400e-003	1.1900e-003	65.0518
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.5700e-003**	**0.0688**	**0.0578**	**4.2000e-004**		**5.2300e-003**	**5.2300e-003**		**5.2300e-003**	**5.2300e-003**	**0.0000**	**74.9153**	**74.9153**	**1.4400e-003**	**1.3800e-003**	**75.3712**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	139040	34.3869	1.8300e-003	3.8000e-004	34.5426
Regional Shopping Center	515140	127.4027	6.7800e-003	1.4000e-003	127.9796
Supermarket	2.2528e+006	557.1551	0.0296	6.1300e-003	559.6780
Total		**718.9447**	**0.0382**	**7.9100e-003**	**722.2003**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	139040	34.3869	1.8300e-003	3.8000e-004	34.5426
Regional Shopping Center	515140	127.4027	6.7800e-003	1.4000e-003	127.9796
Supermarket	2.2528e+006	557.1551	0.0296	6.1300e-003	559.6780
Total		**718.9447**	**0.0382**	**7.9100e-003**	**722.2003**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4781	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130
Unmitigated	1.4781	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3911					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130
Total	**1.4781**	**6.0000e-005**	**6.3800e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0123**	**0.0123**	**3.0000e-005**	**0.0000**	**0.0130**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3911					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0123	0.0123	3.0000e-005	0.0000	0.0130
Total	**1.4781**	**6.0000e-005**	**6.3800e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0123**	**0.0123**	**3.0000e-005**	**0.0000**	**0.0130**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.6764	0.0129	7.8300e-003	20.3760
Unmitigated	17.6764	0.0129	7.8200e-003	20.3721

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.18512 / 1.95217	6.7417	4.1800e-003	2.5100e-003	7.6083
Supermarket	6.77975 / 0.209683	10.9347	8.7100e-003	5.3100e-003	12.7639
Total		**17.6764**	**0.0129**	**7.8200e-003**	**20.3721**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.18512 / 1.95217	6.7417	4.1900e-003	2.5200e-003	7.6095
Supermarket	6.77975 / 0.209683	10.9347	8.7400e-003	5.3200e-003	12.7665
Total		**17.6764**	**0.0129**	**7.8400e-003**	**20.3760**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.0332	1.0657	0.0000	40.4136
Unmitigated	72.1328	4.2629	0.0000	161.6543

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	45.15	9.1650	0.5416	0.0000	20.5395
Supermarket	310.2	62.9678	3.7213	0.0000	141.1149
Total		**72.1328**	**4.2629**	**0.0000**	**161.6543**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11.2875	2.2913	0.1354	0.0000	5.1349
Supermarket	77.55	15.7420	0.9303	0.0000	35.2787
Total		**18.0332**	**1.0657**	**0.0000**	**40.4136**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Version: CalEEMod.2013.2.2

Date: 5/20/2016 9:37 AM

Raleys Project Alt 3 - Construction and Operations

Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Utilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	5	No Change	0.00
Forklifts	Diesel	No Change	0	4	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00

Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000
Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.32100E-002	5.15010E-001	1.87920E-001	4.10000E-004	2.25700E-002	2.07700E-002	0.00000E+000	3.77738E+001	3.77738E+001	1.16900E-002	0.00000E+000	3.80193E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41922E+001	4.41922E+001	1.35400E-002	0.00000E+000	4.44766E+001
Forklifts	6.35700E-002	5.56950E-001	4.08250E-001	5.10000E-004	4.50900E-002	4.14800E-002	0.00000E+000	4.67482E+001	4.67482E+001	1.44600E-002	0.00000E+000	4.70519E+001
Generator Sets	4.41700E-002	3.53800E-001	3.12810E-001	5.50000E-004	2.30600E-002	2.30600E-002	0.00000E+000	4.70535E+001	4.70535E+001	3.56000E-003	0.00000E+000	4.71282E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67633E+000	8.67633E+000	2.66000E-003	0.00000E+000	8.73216E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25421E+000	8.25421E+000	2.57000E-003	0.00000E+000	8.30817E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32630E+000	7.32630E+000	2.28000E-003	0.00000E+000	7.37419E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78824E+000	4.78824E+000	1.49000E-003	0.00000E+000	4.81954E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81601E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14589E+001	4.14589E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	9.91200E-002	9.65390E-001	8.07030E-001	1.06000E-003	7.05600E-002	6.49200E-002	0.00000E+000	9.76773E+001	9.76773E+001	3.01800E-002	0.00000E+000	9.83110E+001
Welders	3.86900E-002	1.41930E-001	1.56500E-001	2.10000E-004	9.91000E-003	9.91000E-003	0.00000E+000	1.56694E+001	1.56694E+001	3.16000E-003	0.00000E+000	1.57356E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000

Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.32100E-002	5.15010E-001	1.87920E-001	4.10000E-004	2.25700E-002	2.07700E-002	0.00000E+000	3.77738E+001	3.77738E+001	1.16900E-002	0.00000E+000	3.80192E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41921E+001	4.41921E+001	1.35400E-002	0.00000E+000	4.44765E+001
Forklifts	6.35700E-002	5.56950E-001	4.08250E-001	5.10000E-004	4.50900E-002	4.14800E-002	0.00000E+000	4.67481E+001	4.67481E+001	1.44600E-002	0.00000E+000	4.70518E+001
Generator Sets	4.41700E-002	3.53800E-001	3.12810E-001	5.50000E-004	2.30600E-002	2.30600E-002	0.00000E+000	4.70535E+001	4.70535E+001	3.56000E-003	0.00000E+000	4.71281E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67632E+000	8.67632E+000	2.66000E-003	0.00000E+000	8.73215E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25420E+000	8.25420E+000	2.57000E-003	0.00000E+000	8.30816E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32629E+000	7.32629E+000	2.28000E-003	0.00000E+000	7.37418E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78823E+000	4.78823E+000	1.49000E-003	0.00000E+000	4.81953E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81600E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14588E+001	4.14588E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	9.91200E-002	9.65390E-001	8.07030E-001	1.06000E-003	7.05600E-002	6.49200E-002	0.00000E+000	9.76772E+001	9.76772E+001	3.01800E-002	0.00000E+000	9.83109E+001
Welders	3.86900E-002	1.41930E-001	1.56500E-001	2.10000E-004	9.91000E-003	9.91000E-003	0.00000E+000	1.56694E+001	1.56694E+001	3.16000E-003	0.00000E+000	1.57356E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	9.28247E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.05893E-006	1.05893E-006	0.00000E+000	0.00000E+000	1.31512E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.35771E-006	1.35771E-006	0.00000E+000	0.00000E+000	1.34903E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.28347E-006	1.28347E-006	0.00000E+000	0.00000E+000	1.06266E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.27514E-006	1.27514E-006	0.00000E+000	0.00000E+000	1.06094E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15256E-006	1.15256E-006	0.00000E+000	0.00000E+000	1.14519E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21150E-006	1.21150E-006	0.00000E+000	0.00000E+000	1.20363E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36495E-006	1.36495E-006	0.00000E+000	0.00000E+000	1.35608E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.08845E-006	2.08845E-006	0.00000E+000	0.00000E+000	2.07489E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21132E-006	1.21132E-006	0.00000E+000	0.00000E+000	1.20358E-006

Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20601E-006	1.20601E-006	0.00000E+000	0.00000E+000	1.19830E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22854E-006	1.22854E-006	0.00000E+000	0.00000E+000	1.11890E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.27638E-006	1.27638E-006	0.00000E+000	0.00000E+000	1.27100E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.13	0.03	0.13	0.03	0.00	0.00
Demolition	Fugitive Dust	0.04	0.01	0.02	0.00	0.55	0.55
Demolition	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading/Utilities	Fugitive Dust	0.13	0.05	0.06	0.02	0.55	0.55
Grading/Utilities	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55

Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.31	-0.26	-0.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.11	0.33		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	

CalEEMod Outputs
Alternative 4 - Summer, Winter, Annual, and Mitigation

Raleys Project Alt 4 - Construction and Operations

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	398.00	Space	4.00	159,200.00	0
Regional Shopping Center	43.88	1000sqft	1.50	43,883.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,924.00	65,005.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	305,771.00	148,325.00
tblAreaCoating	Area_Nonresidential_Exterior	101924	65005
tblAreaCoating	Area_Nonresidential_Interior	305771	148325
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.58	4.00
tblLandUse	LotAcreage	1.01	1.50
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019

tblTripsAndVMT	VendorTripNumber	59.00	58.00
tblTripsAndVMT	WorkerTripNumber	141.00	140.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.77
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.77
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.77
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	18.2032	3.4679	20.9584	9.9670	3.1903	12.5018	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	74.5472	28.9141	30.8302	0.0540	1.4057	1.6951	3.1008	0.3795	1.5869	1.9664	0.0000	4,977.5607	4,977.5607	0.7592	0.0000	4,993.5034
Total	**81.6803**	**108.4457**	**91.6207**	**0.1507**	**19.6089**	**5.1630**	**24.0591**	**10.3465**	**4.7772**	**14.4682**	**0.0000**	**14,712.1794**	**14,712.1794**	**2.7224**	**0.0000**	**14,769.3498**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1330	79.5316	60.7905	0.0967	8.2667	3.4679	11.0219	4.5051	3.1903	7.0399	0.0000	9,734.6187	9,734.6187	1.9632	0.0000	9,775.8464
2018	74.5472	28.9141	30.8302	0.0540	1.4057	1.6951	3.1008	0.3795	1.5869	1.9664	0.0000	4,977.5607	4,977.5607	0.7592	0.0000	4,993.5034
Total	**81.6803**	**108.4457**	**91.6207**	**0.1507**	**9.6724**	**5.1630**	**14.1227**	**4.8846**	**4.7772**	**9.0063**	**0.0000**	**14,712.1794**	**14,712.1794**	**2.7224**	**0.0000**	**14,769.3498**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.67**	**0.00**	**41.30**	**52.79**	**0.00**	**37.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Energy	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
Mobile	18.6017	26.8431	146.0261	0.3331	21.8978	0.3923	22.2901	5.8497	0.3618	6.2115		26,173.7318	26,173.7318	0.9847		26,194.4108
Total	**26.7216**	**27.2217**	**146.3952**	**0.3353**	**21.8978**	**0.4213**	**22.3191**	**5.8497**	**0.3907**	**6.2404**		**26,627.6064**	**26,627.6064**	**0.9937**	**8.3200e-003**	**26,651.0531**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Energy	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
Mobile	18.6017	26.8431	146.0261	0.3331	21.8978	0.3923	22.2901	5.8497	0.3618	6.2115		26,173.7318	26,173.7318	0.9847		26,194.4108
Total	**26.7216**	**27.2217**	**146.3952**	**0.3353**	**21.8978**	**0.4213**	**22.3191**	**5.8497**	**0.3907**	**6.2404**		**26,627.6064**	**26,627.6064**	**0.9937**	**8.3200e-003**	**26,651.0531**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 148,325; Non-Residential Outdoor: 65,005 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.40	226	0.29
Building Construction	Forklifts	4	7.30	89	0.20
Building Construction	Generator Sets	1	7.30	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	6.40	97	0.37
Building Construction	Welders	1	7.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1890	1.9391	2.5766	6.4900e-003	0.1560	0.0294	0.1854	0.0427	0.0270	0.0697		641.6515	641.6515	4.2700e-003		641.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0483	0.6480	1.4600e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		115.1849	115.1849	5.2800e-003		115.2959
Total	**0.2426**	**1.9875**	**3.2246**	**7.9500e-003**	**0.2701**	**0.0302**	**0.3003**	**0.0730**	**0.0278**	**0.1007**		**756.8364**	**756.8364**	**9.5500e-003**		**757.0372**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**138.2218**	**138.2218**	**6.3400e-003**		**138.3550**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9624	9.8752	13.1215	0.0330	0.7946	0.1496	0.9442	0.2174	0.1375	0.3549		3,267.6699	3,267.6699	0.0218		3,268.1271
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		153.5798	153.5798	7.0500e-003		153.7278
Total	**1.0339**	**9.9396**	**13.9855**	**0.0350**	**0.9468**	**0.1507**	**1.0975**	**0.2578**	**0.1385**	**0.3963**		**3,421.2497**	**3,421.2497**	**0.0288**		**3,421.8549**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2793	28.2231	19.6133	0.0284		1.9476	1.9476		1.8231	1.8231		2,808.4106	2,808.4106	0.7153		2,823.4316
Total	**3.2793**	**28.2231**	**19.6133**	**0.0284**		**1.9476**	**1.9476**		**1.8231**	**1.8231**		**2,808.4106**	**2,808.4106**	**0.7153**		**2,823.4316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6043	4.1256	7.3192	0.0121	0.3408	0.0644	0.4051	0.0970	0.0591	0.1561		1,190.5652	1,190.5652	8.8800e-003		1,190.7516
Worker	0.5003	0.4512	6.0481	0.0136	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		1,075.0588	1,075.0588	0.0493		1,076.0946
Total	**1.1045**	**4.5768**	**13.3673**	**0.0257**	**1.4058**	**0.0719**	**1.4777**	**0.3795**	**0.0661**	**0.4456**		**2,265.6239**	**2,265.6239**	**0.0582**		**2,266.8462**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2793	28.2231	19.6133	0.0284		1.9476	1.9476		1.8231	1.8231	0.0000	2,808.4106	2,808.4106	0.7153		2,823.4316
Total	**3.2793**	**28.2231**	**19.6133**	**0.0284**		**1.9476**	**1.9476**		**1.8231**	**1.8231**	**0.0000**	**2,808.4106**	**2,808.4106**	**0.7153**		**2,823.4316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.6043	4.1256	7.3192	0.0121	0.3408	0.0644	0.4051	0.0970	0.0591	0.1561		1,190.5652	1,190.5652	8.8800e-003		1,190.7516
Worker	0.5003	0.4512	6.0481	0.0136	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		1,075.0588	1,075.0588	0.0493		1,076.0946
Total	**1.1045**	**4.5768**	**13.3673**	**0.0257**	**1.4058**	**0.0719**	**1.4777**	**0.3795**	**0.0661**	**0.4456**		**2,265.6239**	**2,265.6239**	**0.0582**		**2,266.8462**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8127	24.7888	18.9880	0.0284		1.6286	1.6286		1.5257	1.5257		2,774.4749	2,774.4749	0.7051		2,789.2827
Total	**2.8127**	**24.7888**	**18.9880**	**0.0284**		**1.6286**	**1.6286**		**1.5257**	**1.5257**		**2,774.4749**	**2,774.4749**	**0.7051**		**2,789.2827**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5022	3.7188	6.3870	0.0121	0.3407	0.0591	0.3998	0.0970	0.0544	0.1514		1,168.5910	1,168.5910	8.6600e-003		1,168.7728
Worker	0.4488	0.4065	5.4552	0.0136	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		1,034.4948	1,034.4948	0.0454		1,035.4480
Total	**0.9510**	**4.1253**	**11.8422**	**0.0257**	**1.4057**	**0.0666**	**1.4722**	**0.3795**	**0.0612**	**0.4407**		**2,203.0858**	**2,203.0858**	**0.0541**		**2,204.2207**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8127	24.7888	18.9880	0.0284		1.6286	1.6286		1.5257	1.5257	0.0000	2,774.4749	2,774.4749	0.7051		2,789.2827
Total	**2.8127**	**24.7888**	**18.9880**	**0.0284**		**1.6286**	**1.6286**		**1.5257**	**1.5257**	**0.0000**	**2,774.4749**	**2,774.4749**	**0.7051**		**2,789.2827**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5022	3.7188	6.3870	0.0121	0.3407	0.0591	0.3998	0.0970	0.0544	0.1514		1,168.5910	1,168.5910	8.6600e-003		1,168.7728
Worker	0.4488	0.4065	5.4552	0.0136	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		1,034.4948	1,034.4948	0.0454		1,035.4480
Total	**0.9510**	**4.1253**	**11.8422**	**0.0257**	**1.4057**	**0.0666**	**1.4722**	**0.3795**	**0.0612**	**0.4407**		**2,203.0858**	**2,203.0858**	**0.0541**		**2,204.2207**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		110.8387	110.8387	4.8600e-003		110.9409
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**110.8387**	**110.8387**	**4.8600e-003**		**110.9409**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**74.4575**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0813	1.0911	2.7200e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		206.8990	206.8990	9.0800e-003		207.0896
Total	**0.0898**	**0.0813**	**1.0911**	**2.7200e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**206.8990**	**206.8990**	**9.0800e-003**		**207.0896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**74.4575**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0813	1.0911	2.7200e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		206.8990	206.8990	9.0800e-003		207.0896
Total	**0.0898**	**0.0813**	**1.0911**	**2.7200e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**206.8990**	**206.8990**	**9.0800e-003**		**207.0896**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.6017	26.8431	146.0261	0.3331	21.8978	0.3923	22.2901	5.8497	0.3618	6.2115		26,173.7318	26,173.7318	0.9847		26,194.4108
Unmitigated	18.6017	26.8431	146.0261	0.3331	21.8978	0.3923	22.2901	5.8497	0.3618	6.2115		26,173.7318	26,173.7318	0.9847		26,194.4108

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,306.40	1,306.40	1306.40	2,144,633	2,144,633
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,299.30	6,299.30	6,299.30	10,341,178	10,341,178

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
NaturalGas Unmitigated	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	537.416	5.8000e-003	0.0527	0.0443	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003		63.2255	63.2255	1.2100e-003	1.1600e-003	63.6103
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3781**	**0.3176**	**2.2700e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**453.7654**	**453.7654**	**8.7000e-003**	**8.3200e-003**	**456.5269**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.537416	5.8000e-003	0.0527	0.0443	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003		63.2255	63.2255	1.2100e-003	1.1600e-003	63.6103
Supermarket	3.31959	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3781**	**0.3176**	**2.2700e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**453.7654**	**453.7654**	**8.7000e-003**	**8.3200e-003**	**456.5269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Unmitigated	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.4064					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8800e-003	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Total	**8.0782**	**4.8000e-004**	**0.0515**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1093**	**0.1093**	**3.0000e-004**		**0.1155**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4064					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8800e-003	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Total	**8.0782**	**4.8000e-004**	**0.0515**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1093**	**0.1093**	**3.0000e-004**		**0.1155**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 4 - Construction and Operations

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	398.00	Space	4.00	159,200.00	0
Regional Shopping Center	43.88	1000sqft	1.50	43,883.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,924.00	65,005.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	305,771.00	148,325.00
tblAreaCoating	Area_Nonresidential_Exterior	101924	65005
tblAreaCoating	Area_Nonresidential_Interior	305771	148325
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.58	4.00
tblLandUse	LotAcreage	1.01	1.50
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019

tblTripsAndVMT	VendorTripNumber	59.00	58.00
tblTripsAndVMT	WorkerTripNumber	141.00	140.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.77
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.77
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.77
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	18.2032	3.4684	20.9584	9.9670	3.1908	12.5018	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	74.5343	29.2737	34.0236	0.0523	1.4057	1.6960	3.1016	0.3795	1.5877	1.9672	0.0000	4,840.8446	4,840.8446	0.7595	0.0000	4,856.7935
Total	**81.8754**	**109.7067**	**99.1135**	**0.1488**	**19.6089**	**5.1643**	**24.0600**	**10.3465**	**4.7785**	**14.4690**	**0.0000**	**14,548.7378**	**14,548.7378**	**2.7230**	**0.0000**	**14,605.9215**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.3411	80.4331	65.0899	0.0964	8.2667	3.4684	11.0219	4.5051	3.1908	7.0399	0.0000	9,707.8931	9,707.8931	1.9636	0.0000	9,749.1280
2018	74.5343	29.2737	34.0236	0.0523	1.4057	1.6960	3.1016	0.3795	1.5877	1.9672	0.0000	4,840.8446	4,840.8446	0.7595	0.0000	4,856.7935
Total	**81.8754**	**109.7067**	**99.1135**	**0.1488**	**9.6724**	**5.1643**	**14.1236**	**4.8846**	**4.7785**	**9.0071**	**0.0000**	**14,548.7378**	**14,548.7378**	**2.7230**	**0.0000**	**14,605.9215**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.67**	**0.00**	**41.30**	**52.79**	**0.00**	**37.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Energy	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
Mobile	17.1365	30.4155	164.5035	0.3010	21.8978	0.3958	22.2936	5.8497	0.3650	6.2147		23,746.3819	23,746.3819	0.9860		23,767.0870
Total	**25.2564**	**30.7941**	**164.8726**	**0.3033**	**21.8978**	**0.4247**	**22.3225**	**5.8497**	**0.3939**	**6.2436**		**24,200.2565**	**24,200.2565**	**0.9950**	**8.3200e-003**	**24,223.7293**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Energy	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
Mobile	17.1365	30.4155	164.5035	0.3010	21.8978	0.3958	22.2936	5.8497	0.3650	6.2147		23,746.3819	23,746.3819	0.9860		23,767.0870
Total	**25.2564**	**30.7941**	**164.8726**	**0.3033**	**21.8978**	**0.4247**	**22.3225**	**5.8497**	**0.3939**	**6.2436**		**24,200.2565**	**24,200.2565**	**0.9950**	**8.3200e-003**	**24,223.7293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 148,325; Non-Residential Outdoor: 65,005 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.40	226	0.29
Building Construction	Forklifts	4	7.30	89	0.20
Building Construction	Generator Sets	1	7.30	84	0.74

Building Construction	Tractors/Loaders/Backhoes	4	6.40	97	0.37
Building Construction	Welders	1	7.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0291	0.0000	2.0291	0.3072	0.0000	0.3072			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797		4,036.4674	4,036.4674	1.1073		4,059.7211

Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.0291**	**2.1252**	**4.1543**	**0.3072**	**1.9797**	**2.2870**		**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9131	0.0000	0.9131	0.1383	0.0000	0.1383			0.0000			0.0000
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797	0.0000	4,036.4674	4,036.4674	1.1073		4,059.7211
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**0.9131**	**2.1252**	**3.0383**	**0.1383**	**1.9797**	**2.1180**	**0.0000**	**4,036.4674**	**4,036.4674**	**1.1073**		**4,059.7211**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2318	2.1131	3.4385	6.4900e-003	0.1560	0.0295	0.1855	0.0427	0.0271	0.0698		640.0874	640.0874	4.3400e-003		640.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0463	0.0599	0.5804	1.2800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		101.1147	101.1147	5.2800e-003		101.2257
Total	**0.2781**	**2.1730**	**4.0189**	**7.7700e-003**	**0.2701**	**0.0303**	**0.3004**	**0.0730**	**0.0278**	**0.1008**		**741.2021**	**741.2021**	**9.6200e-003**		**741.4043**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339		4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**		**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339	0.0000	4,003.0859	4,003.0859	1.2265		4,028.8432
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**8.1298**	**2.7542**	**10.8840**	**4.4688**	**2.5339**	**7.0027**	**0.0000**	**4,003.0859**	**4,003.0859**	**1.2265**		**4,028.8432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003		121.4708
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**121.3376**	**121.3376**	**6.3400e-003**		**121.4708**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7492	0.0000	8.7492	3.6080	0.0000	3.6080			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.7492**	**3.3172**	**12.0664**	**3.6080**	**3.0518**	**6.6598**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9371	0.0000	3.9371	1.6236	0.0000	1.6236			0.0000			0.0000

Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.9371**	**3.3172**	**7.2543**	**1.6236**	**3.0518**	**4.6754**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1802	10.7612	17.5110	0.0330	0.7946	0.1501	0.9447	0.2174	0.1380	0.3554		3,259.7045	3,259.7045	0.0221		3,260.1689
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414		134.8196	134.8196	7.0500e-003		134.9676
Total	**1.2420**	**10.8411**	**18.2849**	**0.0347**	**0.9468**	**0.1512**	**1.0980**	**0.2578**	**0.1390**	**0.3967**		**3,394.5241**	**3,394.5241**	**0.0292**		**3,395.1365**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2793	28.2231	19.6133	0.0284		1.9476	1.9476		1.8231	1.8231		2,808.4106	2,808.4106	0.7153		2,823.4316
Total	**3.2793**	**28.2231**	**19.6133**	**0.0284**		**1.9476**	**1.9476**		**1.8231**	**1.8231**		**2,808.4106**	**2,808.4106**	**0.7153**		**2,823.4316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7880	4.4199	11.0624	0.0121	0.3408	0.0653	0.4061	0.0970	0.0600	0.1570		1,180.1512	1,180.1512	9.1700e-003		1,180.3437
Worker	0.4322	0.5592	5.4172	0.0119	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		943.7372	943.7372	0.0493		944.7730
Total	**1.2202**	**4.9791**	**16.4796**	**0.0240**	**1.4058**	**0.0729**	**1.4786**	**0.3795**	**0.0670**	**0.4465**		**2,123.8884**	**2,123.8884**	**0.0585**		**2,125.1166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2793	28.2231	19.6133	0.0284		1.9476	1.9476		1.8231	1.8231	0.0000	2,808.4106	2,808.4106	0.7153		2,823.4316
Total	**3.2793**	**28.2231**	**19.6133**	**0.0284**		**1.9476**	**1.9476**		**1.8231**	**1.8231**	**0.0000**	**2,808.4106**	**2,808.4106**	**0.7153**		**2,823.4316**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.7880	4.4199	11.0624	0.0121	0.3408	0.0653	0.4061	0.0970	0.0600	0.1570		1,180.1512	1,180.1512	9.1700e-003		1,180.3437
Worker	0.4322	0.5592	5.4172	0.0119	1.0650	7.5600e-003	1.0725	0.2825	6.9700e-003	0.2895		943.7372	943.7372	0.0493		944.7730
Total	**1.2202**	**4.9791**	**16.4796**	**0.0240**	**1.4058**	**0.0729**	**1.4786**	**0.3795**	**0.0670**	**0.4465**		**2,123.8884**	**2,123.8884**	**0.0585**		**2,125.1166**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8127	24.7888	18.9880	0.0284		1.6286	1.6286		1.5257	1.5257		2,774.4749	2,774.4749	0.7051		2,789.2827
Total	**2.8127**	**24.7888**	**18.9880**	**0.0284**		**1.6286**	**1.6286**		**1.5257**	**1.5257**		**2,774.4749**	**2,774.4749**	**0.7051**		**2,789.2827**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6420	3.9816	10.1889	0.0120	0.3407	0.0600	0.4007	0.0970	0.0551	0.1521		1,158.3280	1,158.3280	8.9500e-003		1,158.5159
Worker	0.3840	0.5033	4.8467	0.0119	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		908.0417	908.0417	0.0454		908.9949
Total	**1.0259**	**4.4849**	**15.0356**	**0.0240**	**1.4057**	**0.0674**	**1.4731**	**0.3795**	**0.0620**	**0.4415**		**2,066.3697**	**2,066.3697**	**0.0543**		**2,067.5108**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8127	24.7888	18.9880	0.0284		1.6286	1.6286		1.5257	1.5257	0.0000	2,774.4749	2,774.4749	0.7051		2,789.2827
Total	**2.8127**	**24.7888**	**18.9880**	**0.0284**		**1.6286**	**1.6286**		**1.5257**	**1.5257**	**0.0000**	**2,774.4749**	**2,774.4749**	**0.7051**		**2,789.2827**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6420	3.9816	10.1889	0.0120	0.3407	0.0600	0.4007	0.0970	0.0551	0.1521		1,158.3280	1,158.3280	8.9500e-003		1,158.5159
Worker	0.3840	0.5033	4.8467	0.0119	1.0650	7.4100e-003	1.0724	0.2825	6.8600e-003	0.2894		908.0417	908.0417	0.0454		908.9949
Total	**1.0259**	**4.4849**	**15.0356**	**0.0240**	**1.4057**	**0.0674**	**1.4731**	**0.3795**	**0.0620**	**0.4415**		**2,066.3697**	**2,066.3697**	**0.0543**		**2,067.5108**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.8253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4367**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		97.2902	97.2902	4.8600e-003		97.3923
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**97.2902**	**97.2902**	**4.8600e-003**		**97.3923**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**74.4575**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0768	0.1007	0.9694	2.3900e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		181.6083	181.6083	9.0800e-003		181.7990
Total	**0.0768**	**0.1007**	**0.9694**	**2.3900e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**181.6083**	**181.6083**	**9.0800e-003**		**181.7990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**74.4575**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0768	0.1007	0.9694	2.3900e-003	0.2130	1.4800e-003	0.2145	0.0565	1.3700e-003	0.0579		181.6083	181.6083	9.0800e-003		181.7990
Total	**0.0768**	**0.1007**	**0.9694**	**2.3900e-003**	**0.2130**	**1.4800e-003**	**0.2145**	**0.0565**	**1.3700e-003**	**0.0579**		**181.6083**	**181.6083**	**9.0800e-003**		**181.7990**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	17.1365	30.4155	164.5035	0.3010	21.8978	0.3958	22.2936	5.8497	0.3650	6.2147		23,746.3819	23,746.3819	0.9860		23,767.0870
Unmitigated	17.1365	30.4155	164.5035	0.3010	21.8978	0.3958	22.2936	5.8497	0.3650	6.2147		23,746.3819	23,746.3819	0.9860		23,767.0870

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,306.40	1,306.40	1306.40	2,144,633	2,144,633
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,299.30	6,299.30	6,299.30	10,341,178	10,341,178

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269
NaturalGas Unmitigated	0.0416	0.3781	0.3176	2.2700e-003		0.0287	0.0287		0.0287	0.0287		453.7654	453.7654	8.7000e-003	8.3200e-003	456.5269

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	537.416	5.8000e-003	0.0527	0.0443	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003		63.2255	63.2255	1.2100e-003	1.1600e-003	63.6103
Supermarket	3319.59	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3781**	**0.3176**	**2.2700e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**453.7654**	**453.7654**	**8.7000e-003**	**8.3200e-003**	**456.5269**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.537416	5.8000e-003	0.0527	0.0443	3.2000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003		63.2255	63.2255	1.2100e-003	1.1600e-003	63.6103
Supermarket	3.31959	0.0358	0.3255	0.2734	1.9500e-003		0.0247	0.0247		0.0247	0.0247		390.5399	390.5399	7.4900e-003	7.1600e-003	392.9167
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0416**	**0.3781**	**0.3176**	**2.2700e-003**		**0.0287**	**0.0287**		**0.0287**	**0.0287**		**453.7654**	**453.7654**	**8.7000e-003**	**8.3200e-003**	**456.5269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Unmitigated	8.0782	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.4064					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8800e-003	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Total	**8.0782**	**4.8000e-004**	**0.0515**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1093**	**0.1093**	**3.0000e-004**		**0.1155**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4064					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8800e-003	4.8000e-004	0.0515	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1093	0.1093	3.0000e-004		0.1155
Total	**8.0782**	**4.8000e-004**	**0.0515**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1093**	**0.1093**	**3.0000e-004**		**0.1155**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Raleys Project Alt 4 - Construction and Operations

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0
Parking Lot	398.00	Space	4.00	159,200.00	0
Regional Shopping Center	43.88	1000sqft	1.50	43,883.00	0
Supermarket	55.00	1000sqft	2.00	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	545.24	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity adjusted based on SMUD 25% Renewables by Dec 31 2016

Land Use - Land use information provided by applicant for this Alternative

Construction Phase - Modified construction schedule to match the project

Off-road Equipment - Increased equipment list for Building Construction phase based on compressed construction schedule versus CalEEMod default (per SMAQMD CalEEMod User Tips) and hours/day based on SF ratio of Alt:Project

Demolition - Demolition of 49,717 SF structures + 29,371 SF parking lot

Grading - Assumes 11,000 CY would be exported for all Alts

Architectural Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot.

Vehicle Trips - Modified trip rates to match Trip Generation and average daily VMT provided by DKS

Area Coating - Modified Non-res interior and exterior areas based on minimal coatings for Parking Lot

Energy Use - Updated Title 24 electricity and natural gas energy intensity to match 2013 Title 24 standards (25% reduction versus 2008 standards)

Construction Off-road Equipment Mitigation - Fugitive dust reductions = SMAQMD Basic Construction Emission Control Practices

Waste Mitigation - 75% waste diversion consistent with AB 341 (not mitigation)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	101,924.00	65,005.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	305,771.00	148,325.00
tblAreaCoating	Area_Nonresidential_Exterior	101924	65005
tblAreaCoating	Area_Nonresidential_Interior	305771	148325
tblConstructionPhase	NumDays	230.00	185.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	T24E	3.98	2.99
tblEnergyUse	T24E	6.97	5.23
tblEnergyUse	T24NG	4.72	3.54
tblEnergyUse	T24NG	16.86	12.65
tblGrading	MaterialExported	0.00	11,000.00
tblLandUse	LotAcreage	3.58	4.00
tblLandUse	LotAcreage	1.01	1.50
tblLandUse	LotAcreage	1.26	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	8.00	7.30
tblOffRoadEquipment	UsageHours	7.00	6.40
tblOffRoadEquipment	UsageHours	8.00	7.30
tblProjectCharacteristics	CO2IntensityFactor	590.31	545.24
tblProjectCharacteristics	OperationalYear	2014	2019

tblTripsAndVMT	VendorTripNumber	59.00	58.00
tblTripsAndVMT	WorkerTripNumber	141.00	140.00
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CC_TL	5.00	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CNW_TL	6.50	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	CW_TL	10.00	4.51
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	36.00	0.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	PR_TP	34.00	100.00
tblVehicleTrips	ST_TR	49.97	29.77
tblVehicleTrips	ST_TR	177.59	90.78
tblVehicleTrips	SU_TR	25.24	29.77
tblVehicleTrips	SU_TR	166.44	90.78
tblVehicleTrips	WD_TR	42.94	29.77
tblVehicleTrips	WD_TR	102.24	90.78

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3754	3.5487	3.0904	4.5000e-003	0.3307	0.1816	0.5124	0.1285	0.1687	0.2972	0.0000	399.8853	399.8853	0.0778	0.0000	401.5199
2018	0.9811	1.8403	1.9619	3.2700e-003	0.0799	0.1067	0.1867	0.0216	0.0998	0.1215	0.0000	275.3243	275.3243	0.0456	0.0000	276.2826
Total	**1.3565**	**5.3890**	**5.0524**	**7.7700e-003**	**0.4107**	**0.2883**	**0.6990**	**0.1502**	**0.2685**	**0.4187**	**0.0000**	**675.2097**	**675.2097**	**0.1235**	**0.0000**	**677.8025**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3754	3.5487	3.0904	4.5000e-003	0.1866	0.1816	0.3682	0.0681	0.1687	0.2368	0.0000	399.8850	399.8850	0.0778	0.0000	401.5196
2018	0.9811	1.8403	1.9619	3.2700e-003	0.0799	0.1067	0.1867	0.0216	0.0998	0.1215	0.0000	275.3242	275.3242	0.0456	0.0000	276.2824
Total	**1.3565**	**5.3890**	**5.0524**	**7.7700e-003**	**0.2665**	**0.2883**	**0.5548**	**0.0897**	**0.2685**	**0.3582**	**0.0000**	**675.2092**	**675.2092**	**0.1235**	**0.0000**	**677.8020**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.11**	**0.00**	**20.63**	**40.27**	**0.00**	**14.44**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4740	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131
Energy	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003	0.0000	796.9480	796.9480	0.0398	9.3200e-003	800.6738
Mobile	2.9606	5.2425	26.2856	0.0559	3.8496	0.0716	3.9212	1.0313	0.0660	1.0973	0.0000	4,003.3841	4,003.3841	0.1625	0.0000	4,006.7961
Waste						0.0000	0.0000		0.0000	0.0000	72.3196	0.0000	72.3196	4.2740	0.0000	162.0729
Water						0.0000	0.0000		0.0000	0.0000	3.5487	14.2657	17.8144	0.0130	7.8700e-003	20.5278
Total	**4.4422**	**5.3116**	**26.3500**	**0.0563**	**3.8496**	**0.0769**	**3.9265**	**1.0313**	**0.0713**	**1.1026**	**75.8682**	**4,814.6102**	**4,890.4784**	**4.4893**	**0.0172**	**4,990.0837**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4740	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131
Energy	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003	0.0000	796.9480	796.9480	0.0398	9.3200e-003	800.6738
Mobile	2.9606	5.2425	26.2856	0.0559	3.8496	0.0716	3.9212	1.0313	0.0660	1.0973	0.0000	4,003.3841	4,003.3841	0.1625	0.0000	4,006.7961
Waste						0.0000	0.0000		0.0000	0.0000	18.0799	0.0000	18.0799	1.0685	0.0000	40.5182
Water						0.0000	0.0000		0.0000	0.0000	3.5487	14.2657	17.8144	0.0130	7.8800e-003	20.5318
Total	**4.4422**	**5.3116**	**26.3500**	**0.0563**	**3.8496**	**0.0769**	**3.9265**	**1.0313**	**0.0713**	**1.1026**	**21.6286**	**4,814.6102**	**4,836.2388**	**1.2839**	**0.0172**	**4,868.5330**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**71.49**	**0.00**	**1.11**	**71.40**	**-0.06**	**2.44**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	7/26/2017	5	40	
2	Site Preparation	Site Preparation	7/27/2017	8/9/2017	5	10	
3	Grading/Utilities	Grading	8/10/2017	9/20/2017	5	30	
4	Building Construction	Building Construction	9/21/2017	6/6/2018	5	185	
5	Paving	Paving	6/7/2018	7/4/2018	5	20	
6	Architectural Coating	Architectural Coating	7/5/2018	8/1/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 148,325; Non-Residential Outdoor: 65,005 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading/Utilities	Excavators	2	8.00	162	0.38
Grading/Utilities	Graders	1	8.00	174	0.41
Grading/Utilities	Rubber Tired Dozers	1	8.00	255	0.40
Grading/Utilities	Scrapers	2	8.00	361	0.48
Grading/Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	6.40	226	0.29
Building Construction	Forklifts	4	7.30	89	0.20

Building Construction	Generator Sets	1	7.30	84	0.74
Building Construction	Tractors/Loaders/Backhoes	4	6.40	97	0.37
Building Construction	Welders	1	7.30	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	360.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Utilities	8	20.00	0.00	1,375.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	140.00	58.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	28.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0406	0.0000	0.0406	6.1400e-003	0.0000	6.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2364	73.2364	0.0201	0.0000	73.6583
Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0406**	**0.0425**	**0.0831**	**6.1400e-003**	**0.0396**	**0.0457**	**0.0000**	**73.2364**	**73.2364**	**0.0201**	**0.0000**	**73.6583**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	2.7700e-003	0.0000	2.7700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0810	0.8539	0.6779	8.0000e-004		0.0425	0.0425		0.0396	0.0396	0.0000	73.2363	73.2363	0.0201	0.0000	73.6583
Total	**0.0810**	**0.8539**	**0.6779**	**8.0000e-004**	**0.0183**	**0.0425**	**0.0608**	**2.7700e-003**	**0.0396**	**0.0424**	**0.0000**	**73.2363**	**73.2363**	**0.0201**	**0.0000**	**73.6583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0700e-003	0.0413	0.0578	1.3000e-004	3.0300e-003	5.9000e-004	3.6100e-003	8.3000e-004	5.4000e-004	1.3700e-003	0.0000	11.6300	11.6300	8.0000e-005	0.0000	11.6317
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**4.9600e-003**	**0.0424**	**0.0690**	**1.6000e-004**	**5.2300e-003**	**6.1000e-004**	**5.8300e-003**	**1.4200e-003**	**5.5000e-004**	**1.9700e-003**	**0.0000**	**13.5186**	**13.5186**	**1.8000e-004**	**0.0000**	**13.5222**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0903**	**0.0138**	**0.1041**	**0.0497**	**0.0127**	**0.0623**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0242	0.2588	0.1970	2.0000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	18.1577	18.1577	5.5600e-003	0.0000	18.2745
Total	**0.0242**	**0.2588**	**0.1970**	**2.0000e-004**	**0.0407**	**0.0138**	**0.0544**	**0.0223**	**0.0127**	**0.0350**	**0.0000**	**18.1577**	**18.1577**	**5.5600e-003**	**0.0000**	**18.2745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.2000e-004	3.3700e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5666	0.5666	3.0000e-005	0.0000	0.5672
Total	**2.7000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5666**	**0.5666**	**3.0000e-005**	**0.0000**	**0.5672**

3.4 Grading/Utilities - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1312	0.0000	0.1312	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.1312**	**0.0498**	**0.1810**	**0.0541**	**0.0458**	**0.0999**	**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0591	0.0000	0.0591	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.0591**	**0.0498**	**0.1088**	**0.0244**	**0.0458**	**0.0701**	**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0156	0.1578	0.2207	5.0000e-004	0.0116	2.2500e-003	0.0138	3.1700e-003	2.0700e-003	5.2400e-003	0.0000	44.4202	44.4202	3.0000e-004	0.0000	44.4264
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	1.0700e-003	0.0112	3.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8886	1.8886	1.0000e-004	0.0000	1.8906
Total	**0.0164**	**0.1589**	**0.2320**	**5.3000e-004**	**0.0138**	**2.2700e-003**	**0.0160**	**3.7600e-003**	**2.0800e-003**	**5.8400e-003**	**0.0000**	**46.3088**	**46.3088**	**4.0000e-004**	**0.0000**	**46.3170**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1181	1.0160	0.7061	1.0200e-003		0.0701	0.0701		0.0656	0.0656	0.0000	91.7189	91.7189	0.0234	0.0000	92.2095
Total	**0.1181**	**1.0160**	**0.7061**	**1.0200e-003**		**0.0701**	**0.0701**		**0.0656**	**0.0656**	**0.0000**	**91.7189**	**91.7189**	**0.0234**	**0.0000**	**92.2095**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0240	0.1565	0.3146	4.3000e-004	0.0119	2.3300e-003	0.0142	3.4100e-003	2.1400e-003	5.5500e-003	0.0000	38.7394	38.7394	2.9000e-004	0.0000	38.7456
Worker	0.0150	0.0180	0.1885	4.4000e-004	0.0370	2.7000e-004	0.0373	9.8400e-003	2.5000e-004	0.0101	0.0000	31.7281	31.7281	1.6100e-003	0.0000	31.7619
Total	**0.0390**	**0.1745**	**0.5031**	**8.7000e-004**	**0.0489**	**2.6000e-003**	**0.0515**	**0.0133**	**2.3900e-003**	**0.0157**	**0.0000**	**70.4675**	**70.4675**	**1.9000e-003**	**0.0000**	**70.5075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1181	1.0160	0.7061	1.0200e-003		0.0701	0.0701		0.0656	0.0656	0.0000	91.7188	91.7188	0.0234	0.0000	92.2094
Total	**0.1181**	**1.0160**	**0.7061**	**1.0200e-003**		**0.0701**	**0.0701**		**0.0656**	**0.0656**	**0.0000**	**91.7188**	**91.7188**	**0.0234**	**0.0000**	**92.2094**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0240	0.1565	0.3146	4.3000e-004	0.0119	2.3300e-003	0.0142	3.4100e-003	2.1400e-003	5.5500e-003	0.0000	38.7394	38.7394	2.9000e-004	0.0000	38.7456
Worker	0.0150	0.0180	0.1885	4.4000e-004	0.0370	2.7000e-004	0.0373	9.8400e-003	2.5000e-004	0.0101	0.0000	31.7281	31.7281	1.6100e-003	0.0000	31.7619
Total	**0.0390**	**0.1745**	**0.5031**	**8.7000e-004**	**0.0489**	**2.6000e-003**	**0.0515**	**0.0133**	**2.3900e-003**	**0.0157**	**0.0000**	**70.4675**	**70.4675**	**1.9000e-003**	**0.0000**	**70.5075**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1589	1.4006	1.0728	1.6000e-003		0.0920	0.0920		0.0862	0.0862	0.0000	142.2083	142.2083	0.0361	0.0000	142.9673
Total	**0.1589**	**1.4006**	**1.0728**	**1.6000e-003**		**0.0920**	**0.0920**		**0.0862**	**0.0862**	**0.0000**	**142.2083**	**142.2083**	**0.0361**	**0.0000**	**142.9673**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0311	0.2212	0.4453	6.8000e-004	0.0187	3.3600e-003	0.0221	5.3400e-003	3.0900e-003	8.4300e-003	0.0000	59.6763	59.6763	4.5000e-004	0.0000	59.6857
Worker	0.0210	0.0254	0.2658	6.9000e-004	0.0581	4.2000e-004	0.0585	0.0155	3.9000e-004	0.0158	0.0000	47.9131	47.9131	2.3300e-003	0.0000	47.9620
Total	**0.0521**	**0.2466**	**0.7112**	**1.3700e-003**	**0.0768**	**3.7800e-003**	**0.0806**	**0.0208**	**3.4800e-003**	**0.0243**	**0.0000**	**107.5894**	**107.5894**	**2.7800e-003**	**0.0000**	**107.6477**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1589	1.4006	1.0728	1.6000e-003		0.0920	0.0920		0.0862	0.0862	0.0000	142.2081	142.2081	0.0361	0.0000	142.9671
Total	**0.1589**	**1.4006**	**1.0728**	**1.6000e-003**		**0.0920**	**0.0920**		**0.0862**	**0.0862**	**0.0000**	**142.2081**	**142.2081**	**0.0361**	**0.0000**	**142.9671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0311	0.2212	0.4453	6.8000e-004	0.0187	3.3600e-003	0.0221	5.3400e-003	3.0900e-003	8.4300e-003	0.0000	59.6763	59.6763	4.5000e-004	0.0000	59.6857
Worker	0.0210	0.0254	0.2658	6.9000e-004	0.0581	4.2000e-004	0.0585	0.0155	3.9000e-004	0.0158	0.0000	47.9131	47.9131	2.3300e-003	0.0000	47.9620
Total	**0.0521**	**0.2466**	**0.7112**	**1.3700e-003**	**0.0768**	**3.7800e-003**	**0.0806**	**0.0208**	**3.4800e-003**	**0.0243**	**0.0000**	**107.5894**	**107.5894**	**2.7800e-003**	**0.0000**	**107.6477**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019

Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	8.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0244**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9086	0.9086	4.0000e-005	0.0000	0.9095
Total	**4.0000e-004**	**4.8000e-004**	**5.0400e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9086**	**0.9086**	**4.0000e-005**	**0.0000**	**0.9095**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7416					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7446**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	9.0000e-004	9.4100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6960	1.6960	8.0000e-005	0.0000	1.6978
Total	**7.4000e-004**	**9.0000e-004**	**9.4100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0700e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6960**	**1.6960**	**8.0000e-005**	**0.0000**	**1.6978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7416					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.7446**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	9.0000e-004	9.4100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6960	1.6960	8.0000e-005	0.0000	1.6978
Total	**7.4000e-004**	**9.0000e-004**	**9.4100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0700e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.6960**	**1.6960**	**8.0000e-005**	**0.0000**	**1.6978**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9606	5.2425	26.2856	0.0559	3.8496	0.0716	3.9212	1.0313	0.0660	1.0973	0.0000	4,003.3841	4,003.3841	0.1625	0.0000	4,006.7961
Unmitigated	2.9606	5.2425	26.2856	0.0559	3.8496	0.0716	3.9212	1.0313	0.0660	1.0973	0.0000	4,003.3841	4,003.3841	0.1625	0.0000	4,006.7961

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	1,306.40	1,306.40	1306.40	2,144,633	2,144,633
Supermarket	4,992.90	4,992.90	4992.90	8,196,544	8,196,544
Total	6,299.30	6,299.30	6,299.30	10,341,178	10,341,178

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Parking Lot	4.51	4.51	4.51	0.00	0.00	0.00	0	0	0
Regional Shopping Center	4.51	4.51	4.51	16.30	64.70	19.00	100	0	0
Supermarket	4.51	4.51	4.51	6.50	74.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	721.8221	721.8221	0.0384	7.9400e-003	725.0907
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	721.8221	721.8221	0.0384	7.9400e-003	725.0907
NaturalGas Mitigated	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003	0.0000	75.1259	75.1259	1.4400e-003	1.3800e-003	75.5832
NaturalGas Unmitigated	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003	0.0000	75.1259	75.1259	1.4400e-003	1.3800e-003	75.5832

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	196157	1.0600e-003	9.6200e-003	8.0800e-003	6.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	10.4677	10.4677	2.0000e-004	1.9000e-004	10.5314
Supermarket	1.21165e+006	6.5300e-003	0.0594	0.0499	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	64.6583	64.6583	1.2400e-003	1.1900e-003	65.0518
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.5900e-003**	**0.0690**	**0.0580**	**4.2000e-004**		**5.2400e-003**	**5.2400e-003**		**5.2400e-003**	**5.2400e-003**	**0.0000**	**75.1260**	**75.1260**	**1.4400e-003**	**1.3800e-003**	**75.5832**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	196157	1.0600e-003	9.6200e-003	8.0800e-003	6.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	10.4677	10.4677	2.0000e-004	1.9000e-004	10.5314
Supermarket	1.21165e+006	6.5300e-003	0.0594	0.0499	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	64.6583	64.6583	1.2400e-003	1.1900e-003	65.0518
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.5900e-003**	**0.0690**	**0.0580**	**4.2000e-004**		**5.2400e-003**	**5.2400e-003**		**5.2400e-003**	**5.2400e-003**	**0.0000**	**75.1260**	**75.1260**	**1.4400e-003**	**1.3800e-003**	**75.5832**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	140096	34.6481	1.8400e-003	3.8000e-004	34.8050
Regional Shopping Center	525718	130.0189	6.9200e-003	1.4300e-003	130.6077
Supermarket	2.2528e+006	557.1551	0.0296	6.1300e-003	559.6780
Total		**721.8221**	**0.0384**	**7.9400e-003**	**725.0907**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	140096	34.6481	1.8400e-003	3.8000e-004	34.8050
Regional Shopping Center	525718	130.0189	6.9200e-003	1.4300e-003	130.6077
Supermarket	2.2528e+006	557.1551	0.0296	6.1300e-003	559.6780
Total		**721.8221**	**0.0384**	**7.9400e-003**	**725.0907**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4740	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131
Unmitigated	1.4740	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0742					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3992					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.1000e-004	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131
Total	**1.4740**	**6.0000e-005**	**6.4300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0124**	**0.0124**	**3.0000e-005**	**0.0000**	**0.0131**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0742					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3992					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.1000e-004	6.0000e-005	6.4300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0124	0.0124	3.0000e-005	0.0000	0.0131
Total	**1.4740**	**6.0000e-005**	**6.4300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0124**	**0.0124**	**3.0000e-005**	**0.0000**	**0.0131**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.8144	0.0130	7.8800e-003	20.5318
Unmitigated	17.8144	0.0130	7.8700e-003	20.5278

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.2503 / 1.99212	6.8796	4.2600e-003	2.5600e-003	7.7640
Supermarket	6.77975 / 0.209683	10.9347	8.7100e-003	5.3100e-003	12.7639
Total		**17.8144**	**0.0130**	**7.8700e-003**	**20.5278**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.2503 / 1.99212	6.8796	4.2800e-003	2.5700e-003	7.7652
Supermarket	6.77975 / 0.209683	10.9347	8.7400e-003	5.3200e-003	12.7665
Total		**17.8144**	**0.0130**	**7.8900e-003**	**20.5318**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.0799	1.0685	0.0000	40.5182
Unmitigated	72.3196	4.2740	0.0000	162.0729

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	46.07	9.3518	0.5527	0.0000	20.9580
Supermarket	310.2	62.9678	3.7213	0.0000	141.1149
Total		**72.3196**	**4.2740**	**0.0000**	**162.0729**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11.5175	2.3380	0.1382	0.0000	5.2395
Supermarket	77.55	15.7420	0.9303	0.0000	35.2787
Total		**18.0799**	**1.0685**	**0.0000**	**40.5182**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Version: CalEEMod.2013.2.2

Date: 5/20/2016 11:01 AM

Raleys Project Alt 4 - Construction and Operations

Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Utilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	5	No Change	0.00
Forklifts	Diesel	No Change	0	4	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00

Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000
Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.39000E-002	5.23180E-001	1.90900E-001	4.20000E-004	2.29300E-002	2.11000E-002	0.00000E+000	3.83734E+001	3.83734E+001	1.18700E-002	0.00000E+000	3.86227E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41922E+001	4.41922E+001	1.35400E-002	0.00000E+000	4.44766E+001
Forklifts	6.44500E-002	5.64690E-001	4.13920E-001	5.20000E-004	4.57100E-002	4.20600E-002	0.00000E+000	4.73974E+001	4.73974E+001	1.46600E-002	0.00000E+000	4.77054E+001
Generator Sets	4.47800E-002	3.58720E-001	3.17150E-001	5.60000E-004	2.33800E-002	2.33800E-002	0.00000E+000	4.77070E+001	4.77070E+001	3.61000E-003	0.00000E+000	4.77828E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67633E+000	8.67633E+000	2.66000E-003	0.00000E+000	8.73216E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25421E+000	8.25421E+000	2.57000E-003	0.00000E+000	8.30817E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32630E+000	7.32630E+000	2.28000E-003	0.00000E+000	7.37419E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78824E+000	4.78824E+000	1.49000E-003	0.00000E+000	4.81954E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81601E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14589E+001	4.14589E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	1.00450E-001	9.78300E-001	8.17940E-001	1.08000E-003	7.15000E-002	6.57800E-002	0.00000E+000	9.89986E+001	9.89986E+001	3.05900E-002	0.00000E+000	9.96409E+001
Welders	3.92300E-002	1.43900E-001	1.58680E-001	2.20000E-004	1.00500E-002	1.00500E-002	0.00000E+000	1.58870E+001	1.58870E+001	3.20000E-003	0.00000E+000	1.59542E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.99000E-003	2.00600E-002	1.85400E-002	3.00000E-005	1.51000E-003	1.51000E-003	0.00000E+000	2.55326E+000	2.55326E+000	2.40000E-004	0.00000E+000	2.55835E+000

Concrete/Industrial Saws	1.16200E-002	8.52200E-002	7.49800E-002	1.30000E-004	6.13000E-003	6.13000E-003	0.00000E+000	1.07531E+001	1.07531E+001	9.50000E-004	0.00000E+000	1.07730E+001
Cranes	4.39000E-002	5.23180E-001	1.90900E-001	4.20000E-004	2.29300E-002	2.11000E-002	0.00000E+000	3.83734E+001	3.83734E+001	1.18700E-002	0.00000E+000	3.86227E+001
Excavators	3.26000E-002	3.61520E-001	3.07890E-001	4.80000E-004	1.77900E-002	1.63600E-002	0.00000E+000	4.41921E+001	4.41921E+001	1.35400E-002	0.00000E+000	4.44765E+001
Forklifts	6.44500E-002	5.64690E-001	4.13920E-001	5.20000E-004	4.57100E-002	4.20600E-002	0.00000E+000	4.73974E+001	4.73974E+001	1.46600E-002	0.00000E+000	4.77053E+001
Generator Sets	4.47800E-002	3.58720E-001	3.17150E-001	5.60000E-004	2.33800E-002	2.33800E-002	0.00000E+000	4.77070E+001	4.77070E+001	3.61000E-003	0.00000E+000	4.77827E+001
Graders	1.42900E-002	1.44620E-001	7.25700E-002	9.00000E-005	8.12000E-003	7.47000E-003	0.00000E+000	8.67632E+000	8.67632E+000	2.66000E-003	0.00000E+000	8.73215E+000
Pavers	6.27000E-003	6.93900E-002	5.62800E-002	9.00000E-005	3.39000E-003	3.12000E-003	0.00000E+000	8.25420E+000	8.25420E+000	2.57000E-003	0.00000E+000	8.30816E+000
Paving Equipment	4.68000E-003	5.23700E-002	4.99500E-002	8.00000E-005	2.56000E-003	2.36000E-003	0.00000E+000	7.32629E+000	7.32629E+000	2.28000E-003	0.00000E+000	7.37418E+000
Rollers	5.16000E-003	4.98700E-002	3.87100E-002	5.00000E-005	3.43000E-003	3.16000E-003	0.00000E+000	4.78823E+000	4.78823E+000	1.49000E-003	0.00000E+000	4.81953E+000
Rubber Tired Dozers	8.33200E-002	9.23490E-001	6.95840E-001	6.20000E-004	4.29000E-002	3.94700E-002	0.00000E+000	5.77882E+001	5.77882E+001	1.77100E-002	0.00000E+000	5.81600E+001
Scrapers	3.89700E-002	4.89550E-001	3.05950E-001	4.50000E-004	1.96500E-002	1.80700E-002	0.00000E+000	4.14588E+001	4.14588E+001	1.27000E-002	0.00000E+000	4.17256E+001
Tractors/Loaders/Backhoes	1.00450E-001	9.78300E-001	8.17940E-001	1.08000E-003	7.15000E-002	6.57800E-002	0.00000E+000	9.89985E+001	9.89985E+001	3.05900E-002	0.00000E+000	9.96408E+001
Welders	3.92300E-002	1.43900E-001	1.58680E-001	2.20000E-004	1.00500E-002	1.00500E-002	0.00000E+000	1.58870E+001	1.58870E+001	3.20000E-003	0.00000E+000	1.59542E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	9.28247E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30299E-006	1.30299E-006	0.00000E+000	0.00000E+000	1.29457E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.35771E-006	1.35771E-006	0.00000E+000	0.00000E+000	1.34903E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26589E-006	1.26589E-006	0.00000E+000	0.00000E+000	1.25772E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25768E-006	1.25768E-006	0.00000E+000	0.00000E+000	1.25568E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15256E-006	1.15256E-006	0.00000E+000	0.00000E+000	1.14519E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21150E-006	1.21150E-006	0.00000E+000	0.00000E+000	1.20363E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36495E-006	1.36495E-006	0.00000E+000	0.00000E+000	1.35608E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.08845E-006	2.08845E-006	0.00000E+000	0.00000E+000	2.07489E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21132E-006	1.21132E-006	0.00000E+000	0.00000E+000	1.20358E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20601E-006	1.20601E-006	0.00000E+000	0.00000E+000	1.19830E-006

Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21214E-006	1.21214E-006	0.00000E+000	0.00000E+000	1.10396E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25889E-006	1.25889E-006	0.00000E+000	0.00000E+000	1.25359E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.13	0.03	0.13	0.03	0.00	0.00
Demolition	Fugitive Dust	0.04	0.01	0.02	0.00	0.55	0.55
Demolition	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading/Utilities	Fugitive Dust	0.13	0.05	0.06	0.02	0.55	0.55
Grading/Utilities	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.04	0.02	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.39	-0.25	-0.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.11	0.33		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				

No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value

No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		

No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	

Proposed Project - Climate Action Plan Consistency Checklist

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Community Development

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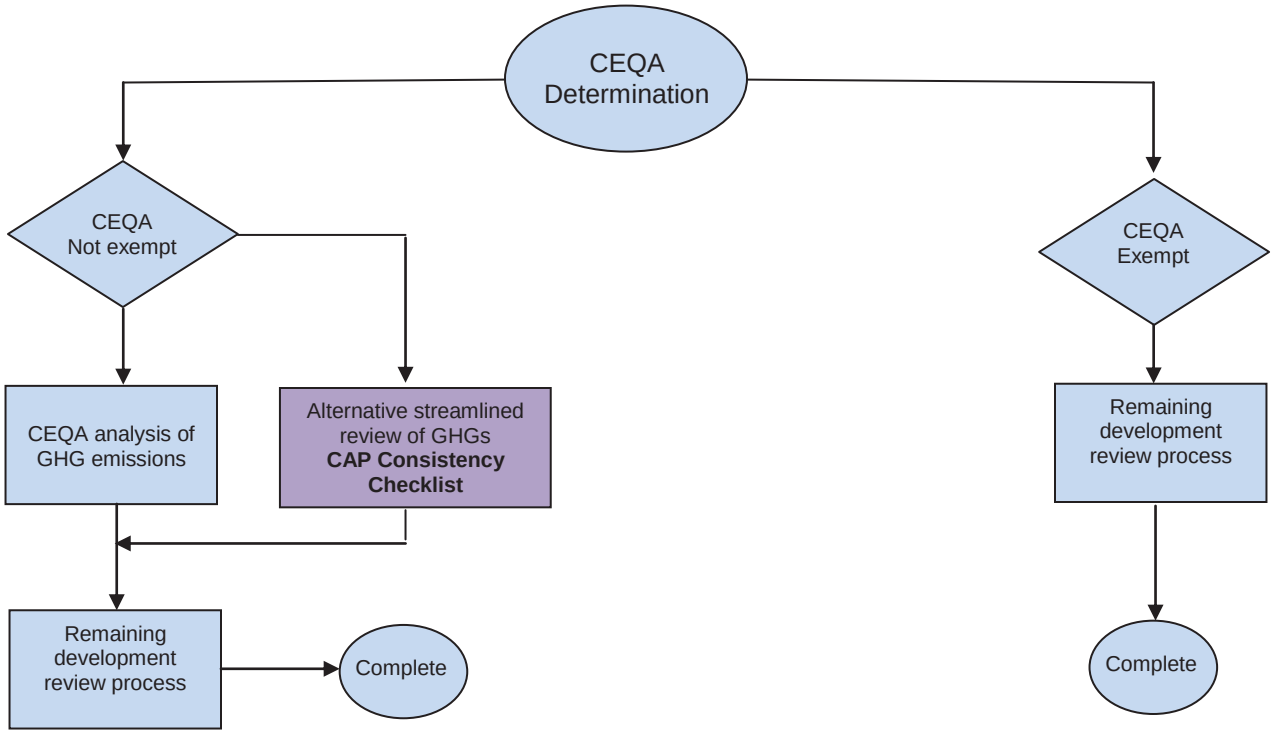
CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

The purpose of the Climate Action Plan Consistency Review Checklist (CAP Consistency Review Checklist) is to provide a streamlined review process for proposed new development projects which are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA)..

CEQA Guidelines require the analysis of greenhouse gas (GHG) emissions and potential climate change impacts from new development. The Sacramento Climate Action Plan qualifies under section 15183.5 of the CEQA Guidelines as a plan for the reduction of GHG emissions for use in cumulative impact analysis pertaining to development projects. This allows projects that demonstrate consistency with the CAP to be eligible for this streamlining procedure. Projects that demonstrate consistency with the CAP and the Sacramento 2030 General Plan may be able to answer "No additional significant environmental effect" in the City's initial study checklist. Projects that do not demonstrate consistency may, at the City's discretion, prepare a more comprehensive project-specific analysis of GHG emissions consistent with CEQA requirements. (See FAQ about the CAP Consistency Review Checklist for more details.)

The diagram below shows the context for the CAP Consistency Review Checklist within the planning review process framework.

Streamlined Review of GHG Emissions in Development Projects



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CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

Application Submittal Requirements

1. The CAP Consistency Review Checklist is required only for proposed new development projects which are subject to CEQA review (non-exempt projects)
2. If required, the CAP Consistency Review Checklist must be submitted in addition to the basic set of requirements set forth in the Universal Application and the Planning Application Submittal Matrix.
3. The applicant shall work with staff to meet the requirements of this checklist. These requirements will be reflected in the conditions of approval and/or mitigation measures.
4. All conditions of approval and mitigation measures from this checklist shall be shown on full-size sheets for building plan check submittals.

Application Information

Project Number: P14-048

Address of Property: 4700, 4740, 4790 Freeport Boulevard and 1913, 1919, 1927 and 2009 Wentworth Avenue

Was a special consultant retained to complete this checklist? ☑ Yes ☐ No. If yes, complete following

Consultant Name*: David Blair

Company: MCG Architects

Phone: 415-974-6002 E-Mail: DBlair@mcgarchitecture.com

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CAP Consistency Checklist Form for Projects that are Not Exempt from CEQA

Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	No*
1. Is the proposed project substantially consistent with the City's over-all goals for land use and urban form, allowable floor area ratio (FAR) and/or density standards in the City's 2035 General Plan, as it currently exists?	☑	☐

Please explain how proposed project compares to 2035 General Plan with respect to density standards, FAR, land use and urban form. (See directions for filling out CAP Checklist)

The project site is within an area designated Urban Corridor High along the Freeport Boulevard corridor. The Floor Area Ratio (FAR) for this designation ranges from 0.30 to 6.0. The proposed project has an FAR of 0.24. While the proposal is below the minimum within this designation, the project site abuts single family homes on two sides (west and north) and has been designed to be respectful of their views and access to sunlight. To help compensate, the project includes elements from the Citywide Design Guidelines (Neighborhood Commercial Corridor Design Principles) including limited setbacks; buildings with a high degree of pedestrian-oriented uses such as outdoor cafes and restaurant seating areas; parking located behind or integrated into the site; and gathering places such as plazas.

	Yes	NA
2. Would the project incorporate traffic calming measures? *(Examples of traffic calming measures include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.)*	☐	☑

Please explain how the proposed project meets this requirement (list traffic calming measures). If "not applicable" (NA), explain why traffic calming measures were not required.

NA. The proposed project does not include any residential uses or (public or private) roadway improvements, therefore traffic calming measures are not applicable.

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	NA
3. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan?	☑	☐

Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.

The proposed project includes pedestrian connections to Freeport Boulevard and Wentworth Avenue. The site is located along the #24 Freeport bus line. The existing asphalt paved sidewalk along Freeport Boulevard fronting the project site will be upgraded to a fully compliant concrete sidewalk per city standards. Sidewalk improvements will also be made to the sidewalk fronting Wentworth Avenue.

4. Would the project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen?	Yes	NA
	☑	☐

Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.

Bicycle parking will be provided per the city code requirements including both short and long term parking areas for Class II and III parking facilities. Access to the bicycle parking areas will conform to the guidelines of the City/County Bikeway Master Plan.

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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	Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	No*	NA
5.	For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., photovoltaic systems) that would generate at least a minimum of 15% of the project's total energy demand on-site? (CAP Actions: 3.4.1 and 3.4.2)	☑	☐	☐

Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required. If project does not meet requirements, see DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST re: alternatives to meeting checklist requirements.

The project most likely will substitute energy efficiency in lieu of providing on-site renewable energy by exceeding the state's Title 24 energy efficiency a minimum of 5%.

Attach a copy of the CalEEMod input and output. Record the model and version here _____.
Do NOT select the "use historical" box in CalEEMod for energy demand analysis related to this requirement.

		Yes	NA
6.	Would the project (if constructed on or after January 1, 2014) comply with minimum CALGreen Tier I water efficiency standards?	☑	☐

Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.

The project will comply with the CALGreen Tier 1 water efficiency and conservation standards.

*If "No", equivalent or better GHG reduction must be demonstrated as part and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Signature: _____ Date: _____

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DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST

General Plan Consistency & Sustainable Land Use

1. **Is the proposed project substantially consistent with the land use and urban form designation, allowable floor area ratio (FAR) and/or density standards in the City's 2035 General Plan?**

   Consistency with the General Plan land use and urban form designation, FAR and/or density standards is a key determining factor in whether or not the CAP Consistency Review procedure can be used. This is because future growth and development consistent with the General Plan was used to estimate business as usual emission forecasts, as well as emission reductions from actions that would be applicable to new development.

   Refer to the 2035 General Plan, Land Use and Urban Form Designations and Development Standards starting on page 2-29. If a project is not fully consistent with the General Plan, the project still may qualify for consistency with the CAP, but this determination will need to be closely coordinated with the City. The City will determine whether the proposed land uses under consideration could be found consistent with the growth projections and assumptions used to develop the GHG emissions inventory and projections in the CAP.

Mobility

2. **Would the project incorporate traffic calming measures? (Applicable CAP Action: 2.1.1)**

   List the traffic calming measures that have been incorporated into the project. These may include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.

   The project proponent and City staff should consult with staff in the Department of Public Works-Transportation Division to verify that traffic calming measures are adequate and in compliance with the City's Street Design Standards.

   If the proposed project does not include any roadway or facility improvements, traffic calming measures may not apply. For example, certain infill projects may not result in on-street or transportation facility improvements because sufficient infrastructure already exists.

3. **Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan? (Applicable CAP Action: 2.2.1)**

   List the pedestrian facilities and connections to public transportation that have been included in the proposed project on the Checklist. These may include, but are not limited to: sidewalks on both sides of streets, marked crosswalks, count-down signal timers, curb extensions, median islands, transit shelters, street lighting.

   The project proponent and City staff should consult with Department of Public Works-Transportation Division staff to verify that pedestrian facilities are consistent with the Pedestrian Master Plan. As in the previous example, if "not applicable", an explanation shall be documented in the Checklist. For example, certain infill projects may not require on-street or transportation facility improvements because sufficient infrastructure already exists.

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The "Pedestrian Review Process Guide" (Appendix A to the Master Plan) will be used to determine consistency, as follows:

- For typical infill development projects where existing streets will serve the site (no new streets are proposed): the level of pedestrian improvements necessary to determine Pedestrian Master Plan consistency will be measured according to the "Basic, Upgrade or Premium" categories defined in Appendix A to the Pedestrian Master Plan, which are based on project location, surrounding land uses, proximity to transit, etc. If the proposed project does not include the minimum level of improvements per the assigned category for the project's location, the project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.

- For new "greenfield" projects and/or larger infill development projects where new streets are proposed as part of the project, the following will apply:
    - "Basic, Upgrade or Premium" levels of improvement will be required based on the proposed project's location and context, where applicable, consistent with the criteria defined in the Master Plan. If the proposed project does not include the minimum level of improvements per the assigned category, the

      project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.
    - The "Pedestrian Smart Growth Scorecard" (Appendix A to the Master Plan) will be required to be completed for the project, and a minimum score of 3 or better will need to be achieved. If the proposed project cannot achieve the minimum score, changes to the proposed project may be required, and/or the project may be required as a condition of approval to include certain improvements such that the average score will meet 3 or better. (Note: an Excel version of the Pedestrian Smart Growth Scorecard is available, to assist in automating the rating & scoring process)

4. Would the project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen? (Applicable CAP Action: 2.3.1)

List the bicycle facilities that are incorporated into the proposed project on the Checklist. These include, but are not limited to: Class I bike trails and Class II bike lanes connecting the project site to an existing bike network and transit stations, bike parking [bike racks, indoor secure bike parking, bike lockers], end-of-trip facilities at non-residential land uses [showers, lockers]).

The project proponent and City staff should consult with staff in the Transportation Division of the Department of Public Works to verify that such facilities are consistent with the Bikeway Master Plan and meet or exceed Zoning Code and CALGreen standards. Generally, the following guidelines will be used:

- If existing on-street and off-street bikeways are already present and determined to be consistent with the Bikeway Master Plan, no additional on-street bikeways will be required. Check the "not applicable" box if appropriate. However, on-site facilities shall still be required to meet or exceed minimum Zoning and CALGreen requirements.
- If not applicable, fully document the reasons why using the Checklist.

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- If on-street bicycle facilities are not present or are only partially consistent with the Master Plan, the project will be required as a condition of approval to construct or pay for its fair-share of on-street and/or off-street bikeways described in the Master Plan, in addition to meeting or exceeding minimum on-site facilities.
- In some cases, a combination of new or upgraded on-street and off-street bikeways may be used to determine consistency with the Master Plan, at the discretion of the Department of Public Works-Transportation Division staff.

Energy Efficiency and Renewable Energy

5. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., solar photovoltaic, solar water heating etc.) that would generate at least 15% of the project's total energy demand? (CAP Actions: 3.4.1 and 3.4.2)

For projects of the minimum size specified in this measure, a commitment in the project description or in a mitigation measure that the project shall generate a minimum of 15% of the project's energy demand on-site is sufficient to demonstrate consistency with this measure. However, the project conditions of approval or mitigation measures should specify the intended renewable energy technology to be used (e.g. solar photovoltaic, solar water heating, wind, etc.) and estimated size of the systems to meet project demand based on the project description.

"Total energy demand" refers to the energy (electricity and natural gas) consumed by the built environment (including HVAC systems, water heating systems, and lighting systems) as well as uses that are independent of the construction of buildings, such as office equipment and other plug-ins.

Applicants may estimate the total energy demand of their projects using California Emissions Estimator Model (CalEEMod 2013.2), the same software used to estimate greenhouse gas emissions. ***For CalEEMod estimates of energy demand to meet this specific requirement, the user should NOT select the "use historical" box, otherwise they will be "double-counting" emissions reductions that have already been counted***. CalEEMod outputs for electricity demand are provided in annual kWh, and natural gas demand is provided in annual kBTU.

The energy demand estimate by CalEEMod is based on two datasets:

- The California Commercial End Use Survey (CEUS);
- The Residential Appliance Saturation Survey (RASS

CalEEMod takes energy use intensity data (above) and forecasts energy demand based on climate zone, land use subtype (such as "hospital", "arena", or "apartments, mid rise"), building area, and the number of buildings or units. This is an appropriate level of analysis for use at the planning submittal stage, but it may not provide an accurate picture of actual project energy demand because it does not factor project specifics such as building design.

Therefore, the applicant is advised (but not required) to run a more comprehensive energy simulation once project-specific details are known: basic building design, square-footage, building envelope, lighting design (at least rudimentary), and the mechanical system (at least minimally zoned). Some of the energy simulation programs that are appropriate for this level of analysis include: DOE 2.2, Trace 700, and Energy Pro.

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The U.S. DOE maintains a list of energy simulation programs that are available.
http://apps1.eere.energy.gov/buildings/tools_directory/subjects.cfm/pagename=subjects/pagename_menu=whole_building_analysis/pagename_submenu=energy_simulation

The applicant may then revise the estimate and make a final determination regarding the size of the PV system that is required.

Substitutions: Projects may substitute a quantity of energy efficiency for renewable energy, as long as the substituted GHG reduction does not "double count" GHG reductions already taken by the CAP. In other words, substitutions must reduce GHG emissions from the project beyond what is already accounted for in the CAP (to avoid double-counting).

- Additional mitigation may include equivalent or better GHG reduction from individual measures or a combination of:
- In lieu of installing PV systems that would generate 15% of the projects total energy, the project may exceed energy efficiency standards of Title 24, part 6 of the California Building Code, such as building to CALGreen Tier 1 energy standards. (Residential projects shall exceed the 2013 Title 24 energy efficiency by a minimum of 10% and commercial projects shall exceed 2013 Title 24 energy efficiency by a minimum of 5%).

6. Would the project comply with minimum CALGreen Tier I water efficiency standards? (CAP Action: 5.1.1)

The California Green Building Standards Code (CALGreen) includes mandatory green building measures, as well as voluntary measures that local jurisdictions may choose to adopt to achieve higher performance tiers, at either Tier 1 or Tier 2 compliance levels. Sacramento has adopted Tier 1 Water Efficiency Standards to be required on or after January 1, 2014 Currently, in order to meet the Tier 1 Water Efficiency Standards, buildings are required to implement all mandatory water efficiency and conservation measures as well as certain Tier 1 specific measures that exceed minimum mandatory measures (e.g. 30% increase in indoor water efficiency). Specific Tier 1 provisions can be found in the CALGreen Code at http://www.bsc.ca.gov/Home/CALGreen.aspx.

The City recognizes that project construction details are often not known at the environmental review stage, and it may be premature for a project proponent to identify compliance with precise requirements of CALGreen. A condition of approval requiring the project to comply with minimum CALGreen Tier 1 water efficiency and conservation standards is sufficient to demonstrate consistency with this criterion.

Planning approval of your project will include the following condition:
Project must meet CALGreen Tier 1 water efficiency and conservation standards. Copies of the appropriate CalGreen checklist (see FAQ) shall be included on the full-size sheets for building plan check submittals.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

Additional State of California Greenhouse Gas Regulations

Additional State Regulations

Assembly Bill 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required California Air Resources Board (CARB) to set greenhouse gas (GHG) emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%. Before these regulations could go into effect, the EPA had to grant California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards. The waiver was granted by Lisa Jackson, the EPA administrator, on June 30, 2009. On March 29, 2010, the CARB executive officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012–2016 model years (see EPA and NHTSA Joint Final Rules for Vehicle Standards). The revised regulations became effective April 1, 2010.

Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California's GHG emission reduction targets in Executive Order S-3-05. The executive order established the following goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050. The CalEPA secretary is required to coordinate efforts of various agencies to collectively and efficiently reduce GHGs. The Climate Action Team (CAT) is responsible for implementing global warming emission reduction programs. Representatives from several state agencies compose the CAT. Under the executive order, the CalEPA secretary is directed to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The CAT fulfilled its initial report requirements through the 2006 *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (CAT 2006).

The 2009 *Climate Action Team Biennial Report* (CAT 2010a), published in April 2010, expands on the policy outlined in the 2006 assessment. The 2009 report provides new information and scientific findings regarding the development of new climate and sea level projections using new information and tools that have recently become available. It also evaluates climate change within the context of broader social changes, such as land use changes and demographics. The 2009 report also identifies the need for additional research in several different aspects that

affect climate change in order to support effective climate change strategies. The aspects of climate change determined to require future research include vehicle and fuel technologies, land use and smart growth, electricity and natural gas, energy efficiency, renewable energy and reduced carbon energy sources, low GHG technologies for other sectors, carbon sequestration, terrestrial sequestration, geologic sequestration, economic impacts and considerations, social science, and environmental justice.

The 2010 *Climate Action Team Report to Governor Schwarzenegger and the California Legislature* (CAT 2010b) reviews past Climate Action Milestones including voluntary reporting programs, GHG standards for passenger vehicles, the Low Carbon Fuel Standard, a statewide renewable energy standard, and the cap-and-trade program. Additionally, the 2010 report includes a cataloguing of recent research and ongoing projects; mitigation and adaptation strategies identified by sector (e.g., agriculture, biodiversity, electricity, and natural gas); actions that can be taken at the regional, national, and international levels to mitigate the adverse effects of climate change; and today's outlook on future conditions.

Senate Bill 1368

In September 2006, Governor Schwarzenegger signed SB 1368, which requires the California Energy Commission (CEC) to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC). This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

Executive Order S-1-07

Issued on January 18, 2007, Executive Order S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2E grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard is anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Senate Bill 97

In August 2007, the California State Legislature enacted SB 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under the CEQA for the mitigation of GHG emissions. The OPR was to develop proposed guidelines by July 1, 2009, and the Natural Resources Agency was directed to adopt the guidelines by January 1, 2010.

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant.

The Natural Resources Agency adopted the CEQA Guidelines amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law completed its review and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project" (Section 15064(a))
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (Section 15064.4(a))
- Requiring a lead agency to consider the following factors when assessing the significant impacts from GHG emissions on the environment:
    - The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting
    - Whether the project emissions exceed a threshold of significance that the Lead Agency determines applies to the project
    - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. (Section 15064.4(b))
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of

project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the environmental checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The California Natural Resources Agency (CNRA) also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009b).

Senate Bill 375

In August 2008, the legislature passed, and on September 30, 2008, Governor Schwarzenegger signed, SB 375 (Steinberg), which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, as determined by CARB, are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations will be responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, a metropolitan planning organization must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the SCS or alternative planning strategy.

Executive Order S-13-08

Governor Schwarzenegger issued Executive Order S-13-08 on November 14, 2008. The executive order is intended to hasten California's response to the impacts of global climate

change, particularly sea-level rise. It directs state agencies to take specified actions to assess and plan for such impacts. It directs the California Natural Resources Agency, in cooperation with the California Department of Water Resources, CEC, California's coastal management agencies, and the Ocean Protection Council, to request that the National Academy of Sciences prepare a Sea Level Rise Assessment Report by December 1, 2010. The Ocean Protection Council, California Department of Water Resources, and CEC, in cooperation with other state agencies, are required to conduct a public workshop to gather information relevant to the Sea Level Rise Assessment Report. The Business, Transportation, and Housing Agency was ordered to assess within 90 days of issuance of the executive order the vulnerability of the state's transportation systems to sea-level rise. The Governor's Office of Planning and Research and the California Natural Resources Agency are required to provide land use planning guidance related to sea-level rise and other climate change impacts. The order also requires the other state agencies to develop adaptation strategies by June 9, 2009, to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. A discussion draft adaptation strategies report was released in August 2009, and the final *2009 California Climate Adaptation Strategy* report was issued in December 2009 (CNRA 2009a). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: public health, ocean and coastal resources, water supply and flood protection, agriculture, forestry, biodiversity and habitat, and transportation and energy infrastructure. The report then recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Senate Bill X1 2

On April 12, 2011, Governor Jerry Brown signed SB X1 2 in the First Extraordinary Session, which expands the Renewable Portfolio Standard by establishing a goal of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current. A renewable electrical generation facility under this bill would also meet other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the Renewable Portfolio Standard. By January 1, 2012, the CPUC is required to establish the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the governing boards for local publicly owned electric utilities establish the same targets and that the governing boards be responsible for ensuring compliance with these targets. The CPUC will be responsible for enforcement of the Renewable Portfolio Standard for retail sellers, while the CEC and CARB will enforce the requirements for local publicly owned electric utilities.

Executive Order B-16-12

Governor Brown issued Executive Order B-16-12 on March 23, 2012. The Executive Order requires that state entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emission vehicles. It orders CARB, the CEC, the CPUC, and other relevant agencies work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve the following by 2015:

- The state's major metropolitan areas will be able to accommodate zero-emission vehicles, each with infrastructure plans and streamlined permitting
- The state's manufacturing sector will be expanding zero-emission vehicle and component manufacturing
- The private sector's investment in zero-emission vehicle infrastructure will be growing
- The state's academic and research institutions will be contributing to zero-emission vehicle research, innovation and education.

CARB, the CEC, and CPUC, are also directed to establish benchmarks to help achieve the following goals by 2020:

- The state's zero-emission vehicle infrastructure will be able to support up to one million vehicles
- The costs of zero-emission vehicles will be competitive with conventional combustion vehicles
- Zero-emission vehicles will be accessible to mainstream consumers
- There will be widespread use of zero-emission vehicles for public transportation and freight transport
- Transportation sector GHG emissions will be falling as a result of the switch to zero emission vehicles
- Electric vehicle charging will be integrated into the electricity grid
- The private sector's role in the supply chain for zero-emission vehicle component development and manufacturing will be expanding.

Benchmarks are also to be established to help achieve the following goals by 2025:

- Over 1.5 million zero-emission vehicles will be on California roads and their market share will be expanding
- Californians will have easy access to zero-emission vehicle infrastructure
- The zero-emission vehicle industry will be a strong and sustainable part of

California's economy

- California's clean, efficient vehicles will annually displace at least 1.5 billion gallons of petroleum fuels.

On a statewide basis, the Executive Order establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

Executive Order B-18-12

Governor Brown issued Executive Order B-18-12 on April 25, 2012. The Executive Order directs state agencies, departments, and other entities under the governor's executive authority take actions to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. To accomplish these goals with respect to construction of new buildings or major renovations, the Executive Order further orders state agencies to implement the following measures:

- All new state buildings and major renovations beginning design after 2025 will be constructed as Zero Net Energy facilities with an interim target for 50% of new facilities beginning design after 2020 to be Zero Net Energy.
- Any proposed new or major renovation of state buildings larger than 10,000 square feet use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible.
- New or major renovated state buildings and build-to-suit leases larger than 10,000 square feet obtain LEED "Silver" certification or higher.
- New buildings incorporate building commissioning to facilitate improved and efficient building operation.
- State agencies identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new buildings.

The Executive Order also established goals for existing state buildings for reducing grid-based energy purchases and water use.

Senate Bill 605

On September 21, 2014, Governor Jerry Brown signed SB 605, which requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605,

however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, the CARB must complete an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identify research needs to address any data gaps, identify existing and potential new control measures to reduce emissions, and prioritize the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities. The draft strategy released by CARB in September 2015 focuses on methane, black carbon, and fluorinated gases, particularly hydrofluorocarbons, as important short-lived climate pollutants. The draft strategy recognizes emission reduction efforts implemented under AB 32 (e.g., refrigerant management programs) and other regulatory programs (e.g., in-use diesel engines, solid waste diversion) along with additional measures to be developed.

Senate Bill 350

Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the Renewable Portfolio Standard by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Executive Order B-30-15

On April 29, 2015, Governor Jerry Brown issued an executive order that identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. Executive Order B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050, as set forth in Executive Order S-3-05. To facilitate achievement of this goal, Executive Order B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry will be required to prepare GHG reduction plans by September 2015, followed by a report on actions taken in

relation to these plans in June 2016. The executive order does not require local agencies to take any action to meet the new interim GHG reduction threshold. It is important to note that Executive Order B-30-15 was not adopted by a public agency through a public review process that requires analysis pursuant to CEQA Guidelines Section 15064.4 and that it has not been subsequently validated by a statute as an official GHG reduction target of the State of California. The executive order itself states it is “not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.”

APPENDIX C

Land Park Commercial Center Project,
Biological Field Survey

DUDEK

November 24, 2014

Mike Maffia
MO Capital
901Mariners Island Blvd, Suite 125
San Mateo, California 94404

Subject: ***Land Park Commercial Center Project, Biological Field Survey, 4700 Freeport Boulevard, Sacramento, CA***

Dear Mr. Maffia:

A biological field survey of 4700 Freeport Boulevard, the proposed Land Park Commercial Center project site, was conducted on October 23, 2014. The focus of the survey was to characterize any biological resources present and to identify potential constraints to development of the site posed by these resources. This letter report documents the methods and results of the survey and constraints analysis.

Site Location and Description

The majority of the Land Park Commercial Center project site is currently an abandoned lot that was previously operated by Capital Nursery, a retail nursery and sales center. It is located at 4700 Freeport Boulevard in Sacramento, California, between Meer Way and Wentworth Avenue (Figure 1). The project site also includes the existing Bank of America building (4740 Freeport Boulevard), the East West Bank building (4740 Freeport Boulevard), two single family residences (1913 and 1919 Wentworth Avenue) and two surface parking lots (1927 and 2009 Wentworth Avenue). With the exception of the two residences and the surface parking lots the Bank of America and East West Bank buildings and associated parking lots would not be affected by any construction activities. However, the focus of this assessment is on the vacant nursery site because access to the rear yards of the residences was not available at the time of the survey and the potential for any resources to be present is highly unlikely. The project site is approximately 10 acres in size and mostly flat with an elevation of 20 feet above sea level. The site is bound on the north, west and south by residential development and on the east by commercial properties. The location corresponds to 38°31’59” north latitude and 121°29’45” west longitude (Figure 2).

The site is currently vacant and contains several older storage buildings and greenhouses, as well as some open areas that were previously used for cultivating plants; a number of support

structures and irrigation systems still remain on the site. The walkways throughout the project site are either gravel or paved and several weedy or ornamental plant species were found sporadically throughout the site. The site is not located near any ditches, streams, culverts, or other water bodies. There are a number of trees in the surface parking lots along Wentworth Avenue that would need to be removed to accommodate the project.

The proposed project includes construction of a new, approximately 55,000 square-foot (sf) Raley's grocery store along with approximately 53,980 sf of retail uses, and surface parking.

Methods

A nine-quad California Natural Diversity Database (CNDDB) search and U.S. Fish and Wildlife Service (USFWS) Endangered and Threatened Species search was performed prior to the field survey to obtain information about any special-status species that could potentially be located on the project site. The field survey was performed on the afternoon of October 23, 2014, at approximately 2:00 p.m. (1400). It included "wandering" or walking transects through the interior of the site, as well as a walking transect along the periphery of the site. The temperature was approximately 78°F with sunny skies. Incidental observations of wildlife or wildlife sign were recorded. The vegetation on the site was characterized and dominant plant species recorded.

Results

Results of the CNDDB and USFWS search indicated thirteen special-status plant and animal species known to occur within a five-mile radius of the site, although no occurrences were recorded on or near the site (Figure 3). Ten of these species are dependent on an aquatic habitat and are fish, amphibians or reptiles; therefore there is no potential of these species occupying the project site. Of the remaining species, none were identified during the field visit and are not anticipated to occur on site due to lack of available habitat (Table 1). Please see the appendix for the results of the CNDDB and USFWS search.

Vegetation

Currently, the site is highly disturbed, and no intact vegetation communities exist. The site is characterized by a variety of non-native grasses, weedy and ornamental species; several mature trees (*Quercus sp., Pinus sp.* and ornamentals) occur on adjacent properties surrounding the site such that branches from these trees extend over the property fence into the project site (Figure 4). There are a few ornamental trees present in the center of site near the old greenhouses.

Table 1
Special-Status Species with Known or Potential Occurrence in the Vicinity of the Proposed Land Park Commercial Center Project in Sacramento, California.

Common Name	Scientific Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
Invertebrates				
valley elderberry longhorn beetle	*Desmocerus californicus dimorphis*	Federally Threatened	The valley elderberry longhorn beetle is completely dependent on its host plant, elderberry (*Sambucus nigra* ssp. *cerulea*), which occurs in riparian and other woodland communities in California's Central Valley and the associated foothills. Female beetles lay their eggs in crevices on the stems or on the leaves of living elderberry plants. When the eggs hatch, larvae bore into the stems. The larval stages last for one to two years. The fifth instar larvae create emergence holes in the stems and then plug the holes and remain in the stems through pupation. Adults emerge through the emergence holes from late March through June. The short-lived adult beetles forage on leaves and flowers of elderberry shrubs.	No potential to occur. Suitable habitat for this species is not present within or adjacent to the project area.
Amphibians and Reptiles				
giant gartersnake	*Thamnophis gigas*	Federally Threatened/State Threatened	Giant gartersnake is found in isolated populations restricted to the Central Valley of California. It is found in freshwater marsh and wetlands, irrigation ditches, low gradient streams and rice fields containing emergent vegetation. Adjacent upland habitat is necessary for cover and aestivation.	No potential to occur. Suitable habitat for this species is not present within or adjacent to the project area.
Birds				
least Bell's vireo	*Vireo bellii pusillus*	Federally Endangered/State Endangered	Least Bell's vireo was formerly a common and widespread summer resident below approximately 600 meters	No potential to occur. Suitable habitat for this species is not present within or adjacent to

Table 1
Special-Status Species with Known or Potential Occurrence in the Vicinity of the Proposed Land Park Commercial Center Project in Sacramento, California.

Common Name	Scientific Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			(2,000 feet) above mean sea level (amsl) elevation in the western Sierra Nevada, throughout the Sacramento and San Joaquin Valleys, and in the coastal valleys and foothills from Santa Clara County south. Least Bell's vireos primarily occupy riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within 1 to 2 meters (3.3 to 6.6 feet) off the ground, often adjacent to a complex, stratified canopy.	the project area.

Wildlife

Some common raptor and songbird species found in urban areas could use the site for foraging and possibly nesting, although none were observed nesting during the field survey. The sporadic small patches of weedy non-native vegetation found throughout the site does provide minimal cover for some urban wildlife such as small mammals and reptiles; however, surrounding urban communities that contain high levels of human activity likely decrease the probability of common wildlife species from using this parcel, although raccoon (*Procyon lotor*) and Virginia opossum (*Didelphis virginianus*) could use the site for foraging or movement. The site could potentially be used as low-quality foraging habitat by songbirds such as American robin (*Turdus migratorius*) and black phoebe (*Sayornis nigricans*). Reptiles such as northwestern fence lizard (*Sceloporus occidentalis occidentalis*) and small mammals such as mice (*Microtus sp*.) and squirrel (*Sciurus sp*.) may use the site for foraging, movement and cover. During the bird nesting season (February 15-August 31), the trees located along the periphery of the site on adjacent properties and within the parking lots could be used by native birds as nesting habitat, and the gravelly, sparsely vegetated open areas of the site where plants used to be stored could also potentially be used by ground-nesting bird species such as killdeer (*Charadrius vociferus*). No wetlands or vernal pool complexes, or vegetation that would indicate such features, were observed on the project site.

Four bird species were observed on, or flying over the site, including northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), western scrub-jay (*Aphelocoma californica*) and turkey vulture (*Cathartes aura*). A feral cat was also observed on the site.

The buildings on the project site could provide roosting habitat for several common bat species, including Mexican free-tailed bat (*Tadarida brasiliensis)* and big brown bat *(Eptesicus fuscus)*, and the open areas on the western and northern portions of the site, which contain old support piping and irrigation equipment, could provide foraging habitat for these species.

Summary

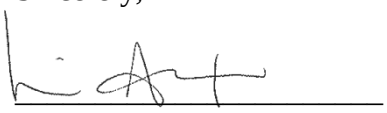
The Land Park Commercial Center project site is urbanized and largely paved or covered by gravel and contains many structures associated with the prior nursery. It does not provide habitat for any special-status plant or animal species, and no special-status plant or animal species or their habitat were observed during the field survey. In addition, no special-status or protected plant or animal species are expected to breed or otherwise utilize the site. No waters or wetlands or riparian habitat under state or federal jurisdiction were found on the project site and no wildlife corridors or nursery sites are present on the site. Wildlife corridors are linear features that connect large areas of natural open space and provide avenues for the migration of animals. Wildlife nursery sites provide cover and food resources that aid in the development of young wildlife. Because the site is a non-linear feature and bound by existing roads and development, the site has little or no value as a potential wildlife corridor or nursery site. Additionally, the project site is not located within the bounds of any adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP).

Construction and future operation of the proposed Raley's grocery store and associated retail uses is not expected to result in any adverse impacts on special-status biological resources. However, if any common bird species used either the ground habitat (ground nesting birds), or the trees adjacent to the site for nesting, construction activities during the nesting season could adversely impact native nesting birds. Active bird nests are protected under the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Therefore, a nesting bird survey for the project site as well as adjacent trees is recommended 30 days prior to the onset of any construction activity that would occur within the nesting period (February 15-August 31) to ensure any nesting birds are not interrupted by construction activity. If nesting birds are detected during surveys, a qualified biologist shall determine an appropriate buffer depending on construction activities, nest location and species. If necessary, the biologist shall consult with the California Department of Fish and Wildlife (CDFW) regarding appropriate buffers, depending on the species and the type of work planned in the vicinity of the nest. In addition, Environmental Awareness Training will be provided to construction workers with

information regarding the possibility of nesting birds on the project site and the course of action to take should a nest be encountered during construction.

Dudek also recommends that a habitat assessment and pre-construction survey be performed by a qualified biologist to assess whether roosting bats occur in the buildings on the project site. If roosting bats are detected, Dudek recommends consultation with CDFW to identify appropriate measures to be taken to avoid/minimize impacts to the species, which can include approval to exclude any bats potentially found on the project site.

Sincerely,



Lisa Achter
Wildlife Biologist
DUDEK
lachter@dudek.com

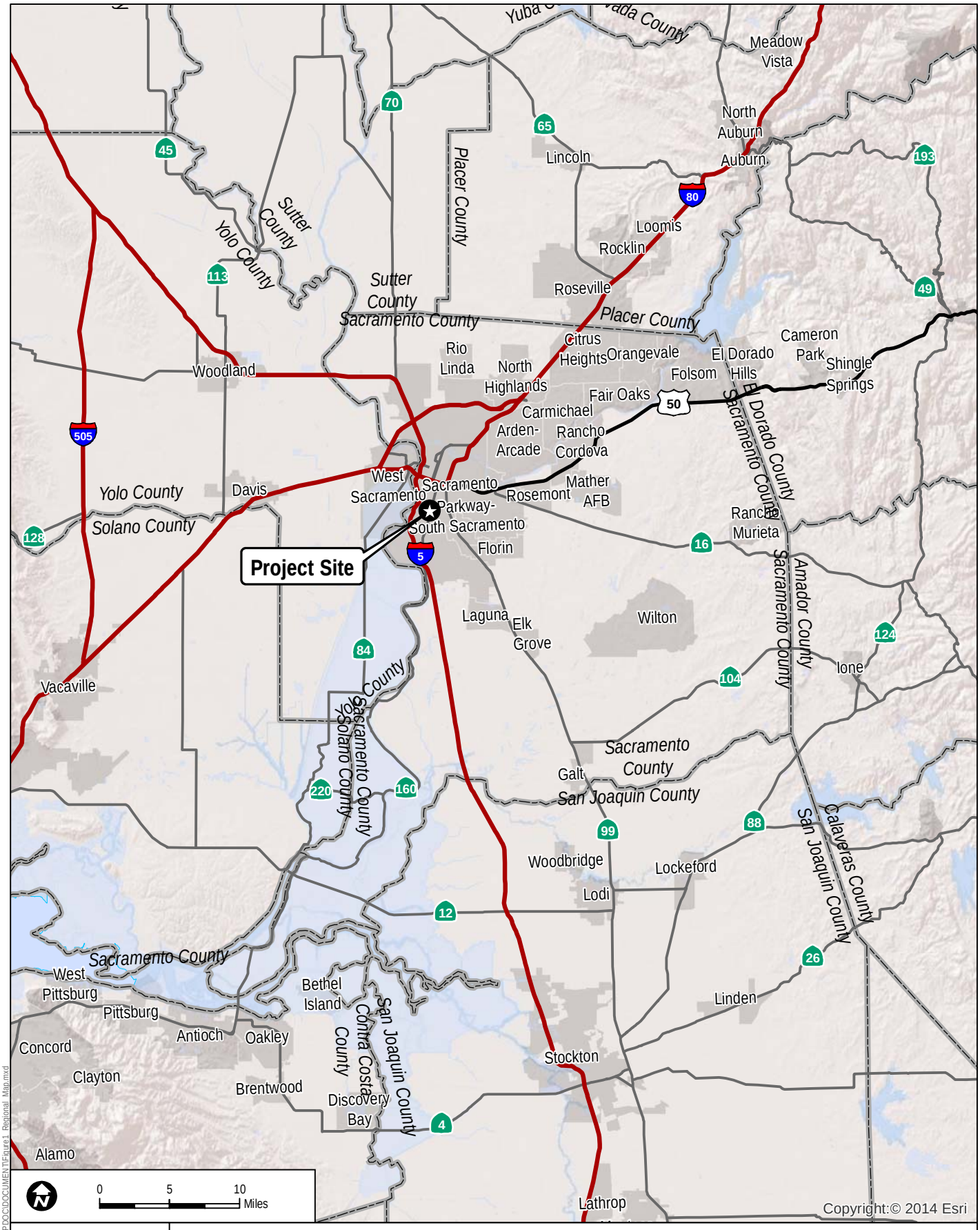


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FIGURE 1

Regional Map

LAND PARK RALEYS

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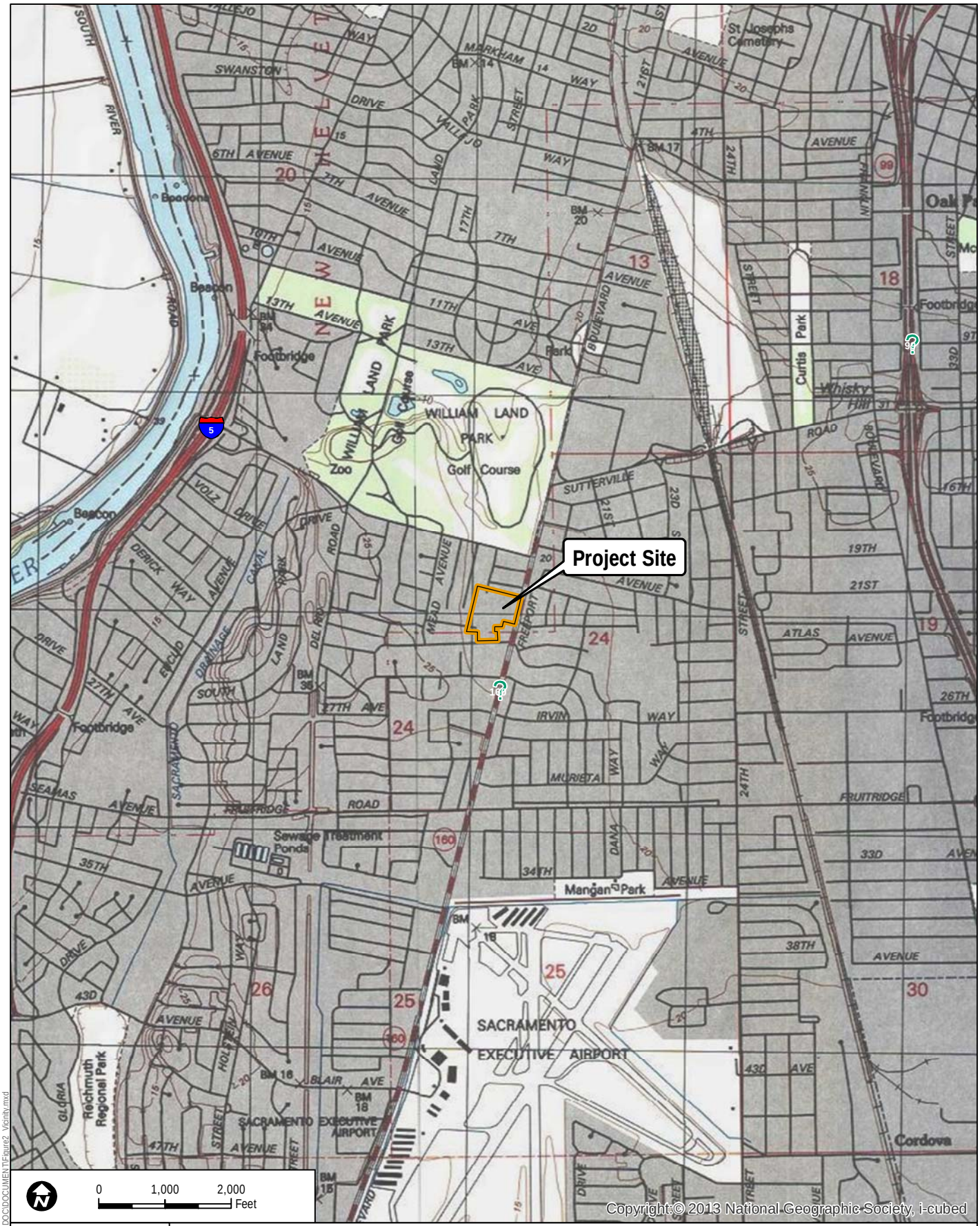

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SOURCE: USGS 7.5-Minute Series Sacramento East Quadrangle.

FIGURE 2
Vicinity Map

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LAND PARK RALEYS

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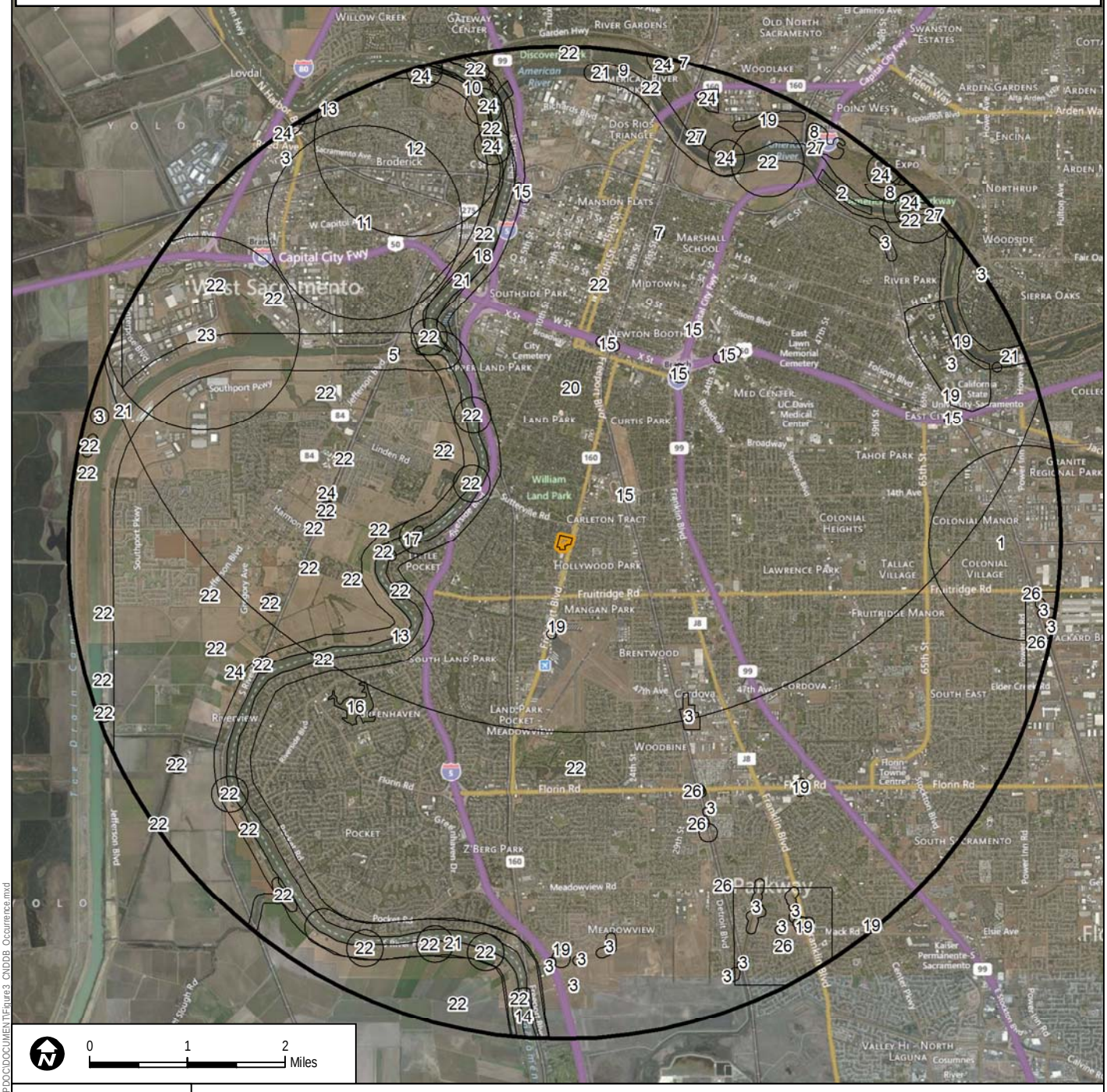
Project Boundary
5-Mile Buffer
CNDDB Occurrence

1, American badger
2, bank swallow
3, burrowing owl
4, California linderiella
5, chinook salmon - Central Valley spring-run ESU
6, chinook salmon - Sacramento River winter-run ESU
7, Cooper's hawk
8, Elderberry Savanna
9, great blue heron
10, Great Valley Cottonwood Riparian Forest
11, hoary bat
12, least Bell's vireo
13, longfin smelt
14, Northern California black walnut
15, purple martin
16, Sacramento perch
17, Sacramento splittail
18, Sacramento Valley tiger beetle
19, Sanford's arrowhead
20, song sparrow ("Modesto" population)
21, steelhead - Central Valley DPS
22, Swainson's hawk
23, tricolored blackbird
24, valley elderberry longhorn beetle
25, vernal pool fairy shrimp
26, vernal pool tadpole shrimp
27, white-tailed kite



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SOURCE: Bing 2014, California Department of Fish and Wildlife 2014

FIGURE 3

CNDDB Occurrences

LAND PARK RALEYS

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Photo 1: Looking west across site.

Photo 2: Entrance to old Capitol Nursery Site.

Photo 3: Looking south across site.

Photo 4: Looking east at old buildings on site.

Photo 5: Abandoned buildings with potential for roosting bats.

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FIGURE 4

Site Photographs

LAND PARK RALEYS

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APPENDIX D

Cultural Resources Report for the Land Park Commercial Center EIR Project

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T 949.450.2525 F 949.450.2626

May 18, 2016 8814

Mike Maffia
MO Capital
1140 Deana Drive
Menlo Park, California 94052

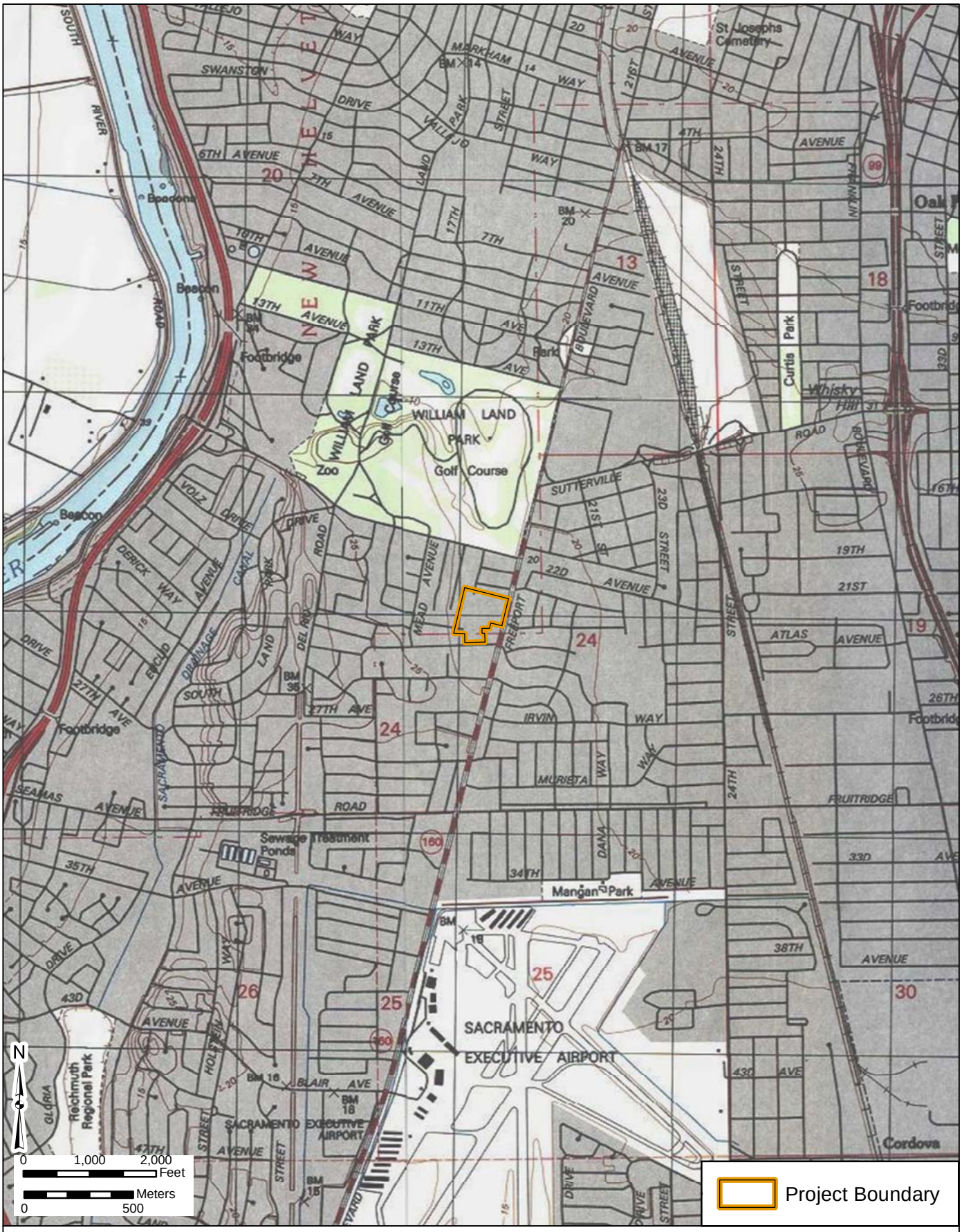
Subject: ***Cultural Resources Report for the Land Park Commercial Center EIR Project, Sacramento, California***

Dear Mr. Maffia:

Dudek was retained by Mo Capital to prepare a cultural resources study for the Land Park Commercial Center Project (proposed project). This study includes a records search of the Northern California Information Center, Native American coordination, a field survey, archival/building development research, and a historic resource evaluation for the Capital Nursery property located at 4700 Freeport Boulevard and two residential properties located at 1913 and 1919 Wentworth Avenue in the City of Sacramento, California. This study was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) and the Secretary of the Interior's Standards for preparation of an evaluation. This report and the associated property evaluations were prepared by Dudek Architectural Historian Salli Hosseini, MAHP, with review from Dudek Senior Architectural Historian, Samantha Murray, MA, Registered Professional Archaeologist (RPA). Both Ms. Hosseini and Ms. Murray meet the Secretary of the Interior's Professional Qualification Standards (PQS) for architectural history. Ms. Murray also meets the Secretary of the Interior's PQS for archaeology.

1 PROJECT LOCATION

The project area consists of three properties located at 4700 Freeport Boulevard (Assessor's Parcel Number (APN) 017-0121-001), 1913 Wentworth Avenue (APN 017-0121-010), and 1919 Wentworth Avenue (APN 017-0121-009) in the City of Sacramento, California. The project area is located within the Land Park neighborhood bounded by residential properties to the north, Wentworth Avenue to the south, Freeport Boulevard to the east, and residential properties to the west. The subject property falls within the U.S. Geological Survey (USGS) 7.5-minute Sacramento East quadrangle at Township 8 North, Range 4 East, in Section 24 (Figure 1).



SOURCE: USGS Topo 7.5 Minute Series - Sacramento West & Sacramento East Quadrangle
Township 8N / Range 4E / Section 24

Project Location Map

LAND PARK COMMERCIAL CENTER

2 PROJECT DESCRIPTION

MO Capital, the project applicant, is requesting entitlements to construct a commercial project anchored by a grocery store (Raley's). The proposed project would reuse an existing developed area within the Land Park Community Plan Area. The project area encompasses 9.87 acres fronting on Wentworth Avenue and Freeport Boulevard. Existing buildings and greenhouses that were part of the former Capital Nursery (closed in 2012) along Freeport Boulevard would be demolished, along with two small vacant residences located on Wentworth Avenue. The project would construct a new one-story 55,000-square-foot grocery store and five freestanding buildings that would provide approximately 53,980 square feet of retail uses. A total of 439 on-site surface parking spaces would be provided along with new landscaping and other public amenities. The existing Raley's store on Freeport Boulevard would relocate to the new location.

Primary vehicle access would be provided from Freeport Boulevard with a secondary access off Wentworth Avenue. The loading docks and deliveries for the grocery store would take place along the south side of the building. Truck access would be from Wentworth Avenue. Dedicated sidewalks for pedestrians and access for bicyclists would be provided from Freeport Boulevard and Wentworth Avenue, and bicycle racks would be provided throughout the project site.

3 REGULATORY SETTING

3.1 Federal

While there is no federal nexus for this project, the National Register of Historic Places (NRHP) designation criteria were considered in the evaluation of historical resources for the proposed project. The NRHP was established by the National Historic Preservation Act of 1966, as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."

National Register of Historic Places

The quality of *significance* in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that meet at least one of the following criteria:

A. Are associated with events that have made a significant contribution to the broad patterns of our history.

B. Are associated with the lives of persons significant in our past.

C. Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

D. Have yielded, or may be likely to yield, information important in prehistory or history.

3.2 State

California Register of Historical Resources

In California, the term "historical resource" includes, but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code (PRC) Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, listed below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be

demonstrated that sufficient time has passed to understand its historical importance (14 California Code of Regulations (CCR) 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

The following CEQA statutes under the PRC and CEQA Guidelines are relevant to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a

"historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (14 CCR 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project would cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2(a), (b), and (c)).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); 14 CCR 15064.5(c)(4). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074(c), 21083.2(h)), further consideration of significant impacts is required.

Section 15064.5 of the CEQA Guidelines assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that human remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (Section 7050.5c). The NAHC will notify the most likely descendant. With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by the NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

3.3 Local

Sacramento Preservation Ordinance (Chapter 17.604, Historic Preservation)

Sacramento Register 17.604.200

The "Historic Preservation" chapter of the Sacramento City Code includes the following guidance regarding archaeological and historic resources:

A. The ordinances adopting designations and deletions of landmarks, contributing resources and historic districts shall be known, collectively, as the "Sacramento register of historic and cultural resources" or the "Sacramento register."

B. The original Sacramento register and any subsequent amendments, inclusions, or deletions thereto shall be on file with the city clerk.

C. All structures and preservation areas designated on the official register as of the date of enactment of Ordinance No. 2001-027 and on the Sacramento register as of the date of enactment of the ordinance codified in this chapter are included on the Sacramento register of historic and cultural resources (Sacramento register). All structures individually designated on the official register as essential or priority structures are designated landmarks on the Sacramento register, and shall be subject to the restrictions and conditions applicable to landmarks. All geographic areas previously designated as preservation areas designated on the official register are designated as historic districts on the Sacramento register, and are subject to the restrictions and conditions applicable to historic districts.

D. The preservation director shall take appropriate steps to ensure that the Sacramento register is properly maintained, regularly updated, distributed to city staff as necessary to carry out the purpose and intent of this chapter, and made available to the public. The preservation director shall also take appropriate steps to maintain and regularly update a list or compilation of resources within the city that are on the California Register of Historical Resources or the National Register of Historic Places, and to make the list or compilation available for public review and use. (Ord. 2013-0020 § 1; Ord. 2013-0007 § 1).

Criteria and Requirements for Listing on, and Deletion from, the Sacramento Register 17.604.210

The criteria and requirements for listing on, or deletion from, the Sacramento register as a landmark, historic district or contributing resource are as follows:

A. Listing on the Sacramento register—Landmarks. A nominated resource shall be listed on the Sacramento register as a landmark if the city council finds, after holding the hearing required by this chapter, that all of the requirements set forth below are satisfied:

1. Requirements.

a. The nominated resource meets one or more of the following criteria:

i. It is associated with events that have made a significant contribution to the broad patterns of the history of the city, the region, the state or the nation;

ii. It is associated with the lives of persons significant in the city's past;

iii. It embodies the distinctive characteristics of a type, period or method of construction;

iv. It represents the work of an important creative individual or master;

v. It possesses high artistic values; or

vi. It has yielded, or may be likely to yield, information important in the prehistory or history of the city, the region, the state or the nation;

b. The nominated resource has integrity of location, design, setting, materials, workmanship and association. Integrity shall be judged with reference to the particular criterion or criteria specified in subsection A.1.a of this section;

c. The nominated resource has significant historic or architectural worth, and its designation as a landmark is reasonable, appropriate and necessary to promote, protect and further the goals and purposes of this chapter.

2. Factors to be considered. In determining whether to list a nominated resource on the Sacramento register as a landmark, the factors below shall be considered.

a. A structure removed from its original location is eligible if it is significant primarily for its architectural value or it is the most important surviving structure associated with a historic person or event.

b. A birthplace or grave is eligible if it is that of a historical figure of outstanding importance and there is no other appropriate site or structure directly associated with his or her productive life.

c. A reconstructed building is eligible if the reconstruction is historically accurate, if the structure is presented in a dignified manner as part of a restoration master plan, and if no other original structure survives that has the same association.

d. Properties that are primarily commemorative in intent are eligible if design, age, tradition, or symbolic value invests such properties with their own historical significance.

e. Properties achieving significance within the past 50 years are eligible if such properties are of exceptional importance.

B. Listing on the Sacramento register—Historic districts. A geographic area nominated as a historic district shall be listed on the Sacramento register as a historic district if the city council finds, after holding the hearing required by this chapter, that all of the requirements set forth below are satisfied:

1. Requirements.

a. The area is a geographically definable area; or

b. The area possesses either:

i. A significant concentration or continuity of buildings unified by: (A) past events or (B) aesthetically by plan or physical development; or

ii. The area is associated with an event, person, or period significant or important to city history; or

c. The designation of the geographic area as a historic district is reasonable, appropriate and necessary to protect, promote and further the goals and purposes of this chapter and is not inconsistent with other goals and policies of the city.

2. Factors to be considered. In determining whether to list a geographic area on the Sacramento register as a historic district, the following factors shall be considered:

a. A historic district should have integrity of design, setting, materials, workmanship and association;

b. The collective historic value of the buildings and structures in a historic district taken together may be greater than the historic value of each individual building or structure.

C. Listing on the Sacramento register—Contributing resources. A nominated resource shall be listed on the Sacramento register as a contributing resource if the council finds, after holding the hearing required by this chapter, that all of the following requirements are satisfied:

1. The nominated resource is within a historic district;
2. The nominated resource either embodies the significant features and characteristics of the historic district or adds to the historical associations, historical architectural qualities or archaeological values identified for the historic district;
3. The nominated resource was present during the period of historical significance of the historic district and relates to the documented historical significance of the historic district;
4. The nominated resource either possesses historic integrity or is capable of yielding important information about the period of historical significance of the historic district; and
5. The nominated resource has important historic or architectural worth, and its designation as a contributing resource is reasonable, appropriate and necessary to protect, promote and further the goals and purposes of this chapter.

D. Deletions from the Sacramento register. An application to delete a listed historic resource from the Sacramento register may be approved if the city council finds, after holding the hearings required by this chapter, that the listed historic resource no longer meets the requirements set forth above; provided that where a landmark or contributing resource is proposed for deletion due to a loss of integrity, the loss of integrity was not the result of any illegal act or willful neglect by the owner or agent of the owner. (Ord. 2013-0020 § 1; Ord. 2013-0007 § 1).

Sacramento 2035 General Plan

Part Two: Citywide Goals and Policies

The "Historic and Cultural Resources" element of the General Plan describes the City's goals and policy's for:

- Citywide Historic and Cultural Preservation (HCR1): Policies in this section provide for identification, protection, and assistance in the preservation of historic and cultural resources. The policies maintain a citywide program consistent with the State and Federal

Certified Local Government program and State laws and regulations related to historic and cultural resources.

- Identification and Preservation (HCR2): Policies in this section provide for the identification of historic and cultural resources and ensure that City, State, and Federal historic preservation laws, regulations, and codes are implemented. Policies support the City actively pursuing the identification, protection, and maintenance of historic and cultural resources, including consultation with appropriate organizations and individuals early in the planning and development process to identify opportunities and minimize potential impacts to historic and cultural resources.
- Public Awareness and Appreciation (HCR3): Policies in this section support and provide for public education and appreciation of the value of Sacramento's historic and cultural resources, as well as City coordination with other entities to help develop and promote the preservation of Sacramento's historic and cultural resources.

4 FIELD AND RESEARCH METHODS

4.1 Field Survey

Dudek conducted a pedestrian survey of the project area on September 17, 2015. The purpose of the survey was to identify and record any potential historical resources located within the project area. The survey involved walking all accessible portions of the project area and taking detailed notes and photographs of the project area and its surroundings. Because the project area is entirely developed and contains no exposed sediment, intensive-level archaeological survey methods were not warranted. Three properties were identified as requiring recordation and evaluation on the appropriate State of California Department of Parks and Recreation Series 523 forms (see Appendix A): two single-family residences located at 1913 and 1919 Wentworth Avenue, and the former Capital Nursery property located at 4700 Freeport Boulevard. Photographs were taken with a digital camera. All field notes, photographs, and records related to the current study are on file with Dudek.

4.2 Archival and Building Development Research

Dudek conducted archival and building development research on the three parcels to develop a site-specific history for the project area. This research involved contacting the City of Sacramento Community Development Department, the Center for Sacramento History, the Sacramento County Assessor's Office, the Sacramento Public Library, and the Los Angeles Public Library. Dudek reviewed all available building permit records and past

ownership/occupant records. Books and newspaper articles were reviewed to develop a general history of the Land Park neighborhood and the City. The original construction date of the buildings provided by the Sacramento County Assessor's online Property Assessment Information System was confirmed through review of building permits and historic aerial photographs. Dudek also consulted historic maps and aerial photographs to further understand the development of the project area and surrounding neighborhood (NETR 2011). Sanborn Fire Insurance Maps were not available for the project area.

4.3 Records Search

In October 2014, Dudek requested a California Historical Resources Information System (CHRIS) records search from the North Central Information Center (NCIC), which houses cultural resource records for Sacramento County. Dudek received the results of the records search on November 18, 2014 (Confidential Appendix B). The search included any previously recorded cultural resources (including archaeological and historic built environment resources) and investigations within the project area, including within a 1-mile radius. The records search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list.

Previously Conducted Studies within 1-Mile of the Project Area

A total of 23 cultural resources studies were previously conducted within a 1-mile radius of the project area (Table 1). None of these studies overlap the current project area. Confidential Appendix B provides maps of all previously conducted studies within the 1-mile radius and a complete bibliography from the NCIC.

Table 1
Previously Conducted Cultural Resource Studies within 1-Mile of the Project Area

NCIC Report Number	Title of Study	Author	Year	Proximity to Project Area
000055	An Archaeological Reconnaissance of Possible Sewer Lines, Connectors and Storage Ponds in the City of Sacramento and Eastern Yolo Counties.	Johnson, Jerald J.	1976	Outside
001997	Pacific Bell Mobile Services: 3225 Freeport Blvd., Sacramento, Sacramento County: Site # SA-130-01.	Derr, Eleanor	1998	Outside
001998	Pacific Bell Mobile Services: 4520 Franklin Blvd. (at 21st street), Sacramento, Sacramento County: Site # SA-033-C1.	Derr, Eleanor	1998	Outside

Table 1
Previously Conducted Cultural Resource Studies within 1-Mile of the Project Area

NCIC Report Number	Title of Study	Author	Year	Proximity to Project Area
002028	Cultural Resources Investigation of the Captains Table Marina, Sacramento, Sacramento County, California	John Dougherty	1998	Outside
002029	An Archaeological Survey of the Excursion Train Extension Project, Sacramento County, California.	Kenneth McIvers	1987	Outside
002357	Archaeological Inventory Survey, Proposed William Land Park Sewer Relief Project, City of Sacramento, Sacramento County, California	Jensen & Associates	2000	Outside
003336	HABS Sacramento Junior College Library (Sacramento City College Learning Resources Center) (HABS No. CA-2659-A)	PAR Environmental Services, INC.	1996	Outside
003368	Cultural Resources Monitoring Report for the SMUD Cogeneration Pipeline Project	Melton, Laura June	1995	Outside
003489	Report on the First Phase of Archaeological Survey For the Proposed SMUD Gas Pipeline Between Winters and Sacramento, Yolo and Sacramento Counties	Waechter, Sharon	1993	Outside
003489B	Addendum to the Report on the Archaeological Survey for the Proposed SMUD Gas Pipeline Between Winters and Sacramento, Yolo and Sacramento Counties	Waechter, Sharon	1993	Outside
004206	Intensive Cultural Resources Survey and National Register Evaluation: Sacramento Urban Area Flood Control Project	Bouey, Paul	1990	Outside
004206B	Sacramento Urban Area Flood Control Project Big Pocket Explorations and Piezometer Installation Study	Toland, Tanis	2005	Outside
004398	Historical Resource Reconnaissance of a Proposed Nextel Communications Wireless Telecommunications Service Facility 3581 23RD Street	Billat, Lorna	2001	Outside
005814	Cultural Resources Survey Report Level (3) Long Haul Fiber Optic Project.	Munns, Ann and Turner, Rhonda R.	2000	Outside
006912	NHRP Evaluation & Proposed Cell Tower Finding of Effects Statement- Sacramento City College Municipal Water Tower, 3581 23rd Street, Sacramento, CA 95818	Tinsley, Wendy L.	2005	Outside
009423	Cultural Resources Baseline Literature Review for the Urban Levee Project	Joanne S. Grant	2008	Outside
010112	T-Mobile SC25428B (Anderson Raw Land)	Wayne Bonner	2008	Outside
010299	Cultural Resources Investigation for Clearwire Project CA-SAC0529A, 4970 Freeport Blvd	Carolyn Losee	2009	Outside

Table 1
Previously Conducted Cultural Resource Studies within 1-Mile of the Project Area

NCIC Report Number	Title of Study	Author	Year	Proximity to Project Area
010572	Cultural Resources Study of the Sign Company Project Clearwire Site No. CA-SAC0727	Dana E. Supernowicz	2010	Outside
010820	Verizon Cellular Communications Tower Site - City College LTE 3581 23rd Street (APN: 013- 0197-016) Sacramento, CA 95818	Hatoff, Brian	2010	Outside
011025	Cultural Landscape Survey and Evaluation of William Land Park City of Sacramento, California	Mead & Hunt and PGA Design, Inc.	2012	Outside
011176	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC06160A (Fruitridge & Freeport), 1900 Fruitridge Road, Sacramento, Sacramento County, California	Carrie Wills	2012	Outside
011240	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SC06160A (Fruitridge & Freeport), 1900 Fruitridge Road, Sacramento, Sacramento County, California	Kathleen Crawford	2012	Outside

Previously Recorded Resources within 1-Mile of the Project Area

The records search identified 14 previously recorded resources within a 1-mile radius of the project area (Table 2). None of these resources are located within the project area. In all, 3 of these resources are prehistoric and 11 are historic. The closest previously recorded resources to the project area include:

- Cook Co. (P-34-003459) located northeast of the project area on the corner of Freeport Boulevard and 20th Avenue. The property was found ineligible for the NRHP, but of local significance in 1985.
- William Land Park (P-34-003500) located north of the project area on the corner of Freeport Boulevard and 13th Avenue. The property was found ineligible for the NRHP in 1985.
- Riverside (P-34-000062) located west of the project area on the corner of McClatchy Way and Riverside Drive. The property is an archaeological site that does not appear to have been formally evaluated.

The resource database print-out sheet and maps of all previously recorded resources within a 1-mile radius of the project area is included in Confidential Appendix B.

Table 2
Previously Recorded Cultural Resources within 1 Mile of the Project Area

Primary Number	Site Type	Resource Description	NRHP Eligibility Status	Recorded By and Year	Proximity to Project Area
P-34-000055	Prehistoric	Habitation mound, Sutterville Road	Indeterminate	Bouey, 1934, 1990	Outside
P-34-000062	Prehistoric	Village site mound, Corner of McClatchy Way and Riverside Drive	Indeterminate	Heizer, 1934	Outside
P-34-000094	Prehistoric	Temporary camp site, not a mound, 300 yards south of Sutterville Road at Southern Pacific Railroad crossing	Indeterminate	Riddell, F.A., (undated)	Outside
P-34-000531	Historic	Street furniture, curbs "Land Park Curbs," road-side curbs adjacent to William Land Park Drive and other Park roads	Indeterminate	Jensen, Peter, 1999	Outside
P-34-001427	Historic	Sacramento City College Municipal Water Tower, 3581 23rd Street	Ineligible	Tinsley, Wendy, 2011	Outside
P-34-002372	Historic	Sacramento City College Historic District, 3835 Freeport Boulevard	Listed	Caesar, C., 1985 Barudoni Deglow, et al., 1993	Outside
P-34-002855	Historic	Sacramento Stadium/Hughes Stadium, 3835 Freeport Boulevard	Indeterminate	Kreutzberg, Hans	Outside
P-34-003459	Historic	Cook Co., 4305 Freeport Boulevard	Ineligible	Caesar, C., 1985	Outside
P-34-003500	Historic	William Land Park, Sutterville Road and 17th Avenue	Indeterminate	Caesar, C., 1985	Outside
P-34-003538	Historic	Fasto Foto, House of Custom Tailoring, Greenbaum & Whitelaw, architects, 2100 11th Avenue	Indeterminate	Caesar, C., 1985	Outside
P-34-003891	Historic	Camp Union, Sutterville Road	Indeterminate	Elder, Sandy, 1979	Outside
P-34-004259	Historic	Weidner Architectural Signage Building, 5001 24th Street	Ineligible	Supernowicz, Dana E., 2010	Outside
P-34-004475	Historic	Building 4/City of Sacramento Corporation Yard, 5730 24th Street	Ineligible	Supernowicz, Dana E., 2011	Outside
P-34-004529	Historic	T-Mobile West LLC SC06160A/Fruitridge & Freeport, 1900 Fruitridge Road	Ineligible	Crawford, K.A., 2012	Outside

4.4 Native American Coordination

As part of the process of identifying cultural resources within or near the project area, Dudek contacted the NAHC to request a review of their Sacred Lands File. The NAHC emailed a response on November 3, 2014 (Appendix C), stating that the Sacred Lands File search "failed to indicate the presence of Native American cultural resources in the immediate project area." The NAHC also provided a contact list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. Dudek prepared and mailed letters (see Appendix C) to each of the NAHC-listed contacts on September 22, 2015, requesting information regarding any Native American cultural resources within or immediately adjacent to the project area. To date, Dudek has not received any responses. Dudek's letter also reminded tribes to contact the CEQA lead agency if they wish to receive Assembly Bill (AB) 52 notification.

5 HISTORIC CONTEXT

5.1 Early Sacramento

John Sutter arrived on the shore of the American River near its confluence with the Sacramento River in 1839. Sutter and his landing party established Sutter's Fort, with the promise of a Mexican land grant. The settlement's growth and permanency attracted other businessmen seeking opportunities. Sutter and the businessmen created a commercial center in the area, but it was not until the Gold Rush in 1848 that the City of Sacramento was created. The gold was discovered by James Marshall in the nearby foothills. Eager to take advantage of the convenient waterfront location, local merchant Sam Brannan rushed to open a store near the Sacramento River (Legends of America 2003). The area originally called Sutter's Embarcadero was soon known as the City of Sacramento. The City swiftly grew into a trading center for miners supplying themselves for the gold fields.

The City of Sacramento was incorporated in 1850, and the name was taken from a nearby river, meaning "Holy Sacrament" (City-Data 2009). The waterfront location of early Sacramento made it a prime commercial town; however, severe flooding and repeating fires presented real threats to the area. The first devastating flood hit the newly built city in 1850, and a second hit in 1852 when high water wiped out the area. Around the same time, repeated fires engulfed the City's rapidly constructed buildings composed mainly of wood and canvas. Therefore, it was apparent extreme measures had to be taken to save Sacramento. A mammoth project was proposed in 1853 to raise the City above the flood level. While ambitious, this proposal was expensive and was ultimately declined. Nonetheless, the City survived and became the capital of California in

1854. Construction of the Sacramento Valley Railroad began during the mid-1850s, with the financial backing of businessmen known as the Big Four: Collis P. Huntington, Mark Hopkins, Charles Crocker, and Leland Stanford. Not long after, Sacramento became the terminus of California's first railroad. The Pony Express and the transcontinental telegraph followed. With another devastating flood that swept the area in 1862, the previously proposed project of raising the City above flood level resurfaced. For the next few years, thousands of cubic yards of earth were brought in on wagons, and the process of raising the street level began (Legends of America 2003). With the Central Pacific Railroad joining the east and west coasts in 1869, the Sacramento farmers began shipping their produce to the east (City-Data 2009).

As the Gold Rush declined, Sacramento became the center for the developing commercial agriculture industry (Legends of America 2003). To prepare planes to fly to Europe during World War I, Mather Field was established in 1937 and became an important base of operations during World War II. The military installations during both wars brought an influx of people to the area, many of whom stayed after World War II and prompted the development of the private sector (City-Data 2009). Following World War II, the automobile-oriented housing development soared and the remaining agricultural uses were converted to tract housing. With the development of the suburbs and the population moving outside of the City, downtown Sacramento fell into decay by the 1950s (City-Data 2009). In the 1960s, the W-X (Highway 50) and Highway 99 freeways were built, separating neighborhoods such as Land Park from Midtown, Downtown, and Oak Park (City of Sacramento 2009).

During the twenty-first century, when modernization came to the City, the center of the commercial district gradually moved east and the original part of Sacramento on Sutter's Embarcadero became a slum, known as the worst skid row west of Chicago. A plan was proposed to redevelop this area in the mid-1960s, following which the first historic district in the West was created and became known as Old Sacramento.

5.2 Land Park Neighborhood

The Land Park neighborhood is located south of Broadway, east of Riverside Boulevard, west of Freeport Boulevard, and north of Sutterville Road.

The Land Park neighborhood in Sacramento was originally a part of John Sutter's Mexican land grant known as Helvetia. As John Sutter's fort grew, he aimed to relocate the population center by building a town on high, flood-proof lands in the southern section of the present Land Park area. A town named Sutterville was mapped out about 3 miles south of the current City of Sacramento by an engineer Sutter had hired. Due to its location near the Sacramento River,

Sutterville out did the upriver port of Sacramento for several years. The town soon had a hotel and several saloons and businesses, including a ship's carpenter, doctor, and brewery. Native Americans, Gold Rush chasers, farmers, soldiers, cattle ranchers, and saloonkeepers spent time in the dusty streets of Sutterville from the 1840s to the 1900s. In the 1860s, the current Sacramento Zoo was the site of a Civil War military base known as Camp Union. However, situations involving Sutter's incompetent money handling and the Marshall gold discovery reset the focus of development toward Sacramento, and Sutterville was unable to fulfill its promise as a thriving town (Isidro 2005).

Pioneer ranchers, hop growers, dairymen, and homesteaders who enjoyed the proximity to the City and the river populated the large tracts of land in the southern area currently known as Land Park. Early settlers resided around Riverside Road, which was eventually annexed to the City. The rest of the population resided along Freeport Road or Sutterville Road. Early families had various businesses along the main roads, among which were the Swanston family who raised cattle along the Riverside Road. Charles Swanston, an Ohio native, was one of Sacramento's original pioneers who came to California in 1881. He founded C. Swanston and Son Meat Packing Company in 1886. His son George Swanston was instrumental in promoting the southern Sacramento area as the site for William Land Park. Others included the Cavanaugh family who ran the riverside Union Dairy on Swanston Drive.

Despite its inhabitants, the Land Park area used to have an odoriferous reputation. For years the City of Sacramento deposited its raw sewage across its city line at Y Street via a series of drainage ditches and sloughs. Furthermore, the region's three cemeteries, including Sacramento's old city cemetery, where thousands of residents were entombed, added to the area's lack of appeal. The land south of Y Street was considered the flood spill for Sacramento. During flood events the levees would open to save the Sacramento city proper. Reaching downtown was a difficult task, especially for residents of the south area who had to drive for miles around the inundated lands. On the other hand, unregulated saloons, bars, and speakeasies blossomed in the southern neighborhoods. During local brewery wars, a "whisper campaign" resisted that the old Sutterville Brewery used slough water for its ale. Also, rumors circulated that a brewery worker drowned in a barrel and was brewed into beer. A notorious roadhouse known as the Bush Quinn speakeasy at the corner of Sutterville Road and Riverside Boulevard reportedly served liquor to minors and girls, thereby ruining Land Park's reputation prior to its development (Isidro 2005).

Businessman and hotel owner William Land, who had made his fortune in Sacramento, bequeathed $250,000 to the City in 1911 for development of a public park in Sacramento (Sacramento Bee 2012a). The 238-acre plot of land was located north of Sutterville Road and

was purchased in 1918 for $147,000. Previously, portions of the land had been used by the City to deposit raw sewage (Sacramento Park Neighborhoods n.d.). Initially, residents were opposed to the development of a park in the present-day Land Park area and instead elected to build the park in Del Paso. The Sacramento Bee also opposed the park by running several editorials claiming that grass would not grow in that area, let alone a tree. The articles claimed that the area was simply a "swamp and hardpan" (Isidro 2005). Nonetheless, on an appeal in 1922, the court overturned the public referendum and approved the original contract, allowing development of the park to proceed. Land Park followed the same general development process as other parks in the region, including East Sacramento and Curtis Park. The development of William Land Park revived the appeal of the area as a residential neighborhood. Larger parcels were subdivided into smaller tracts, which were sold to individual builders for small-scale developments. Soon after the grading and sidewalk construction were completed, trees were planted along the wide-curving boulevards and major entrance roads (Sacramento Park Neighborhoods n.d.). Between the 1920s and 1940s, luxury homes were built along the streets surrounding the park. The tracts were not coordinated for design consistency, and each house was designed to have its own individual character. The Land Park area grew slowly and steadily until World War II, when a demand for housing converted hop fields to housing tracts, resulting in the development of neighborhoods such as College Tract, Swanston tract, and Sutterville Heights (Isidro 2005).

Before long, the once odoriferous Land Park had transformed into a desirable residential neighborhood with distinctive architecture and tree-lined streets. The area was described in a home marketing advertisement as "the perfect environment outside in sunshine and fresh air, with healthful surroundings" (Isidro 2005). The residential area of Land Park became dominated by a mixture of smaller houses and estate-like homes fronting William Land Park. Most of the commercial developments within Land Park are located along Freeport Boulevard, Broadway, and Riverside Boulevard. Compared to other park neighborhoods in Sacramento, Land Park has the highest percentage of parkland (Sacramento Park Neighborhoods n.d.). Land Park has been home to many prominent citizens, including Supreme Court Justice Anthony Kennedy, author Joan Didion, painter Thomas Kincade, and numerous politicians amongst others (Isidro 2005).

5.3 Capital Nursery Company

Charles G. and Eugene R. Armstrong (the Armstrong brothers) founded the Capital Nursery Co. in 1936. The family owned company functioned as a nursery and served the Sacramento region until 2012 (Sacramento Bee 2014). The flagship store on Freeport Boulevard began operating in 1936, followed by the Sunrise Boulevard location in 1963, and the Elk Grove store in 1984 (Sacramento Bee 2012b). Chuck Armstrong, whose father and uncle founded the Nursery, owned the company prior to his retirement in 2012 (Sacramento Bee 2012c). Capital Nursery has

been identified by many Sacramento residents as a local treasure and institution, as it had a great influence on local gardens and gardeners for over 60 years. For many locals, Capital Nursery was more than a nursery; it was also a place to go for landscape design and expert horticulture advice. Capital Nursery was the main source of landscaping and garden design for generations of Sacramento residents, and the terms "Sacramento Gardening" is too often associated with "Capital Nursery". Shopping at the Capital Nursery had become a family tradition for many local residents. A local newspaper article reports "every home in Sacramento has at least one plant from Capital Nursery" (Sacramento Bee 2012d). For decades the Capital Nursery Company was the only local nursery that offered a wide variety of trees, shrubs, perennials and annuals (Sacramento Bee 2012d). In 2012, the company closed all of its locations, including the flagship store in Sacramento on Freeport Boulevard (project area), Citrus Heights, Elk Grove, and Rocklin (Sacramento Bee 2014).

6 DEVELOPMENT HISTORY OF THE PROJECT AREA

Historical aerial photographs of the project area were available for the years 1947, 1957, 1964, 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 (NETR 2011). By 1947, the area surrounding the project area was partially developed. By that time, most development appears to be residential and located to the north, south, and southeast of the project area. As evident in 1947 aerials, the parcels west and northwest of the project area were a mixture of residential and agricultural developments. The parcel located immediately across Freeport Boulevard was mostly undeveloped with the exception of some residential development to the south. The project area was partially developed by 1947 and contained 6 structures. Historic aerial photographs confirm the construction of Buildings 2 and 12 (see Figure 2 for building numbers) by 1947. By 1957, the Land Park neighborhood has been fully developed. The area immediately surrounding the project area was fully developed with single-family residences, and the once vacant land on the east side of Freeport Boulevard was developed with new commercial properties. The parcels west and northwest of the project area were fully developed and mostly contained residential buildings. The project area was further developed by 1957, and small ancillary structures, no longer extant, were developed throughout the project area, at the site of current Buildings 4, 5, 7, 8, 13, 14 and 15. By that time, two structures (no longer extant) stood where Buildings 10 and 11 currently are. Historic aerials confirm the construction of Buildings 1, 6 and 9 by 1957. By 1964, a small ancillary structure appears west of Building 12. Historic aerials from 1966 do not reveal any changes to the project area or the surrounding area. By 1993, Buildings 7 and 8 replaced the two original structures, and Buildings 4, 5 and 16 were erected. By that time the ancillary structure previously west of Building 12 was demolished. Also as evident in 1993 aerials, Buildings 13,

14 and 17 were erected. The same aerials do not reveal any changes to the surrounding area. Photographs from 1998 reveal the construction of Building 15. Historic aerials from 2002 reveal construction of Building 3. Historical aerials from 2005, 2009, 2010 and 2012 do not reveal any changes to the project area or the surrounding area.

DUDEK

SOURCE: Bing Maps

Land Park Raley's

FIGURE 2

On Site Building Footprints

Historic aerial photographs from 1998, 2002, 2005, 2009, 2010, and 2012 do not reveal any changes to the surrounding, or the project area. Currently, the project area includes 16 vacant structures that consist of the former main store building (Building 12) and numerous warehouse and ancillary buildings, as well as two residential properties, Building 1 (1913 Wentworth Avenue) and Building 2 (1919 Wentworth Avenue), from various time periods. Building 12 (4700 Freeport Boulevard) is a commercial/industrial structure that functioned as one of the main stores, and was among the first structures built in the project area. Buildings 1 is a single-family residence that was owned by the Capital Nursery (Permit no. 9716104). Building 2 is also a single-family residence.

7 PROPERTY SIGNIFICANCE EVALUATIONS

Although building development research suggests Buildings 1, 2, 6, 9 and 12 were built prior to 1964, the field survey revealed that Buildings 6 and 9 have been demolished and replaced (date unknown) since the initial date of construction. Building development research and archival research failed to reveal any information on ancillary Buildings 6 and 9 and their construction and use. Building development research reveals that ancillary Buildings 3, 4, 5, 7, 8, 10, 11, 13, 14, 15, 16 and 17 were constructed less than 45 years ago (NETR 2011). As such, those buildings are not considered historic and were not evaluated for this study.

7.1 4700 Freeport Boulevard

Property Description

The property at 4700 Freeport Boulevard (the subject property) is located on APN 017-0121-001. The subject property is a Vernacular-style industrial/commercial structure built in 1946 (Sacramento County Assessor). At the front entrance (along Freeport Boulevard) the subject property is sheathed in lath and red stones and consists of the octagonal-shaped open-air rotunda flanked on either side by open-air spaces (Photograph 1). Featured on the octagonal-shaped rotunda is a wing sheathed in red stones, featuring multipaneled windows, a hipped roof, and two double-doors. Two triangular planters are located on the concrete surface in front of this elevation. A paved parking area runs along this section of the structure. The subject property also consists of a garden shop (located within the rotunda) (Photograph 2), a greenhouse (west of the rotunda), a restroom (southwest of the rotunda), and multiple indoor/outdoor hallways, which house the garden nursery(s) (south, west and southwest of the rotunda). The south hallways are partially covered and consist of built-in wooden tables attached to square columns, and have paved walkways (Photograph 3). The west hallways are paved and feature trusses and side openings covered with removable fiberglass panels (Photograph 4). An enclosed structure (assumed as the 1962 office addition) is located at the end of the south-west hallway. This office

space features low ceilings, simple load-bearing columns and built-in cabinets, and appears in poor condition (Photograph 5). The greenhouses feature multiple fenestrations, fiberglass panels, and built-in tables of bedding plants and flats, and are sheathed in a combination of steel plates, slats, and drywalls (Photograph 6). The restroom structure consists of a hipped-roof, and is clad in smooth stucco. This structure features multiple fenestrations, including single doors and various sized windows (Photograph 7).

A 1956 aerial photograph of the subject property on file with the City indicates the building has been subject to multiple exterior alterations on its south, west, and southwest since that time period (Capital Nursery Catalog 1956). Building development research confirms these alterations. Building records reveal the lath house (south) was constructed in 1958 (Permit No. C-7974). Building permits dating to 1960 reveal that a nursery rain cover (south) was constructed (D-7380) and was enclosed in 1961 (D-7577). In 1962, the aluminum and glass greenhouse (west) was constructed (E-2625). An office addition (southwest) took place to the garden nursery (E-1725) in 1962. Building permits reveal the garden shop was re-roofed in 1973 (A-8156), and a heating, ventilation, and air conditioning (HVAC) system was installed in 1975 (C-5956). As revealed by 1991 (A-8298) and 1992 (B-2340) building permits, the garden shop was remodeled and an HVAC system was installed in 1992 (B-6291); another remodeling took place in 1994 (949879).

Photograph 1. Overview of Front Entrance (view to southwest)

Photograph 2. Partial view of the garden shop (view to northeast)

Photograph 3. Overview of a south hallway (view to south)

Photograph 4. Overview of a west hallway (view to west)

Photograph 5. Partial view of the 1962 Office Addition (view to southwest)

Photograph 6. Overview of Greenhouse Interior (view to east)

Photograph 7. Overview of Restroom Building (view to southwest)

Historical Significance

Capital Nursery has made a name for itself in the Sacramento region for providing exceptional customer service, knowledgeable staff, quality products, and a large selection of plants. The Land Park location has become a fixture of the community, having occupied its location on Freeport Boulevard for nearly 80 years. It has served as a mainstay for home gardeners and has earned the sentiment of local families throughout the Land Park neighborhood, who have decades of memories shopping at the Freeport Boulevard location. However, archival research failed to demonstrate any associations with events that have contributed to broad patterns of history or development within the Land Park neighborhood or the City of Sacramento. Capital Nursery was a chain with several locations in the Sacramento region, including Citrus Heights, Elk Grove, and Rocklin. While the Land Park store was known as the flagship location, there is no evidence to indicate that the sentiment felt for Capital Nursery among home gardeners in Land Park is unique to the Freeport Boulevard store. As an example, one article says of the Elk Grove location: "The Elk Grove Boulevard location was so much a part of the community that local commonly referred to Capital as "the Elk Grove nursery" (Sacramento Bee 2014). This type of sentiment is certainly a testament to Capital Nursery's quality of service, longevity, and commitment to its customers, but it is not an indication of the Freeport Boulevard location's association with important events. Further, there is no evidence that the store made important contributions to local landscaping in the surrounding residential neighborhood. While many residents purchased and installed plants from the Freeport Boulevard store and received landscaping instruction from Capital Nursery staff, a distinctive landscaping design aesthetic is not reflected by the Land Park neighborhood. As previously stated, Capital Nursery was a chain with other locations in the region that sold the same products and services. **For all these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria A/1, nor does it appear eligible under City Landmark Criteria i.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2, nor does it appear eligible under City Landmark Criteria ii.**

The subject property is an industrial/commercial structure in Vernacular architectural style that has been subject to a number of exterior and interior alterations since the initial date of its construction. Exterior alterations include construction of a lath house in 1958, a nursery rain cover in 1960, and the nursery rain cover's enclosure in 1961; construction of a greenhouse; and

addition of an office to the garden nursery in 1962, all of which have significantly compromised the integrity of the original design. Additionally, the garden shop was re-roofed in 1973 and an HVAC system was installed in 1975. Interior alterations include remodeling of the garden shop and an HVAC installation in 1992, followed by another remodeling in 1994. The additions and alterations over the years have compromised the integrity of the original design and materials of the subject property. Much of the subject property's original materials in the exterior and interior have been lost as a result of numerous alterations since the initial construction. Additionally, the subject property appears to be in poor condition; door and window frames have been removed in various parts of the interior (garden shop, restrooms, and greenhouse). The roof is also damaged in the restroom structure. Concrete pavements have either been removed or are in poor condition throughout most parts of the subject property; wood posts and beams appear in poor condition due to excessive moisture; and loose wires are dangling from the ceiling in various parts of the interior. Built-in cabinets and plant stands are damaged in parts of the interior. Additionally, wall surfaces are damaged, and a number of glass windows are missing and currently boarded up. Termites are present on wood elements throughout the structure, and vegetation is growing in-between concrete cracks. Furthermore, overgrown vegetation is present in most parts of the subject property. In summary, the subject property does not embody distinctive characteristics of a type, period, or method of construction, nor does it possess high artistic value.

Archival research reveals the subject property was designed by master architect Leonard Starks (Nacht and Lewis 2014a). Leonard F. Starks was born in Healdsburg, California. He studied architecture in San Francisco under a matching study system of the Paris Ecole des Beaux Arts. His first practice as a designer was on the Panama-pacific International Exposition in San Francisco (1913–1915). Following, he moved to Washington D.C. where he worked for architect Waddy Butler Wood, and then to New York City, where he initially worked as office manager for Thomas W. Lamb. Over the next few years, Starks assisted Lamb in design of several theaters across New York, including the Rivoli and the Capital. In 1921, he was sent to Sacramento to design a chain of Pacific Coast theaters for the Famous Players theater chain. However, when an antitrust action blocked that project, Starks gave up his position with Lamb and decided to remain in Sacramento where he formed his own architectural firm.

Between 1921 and 1941, Starks designed many of Sacramento's civic and commercial properties, including the Fox Senator Theater in Downtown Sacramento (1923), which was demolished in the 1970s. In partnership with E.C. Hemmings, Starks practiced for a year in Sacramento at Hemmings and Starks, Architects, in 1923 (PCAD 2015). Among his projects during that time were W.P. Fuller Company Building and the Elks Tower (1926) in Italian Renaissance style (Nacht and Lewis 2014b). Later in the 1920s, he was partner and practiced at

Starks and Flanders, Architects, in Sacramento, where he designed the addition to the California National Bank (1926), the no longer extant Alhambra Theater (1927) in Moorish style, the Blue Anchor Building (1931), the NRHP-listed Federal Building (1933) that exhibits several early twentieth century revival styles, and the NRHP-listed C.K. McClatchy High School (1949) in Classical Revival style. Starks and Flanders were also involved in numerous commercial and several private residential designs throughout Sacramento and San Joaquin Valleys. Starks was also among the architects of the NRHP-listed New Helvetia Historic District (1942) (Boghosian 2013).

Furthermore, Starks was the president of the Society of Sacramento Architects, an architectural organization for Sacramento architects in the early 1930s (PCAD 2015). Starks founded Starks Jozens & Nacht, which was later taken over by Daniel J. Nacht as today's Nacht & Lewis Architects (Forgotten Books 2013). Starks was a prominent Sacramento architect who designed some of the most important buildings in the downtown area. He is recognized for his theater design and civic projects, as well as a number of commercial projects in Sacramento. The architect's most noteworthy buildings (Elk Tower, Blue Anchor Building, Federal Building, and the C.K. McClatchy High School) are in early twentieth century period revival styles and exhibit elaborate ornamentation.

Considering the breadth of his career in the City of Sacramento, it is clear that Starks's most important and significant work occurred in the 1920s and 1930s in the downtown area. The subject property is a late, and not particularly noteworthy, example of Starks's work and does not possess the high artistic values that he is known for in the City of Sacramento. Therefore, the subject property is not eligible for representing the work of a master architect.

Furthermore, building development research suggests the 1962 office addition to the garden nursey was designed by master architect Dean Unger, however, archival and building development research failed to reveal the exact location of the addition. Dudek assumes the location of the addition at the end of the south-west hallway (see Photograph 5). Born in Sacramento, Dean Frederick Unger received a Master of Arts degree in Architecture from the University of California, Berkeley. After graduation he volunteered to serve in the Air Force during the Korean War and acted as a second lieutenant. Toward the end of the war, Unger returned to Sacramento where he worked as a draftsman for Ken Rickey and Fred Brooks. He established his solo practice Dean F. Unger, AIA, Inc. in 1959 in Sacramento. Unger served as president for the Central Valley Chapter of The American Institute of Architects. He was a member of the first Sacramento County Parks and Recreation Commission, which coined the phrase "Discovery Park" and started the American River Parkway right-of-way. He was also a member of the Sacramento City Housing Appeals Board. California Governor Ronald Reagan appointed Unger to the State Board of

Architectural Examiners where he served 4 years as Board President. Unger received a fellowship in the American Institute of Architects in 1982. During his term on the State Board of Architectural Examiners, as a fellow of the American Institute of Architects, and as a member of National Council of Architectural Registration Board, Unger chaired the group to formulate the National Architect Design Exam and the Exam for General Knowledge of the Practice of Architecture during the 1970s. Dean Unger's most notable work included the Yolo County Administration Center in Woodland (1984), the Tuolumne County Administration Building in Sonora, the Teichert Corporate Headquarters, the Point West Executive Park and the Farm Credit Banks in Sacramento, the Gold River Executive Center in Gold River, the Aspen Neighborhood, 5th and G Street Plaza, the University of California Davis Faculty Club, and the Veteran's Memorial Building in Davis (American Institute of Architects 2011).

Dean F. Unger was a Sacramento architect who has designed numerous commercial, residential, educational, and administrative buildings throughout the City, however, archival research reveals that most of his designs were in the Modern style. The 1962 office addition to the subject property does not embody characteristics of a particular type, period, or method of construction. Additionally the office addition appears in poor condition; parts of the interior have been subject to alterations and the exterior surfaces exhibit signs of excessive moisture and termite damage, additionally, some of the windows, doors and frames, as well as roof shingles are missing. Regardless, the office addition does not embody distinctive characteristics of a type, period, or method of construction, and it is not a notable example of Unger's work. There are other extant examples of his work that embody distinctive characteristics and are better representatives of Unger's designs.

In summary, although both Leonard F. Starks and Dean F. Unger have been involved in the design and development of the subject property (during different times), the subject property does not represent an outstanding example of either architect's work. Furthermore, the subject property does not embody distinctive characteristics of a particular style, type, period, or method of construction, and as previously discussed, it has been subject to a number of alterations that have impacted the integrity of its original design. Also, the subject property appears in poor condition. **For all of these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3, nor does it appear eligible under City Landmark Criteria iii, iv, or v.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history, beyond what has already been identified as a result of the current study. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria D/4, nor does it appear eligible under City Landmark Criteria vi.**

7.2 1913 Wentworth Avenue

Property Description

The property at 1913 Wentworth Avenue (the subject property) is located on APN 017-0121-010. The subject property is a Minimal Traditional-style single-family residence built in 1950 (Sacramento County Assessor). The subject property is a one-story concrete-block building, with a hipped roof sheathed in asphalt shingles. The main elevation faces Wentworth Avenue and features multiple fenestrations, including a sliding window flanked by decorative wood panels on both sides, a single-door entry featuring a screen-door, a large picture-window, and a roll-up garage door. The main elevation features slight eave-overhang. The entrance, located toward the center of the elevation, is recessed. This part of the elevation also features two simple square columns. A large, empty planter is also located in front of the main elevation, adjacent to a driveway (Photograph 7). The west elevation faces a private walkway and features three small sliding windows and a downspout gutter. A smaller planter, adjacent to this elevation, separates the subject property from the walkway. The walkway leads to a wood slat fence (Photograph 8). The subject property's east elevation faces the property at 1919 Wentworth Avenue and features a vent located in the center of the elevation. Access to south elevation was not obtained.

Building development research revealed the subject property has been subject to a number of minor alterations since the initial date of its construction. Building records on file with the City reveal the subject property was owned by Vivian M. Christesen in 1965. Building permits reveal an HVAC system was installed in 1994 (Permit No. 943041), followed by a new roof installation (9716104) and plumbing system (9713440) in 1997. Building permits also reveal that a new electrical system (9802604) was installed in 1998 and repaired in 2006 (0601967). Building development research failed to reveal additional information on the subject property. Other observed alterations include replacement of the garage door (date unknown).

Photograph 7. Overview of Main Elevation (view to north)

Photograph 8. Overview of West Elevation (view to northeast)

Historical Significance

Archival research failed to indicate any associations with important events that contributed to the broad patterns of California, City of Sacramento, or the Land Park neighborhood. The property appears to have always functioned as a residence since the initial date of its construction (1950). Building records reveal the subject property was owned by Vivian M. Christesen in 1965. Building records from 1998 reveal the subject property was owned by Capital Nursery Co. (Permit no. 9716104). Archival research failed to reveal any information on the specific use of the property or its association with Capital Nursery or its owners, and there is no indication that it is associated with important events. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria A/1, nor does it appear eligible under City Landmark Criteria i.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2, nor does it appear eligible under City Landmark Criteria ii.**

The subject property is a Minimal Traditional-style single-family residence that has been subject to a number of alterations since the initial date of its construction. Exterior alterations include replacement of the roof, front door, and garage door. Furthermore, archival research failed to reveal the name of an associated architect or builder. Regardless, the building is not an outstanding example of its style (lacking many of the character-defining features commonly found in Minimal Traditional residences), does not possess high artistic values, and does not represent the work of a master. **As such, the building does not appear eligible under NRHP/CRHR Criteria C/3, nor does it appear eligible under City Landmark Criteria iii, iv, or v.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history, beyond what has already been identified as a result of the current study. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria D/4, nor does it appear eligible under City Landmark Criteria vi.**

7.3 1919 Wentworth Avenue

Property Description

The property at 1919 Wentworth Avenue (the subject property) is located on APN 017-0121-009. The subject property is a Vernacular-style single-family residence built in 1938

(Sacramento County Assessor). The subject property is a one-story structure sheathed in horizontal wood siding and features a pitch roof with a considerable eave-overhang on the main elevation. The main elevation faces Wentworth Avenue and features four narrow square columns, supporting the eave-overhang, and a single door located in the center of the elevation, which is flanked by a large multipaneled, single-hung window on both sides. The overhang creates a front-porch area that is slightly elevated and sheathed in red bricks. The porch is accessed from the front, west, and east (Photograph 9). The west elevation faces the property at 1913 Wentworth Avenue and features two small single-hung windows and a considerably smaller sliding window, as well as a vent (Photograph 10). The east elevation faces a paved driveway and features three double-hung windows. View of the last window is obstructed by a slat fence, extending across the driveway, connecting the subject property to a shed structure (Photograph 11). Access to south elevation was not obtained.

Building records on file with the City reveal the subject property was owned by Richard V. and Lillian J. Collins in 1965 and by Joseph and Esther Battyany from 2004 to 2008. Building records on file with the City reveal the property was remodeled in 1958 by then tenant John Simmons. The records fail to reveal detailed information on the remodeling. Building records reveal the subject property was owned by Capital Nursery in 2010 and 2011. Observed alterations include a new roof, replacement of both windows on the main elevation, replacement of the middle window (originally larger) on the west elevation with the extant small sliding-window, and addition of bricks to the porch surface.

Photograph 9. Overview of Main Elevation (view to north)

Photograph 10. Overview of West Elevation (view to northeast)

Photograph 11. Overview of East Elevation (view to northwest)

Historical Significance

Archival research failed to indicate any associations with important events that contributed to the broad patterns of California, City of Sacramento, or the Land Park neighborhood. The property appears to have always functioned as a residence since the initial date of its construction (1938). Building development research reveals the subject property was owned by Richard V. and Lillian J. Collins in 1965 and by Joseph and Esther Battyany from 2004 to 2008. Building records reveal the subject property was owned by Capital Nursery in 2010 and 2011. Archival research failed to reveal information on the specific use of the property and its association with Capital Nursery, and there is no indication that it is associated with important events. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria A/1, nor does it appear eligible under City Landmark Criteria i.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2, nor does it appear eligible under City Landmark Criteria ii.**

The subject property is a Vernacular-style single-family residence that has been subject to a number of exterior alterations since the initial date of its construction. Major exterior alterations include a new roof, replacement of both windows on the main elevation, replacement of the middle window on the west elevation, and addition of bricks to the porch surface. Additionally, the subject property appears in poor condition; wood-sidings are deteriorating on three exterior surfaces, window frames and sashes present significant termite damage, and the porch surface is deteriorated and presents cracks in the concrete and missing bricks. Furthermore, archival research failed to reveal the name of an associated architect or builder. Regardless, the building has been subject to exterior alterations and has been so deteriorated that it can no longer convey its original design. **As such, the building does not appear eligible under NRHP/CRHR Criteria C/3, nor does it appear eligible under City Landmark Criteria iii, iv, or v.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history beyond what has already been identified as a result of the current study. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria D/4, nor does it appear eligible under City Landmark Criteria vi.**

8 SUMMARY OF FINDINGS

No previously recorded cultural resources or previously conducted cultural resources studies were identified within the project area as a result of the records search, Native American coordination, or background research. However, all built environment resources within the project area had not been previously recorded or evaluated. As part of the current study, the properties at 4700 Freeport Boulevard and 1913 and 1919 Wentworth Avenue were recorded and evaluated for NRHP, CRHR, and City Landmark eligibility in consideration of all designation criteria and integrity requirements.

As a result of the current study, the properties at 4700 Freeport Boulevard and 1913 and 1919 Wentworth Avenue were found not eligible under all designation criteria and integrity requirements. These properties are not considered historical resources for the purposes of CEQA. Therefore, the proposed project will result in a less-than-significant impact to historical resources.

No additional management recommendations are required for historic built environment resources within the project area, however, standards protection measures for unanticipated discoveries of archaeological resources and human remains are provided.

9 MANAGEMENT RECOMMENDATIONS

9.1 Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

9.2 Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the county coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within 2 working days of

notification of the discovery, the appropriate treatment and disposition of the human remains. If the county coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with Section 5097.98 of the PRC, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete his or her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

Should you have any questions regarding this evaluation report or its attachments, please do not hesitate to contact me via email at smurray@dudek.com or via phone at 626.204.9826.

Sincerely,

Samantha Murray, MA, RPA
Senior Architectural Historian and Archaeologist

Salli Hosseini, MAHP
Architectural Historian

Appendix A: Department of Parks and Recreation Forms
Appendix B (Confidential): North Central Information Center Records Search Results Letter
Appendix C: NAHC Sacred Lands File Search Results

10 REFERENCES

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APPENDIX A

Department of Parks and Recreation Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** 1913 Wentworth Ave.

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Sacramento

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Sacramento East **Date:** 1967, PR 1980 **T** 8 North; **R** 4 East; SW ¼ **of** NW ¼ **of Sec** 24; MD **B.M.**

c. Address: 1913 Wentworth Avenue City: Sacramento Zip: 95822

d. UTM: Zone: 38°31'54.34"N /121°29'47.99"W (G.P.S.) Google Earth

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Assessor's Parcel Number: 017-0121-010.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The subject property is bounded by Wentworth Avenue to the south; Freeport Boulevard to the east; commercial and industrial developments to the north; and residential developments to the west.

The subject property is a one-story concrete-block building, with a hipped roof sheathed in asphalt shingles. The main elevation faces Wentworth Avenue and features multiple fenestrations including a sliding window flanked by decorative wood panels on both sides, a single door entry, featuring a screen-door, a large picture-window, and a roll-up garage door. The main elevation features slight eve-overhang. The entrance, located towards the center of the elevation, is recessed. This part of the elevation also features two simple square-columns. A large, empty planter is also located in front of the main elevation, adjacent to the driveway. The west elevation faces a private walkway and features three small sliding windows and a downspout gutter. A smaller planter, adjacent to this elevation separates the subject property from the walkway. The walkway leads to a wood slat fence. The subject property's east elevation faces a residential structure and features a vent located in the center of the elevation. Access to south elevation was not obtained.

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single family property

***P4. Resources Present:** ■Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Overview of main elevation, view to north, 09/17/15

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1950 (Sacramento County Assessor)

***P7. Owner and Address:**
Newmark, Cornish & Carey
901 Mariner's Island Blvd. Ste. 125
San Mateo, CA 94404

***P8. Recorded by:**
Salli Hosseini
Dudek
31878 Camino Capistrano #200
San Juan Capistrano, CA 92675

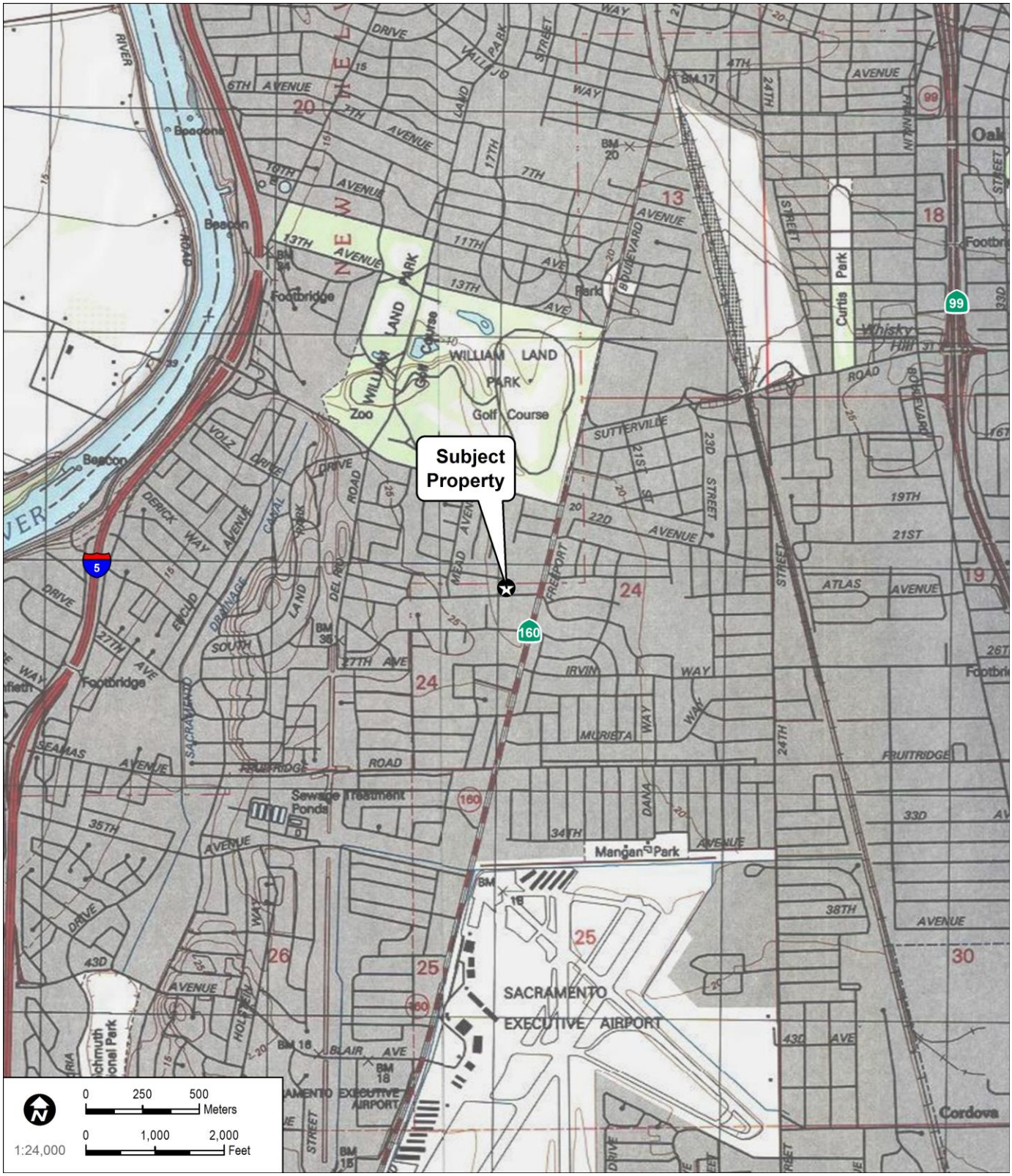
***P9. Date Recorded:** 10/15/2015

***P10. Survey Type:** Intensive

***P11. Report Citation:** *Cultural Resources Report for the Land Park Commercial Center EIR Project, Sacramento, California*. Prepared by DUDEK 2015.

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Map Name:** Sacramento East ***Scale:** 1:24,000 ***Date of Map:** 2012



BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) 1913 Wentworth Ave.

B1. Historic Name: Unknown
B2. Common Name: Unknown
B3. Original Use: Residence
B4. Present Use: Vacant

***B5. Architectural Style:** Minimal Traditional

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Construction of the subject property in 1950 was confirmed by the Sacramento County Assessor. Building development research revealed the subject property has been subject to a number of minor alterations since the initial date of its construction. Building permits reveal an HVAC system was installed in 1994 (Permit No. 943041), followed by a new roof installation (Permit No. 9716104) and plumbing system (Permit No. 9713440) in 1997. Building permits also reveal new electrical system (Permit No. 9802604) was installed in 1998 and repaired in 2006 (Permit No. 0601967). Building development research failed to reveal additional information on the subject property. Other observed alterations include replacement of the garage door (date unknown).

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**

B9a. Architect: Unknown
b. Builder: Unknown

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property is located at 1913 Wentworth Avenue in the Land Park neighborhood of Sacramento. It is a single-family Minimal Traditional style structure that was owned by Capital Nursery (Permit No. 9716104).

Charles G. and Eugene R. Armstrong (the Armstrong brothers) founded the Capital Nursery Co. in 1936. The family-owned company functioned as a nursery from 1936 until 2012. In 2012, the company closed all of its locations including the flagship store located north of the subject property in Sacramento, Citrus Heights, Elk Grove and Rocklin (Sacramento Bee 2014). Archival research failed to reveal further information on the association of the subject property to the Capital Nursery Co.

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** **See Continuation Sheet**

B13. Remarks:

***B14. Evaluator:** Salli Hosseini M.A.H.P.
***Date of Evaluation:** 10/15/2015

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

***B10**.

Development History of the Project Area

Historic aerial photographs of the subject property were available for the years 1947, 1957, 1964, 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 (NETR 2011). By 1947, the area surrounding the subject property was partially developed. By that time, most developments appear to be residential and located to the north, south, and southeast of the subject property. As evident in 1947 aerials, the parcels west and northwest of the subject property were a mixture of residential and agricultural developments. The parcel located immediately across Freeport Boulevard was mostly undeveloped with the exception of some residential developments to the south. By 1957 the surrounding area was fully developed including commercial developments on the parcel across from Freeport Boulevard. The parcels west and northwest of the subject property were fully developed and mostly contained a mixture of residential, commercial and industrial buildings. Historic aerial photographs confirm the construction of the subject property by 1957. 1964 aerials do not reveal any changes to the surrounding area or the subject property. Photographs from 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 do not reveal any changes to the subject property.

NRHP and CRHR Evaluation

Archival research failed to indicate any associations with important events that contributed to the broad patterns of California, City of Sacramento, or the Land Park neighborhood. The property appears to have always functioned as a residence since the initial date of its construction (1950). Building records from 1998 reveal the subject property was owned by Capital Nursery Co. (Permit No. 9716104). Archival research failed to reveal any information on the specific use of the property or its association with Capital Nursery or its owners, and there is no indication that it is associated with important events. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated, and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.**

The subject property is a Minimal Traditional style single-family residence that has been subject to a number of alterations since the initial date of its construction. Exterior alterations include replacement of the roof, front door, and garage door. Furthermore, archival research failed to reveal the name of an associated architect or builder. Regardless, the building is not an outstanding example of its style (lacking many of the character defining features commonly found un Minimal Traditional residences), does not possess high artistic values, and does not represent the work of a master. **As such, the building does not appear eligible under NRHP and CRHR Criteria C/3.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history, beyond what has already been identified as a result of the current study. **Therefore, the subject property is recommended not eligible under NRHP/CRHR Criteria D/4.**

Finally, for all of the same reasons explained above in consideration of national and state criteria, the subject property does not meet any of the City of Sacramento's criteria for listing in the Sacramento Register.

References

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State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**

PRIMARY RECORD

Trinomial
NRHP Status Code 6Z

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** 1919 Wentworth Ave.

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Sacramento
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Sacramento East **Date:** 1967, PR 1980 **T** 8 North; **R** 4 East; SW ¼ **of** NW ¼ **of Sec** 24; MD **B.M.**
c. Address: 1919 Wentworth Avenue City: Sacramento Zip: 95822
d. UTM: Zone: 38°31'54.20"N /121°29'47.57"W (G.P.S.) Google Earth
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Assessor's Parcel Number: 017-0121-009.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property is bounded by Wentworth Avenue to the south; Freeport Boulevard to the east; commercial and industrial developments to the north; and residential developments to the west.

The subject property is a one-story structure sheathed in horizontal wood-siding, and features a pitch roof, with a considerable eave-overhang on the main elevation. The main elevation faces Wentworth Avenue and features four narrow square-columns, supporting the eave-overhang, and a single-door located in the center of the elevation, which is flanked by a large multi-paneled, single-hung window on both sides. The overhang creates a front-porch area that is slightly elevated and sheathed in red bricks. The porch is accessed from the front, west, and east. The east elevation faces Building 1 and features two small double-hung windows and a considerably smaller sliding window, and a vent. The west elevation faces a paved driveway and features three double-hung windows. View of the last window is obstructed by a slat fence, extending across the driveway, connecting the subject property to a shed structure.

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single family property
***P4. Resources Present:** ■Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Overview of main elevation, view to north, 09/17/15

***P6. Date Constructed/Age and Sources:** ■Historic
☐Prehistoric ☐Both
1938 (Sacramento County Assessor)

***P7. Owner and Address:**
Newmark, Cornish & Carey
901 Mariner's Island Blvd. Ste. 125
San Mateo, CA 94404

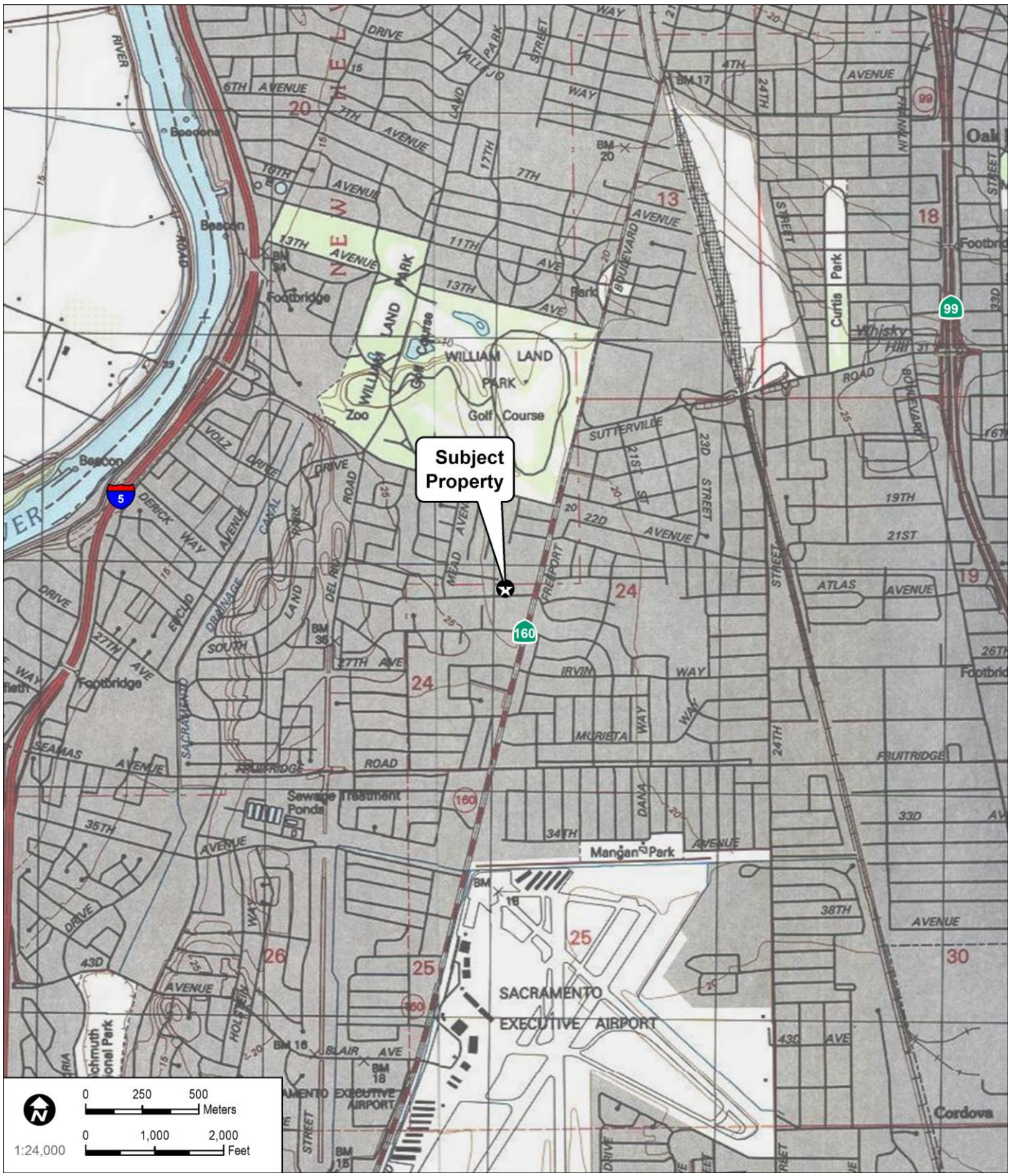
***P8. Recorded by:**
Salli Hosseini
Dudek
31878 Camino Capistrano #200
San Juan Capistrano, CA 92675

***P9. Date Recorded:** 10/15/2015
***P10. Survey Type:** Intensive

***P11.Report Citation:** *Cultural Resources Report for the Land Park Commercial Center EIR Project, Sacramento, California*. Prepared by DUDEK 2015.

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***Map Name:** Sacramento East ***Scale:** 1:24,000 ***Date of Map:** 2012



BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) 1919 Wentworth Ave.

B1. Historic Name: Unknown
B2. Common Name: Unknown
B3. Original Use: Residence
B4. Present Use: Vacant

***B5. Architectural Style:** Vernacular

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Construction of the subject property in 1938 was confirmed by the Sacramento County Assessor. Building development research failed to reveal additional information on the subject property. Observed alterations include a new roof, replacement of both windows on the main elevation, replacement of the middle window (originally larger) on the west elevation, with the extant small sliding-window, and addition of bricks to the porch surface.

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**

B9a. Architect: Unknown
b. Builder: Unknown

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property is located at 1919 Wentworth Avenue in the Land Park neighborhood of Sacramento. It is a single-family structure and appears to have always functioned as a residence.

Development History of the Project Area

Historic aerial photographs of the subject property were available for the years 1947, 1957, 1964, 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 (NETR 2011). By 1947, the area surrounding the subject property was partially developed. By that time, most developments appear to be residential and located to the north, south, and southeast of the subject property. As evident in 1947 aerials, the parcels west and northwest of the subject property were a mixture of residential and agricultural developments. The parcel located immediately across Freeport Boulevard was mostly undeveloped with the exception of some residential developments to the south. Historic aerial photographs confirm the construction of the subject property by 1947. By 1957 the surrounding area was fully developed including commercial developments on the parcel across from Freeport Boulevard. The parcels west and northwest of the subject property were fully developed and mostly contained a mixture of residential, commercial and industrial buildings. Historic aerial photographs reveal construction of a residence adjacent (west) of the subject property by 1957. 1964 aerials do not reveal any changes in the surrounding area or the subject property. Photographs from 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 do not reveal any changes to the subject property.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** **See Continuation Sheet**

B13. Remarks:

***B14. Evaluator:** Salli Hosseini M.A.H.P.
***Date of Evaluation:** 10/15/2015

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

NRHP and CRHR Evaluation

Archival research failed to indicate any associations with important events that contributed to the broad patterns of California, City of Sacramento, or the Land Park neighborhood. The property appears to have always functioned as a residence since the initial date of its construction (1938). The subject property was owned by Capital Nursery Co. and was part of a larger nursery operation. Archival research failed to reveal any information on the specific use of the property or its association with Capital Nursery or its owners, and there is no indication that it is associated with important events. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated, and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.**

The subject property is a Vernacular style single-family residence that has been subject to a number of exterior alterations since the initial date of its construction. Major exterior alterations include a new roof, replacement of both windows on the main elevation, replacement of the middle window on the west elevation, and addition of bricks to the porch surface. Additionally, the subject property appears in poor condition; wood-sidings are deteriorating on three exterior surfaces, window frames and sashes present significant termite damage, and the porch surface is deteriorated and presents cracks in the concrete and missing bricks. Furthermore, archival research failed to reveal the name of an associated architect or builder. Regardless, the building has been subject to exterior alterations and has been so deteriorated, that it can no longer convey its original design. **As such, the building does not appear eligible under NRHP and CRHR Criteria C/3.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history, beyond what has already been identified as a result of the current study. **Therefore, the subject property is recommended not eligible under NRHP/CRHR Criteria D/4.**

Finally, for all of the same reasons explained above in consideration of national and state criteria, the subject property does not meet any of the City of Sacramento's criteria for listing in the Sacramento Register.

References

NETR (National Environmental Title Research, LLC). 2011. Address search for: 1919 Wentworth Avenue, Sacramento, CA. Accessed October 15, 2015. http://www.historicaerials.com/.

Sacramento Bee. 2014. "Capital Nursery's former properties to sprout houses, stores". December 28, 2014. Accessed October 14, 2015. http://www.sacbee.com/news/local/article5090313.html

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

***Resource Name or #:** Capital Nursery Co.

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Sacramento

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Sacramento East **Date:** 1967, PR 1980 **T** 8 North; **R** 4 East; SW ¼ **of** NW ¼ **of Sec** 24; MD **B.M.**

c. Address: 4700 Freeport Boulevard City: Sacramento Zip: 95822

d. UTM: Zone: 38°31'58.37"N /121°29'42.14"W (G.P.S.) Google Earth

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

Assessor's Parcel Number: 017-0121-001.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The subject property is bounded by Wentworth Avenue to the south; Freeport Boulevard to the east; and residential developments to the north and west. The parcel is fully developed by industrial and commercial properties.

At the front entrance (along Freeport Blvd.) the subject property is sheathed in lath and red stones and consists of the octagonal-shaped open-air rotunda flanked on either side by open-air spaces for bedding plant/flat displays. Featured on the octagonal-shaped rotunda are a wing sheathed in red stones, featuring multi-paneled windows and a hipped roof, and two double-doors. Two triangular planters are located on the concrete surface in front of this elevation. A paved parking area runs along this section of the structure. The subject property also consists of multiple hallways (south, west, and south-west of rotunda), a greenhouse (west of rotunda), and a restroom (south-west of rotunda). The interior spaces are partially covered and partially consist of built-in wooden tables, attached to square-columns, and have paved walkways. The hallways are paved and feature trusses, and side openings, covered with removable fiberglass panels **(See Continuation Sheet).**

***P3b. Resource Attributes:** (List attributes and codes) HP6. 1-3 story commercial building; HP8. Industrial building.

***P4. Resources Present:** ■Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Overview of front elevation, view to southwest, 10/22/2014

***P6. Date Constructed/Age and Sources:** ■Historic
☐Prehistoric ☐Both
1946 (Sacramento County Assessor)

***P7. Owner and Address:**
Newmark, Cornish & Carey
901 Mariner's Island Blvd. Ste. 125
San Mateo, CA 94404

***P8. Recorded by:**
Salli Hosseini
Dudek
31878 Camino Capistrano #200
San Juan Capistrano, CA 92675

***P9. Date Recorded:** 12/10/2015

***P10. Survey Type:** Intensive

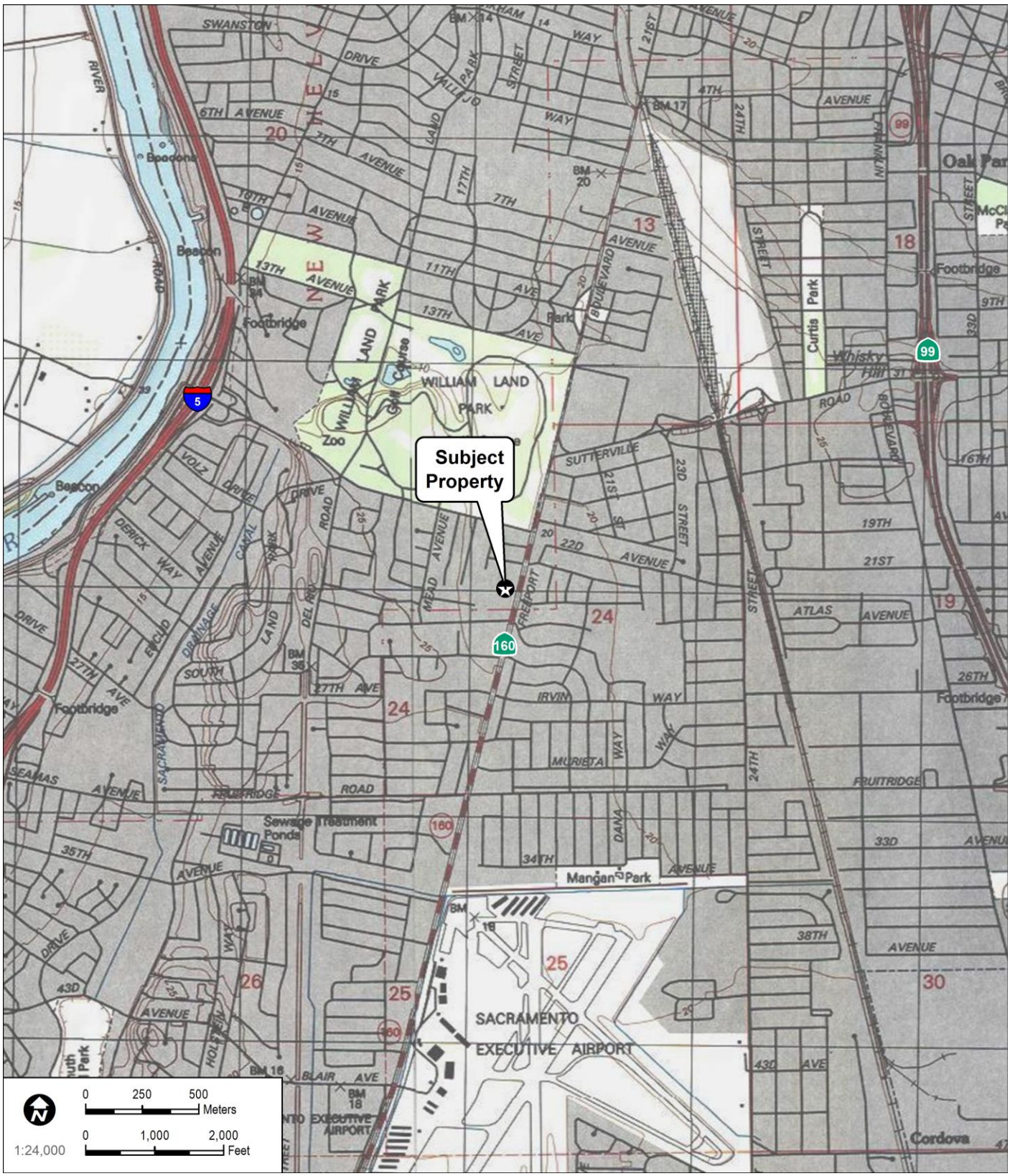
***P11. Report Citation:** *Cultural Resources Report for the Land Park Commercial Center EIR Project, Sacramento, California*. Prepared by DUDEK 2015.

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency	Primary #
DEPARTMENT OF PARKS AND RECREATION	HRI#
LOCATION MAP	Trinomial

Page 2 **of** 6 ***Resource Name or #:** Capital Nursery Co.

***Map Name:** Sacramento East ***Scale:** 1:24,000 ***Date of Map:** 2012



BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) Capital Nursery Co.

B1. Historic Name: Capital Nursery Co.
B2. Common Name: Capital Nursery
B3. Original Use: Plant nursery
B4. Present Use: Vacant

***B5. Architectural Style:** Vernacular and Utilitarian

***B6. Construction History:** (Construction date, alterations, and date of alterations)

The subject property was designed by Leonard Starks, and completed in 1946 (Nacht and Lewis 2014a, Sacramento County Assessor). A 1956 aerial photograph of the subject property on file with the City indicates the building has been subject to multiple exterior alterations on its south, west, and southwest since that time period. Building development research confirms these alterations. Building records reveal the lath house (south) was constructed in 1958 (Permit No. C-7974). Building permits dating to 1960 reveal a nursery rain cover (south) was constructed (D-7380) and was enclosed in 1961 (D-7577). In 1962, the aluminum and glass greenhouse (west) was constructed (E-2625). An office addition (southwest) took place to the garden nursery (E-1725) in 1962. Building permits reveal the garden shop was re-roofed in 1973 (A-8156), and an HVAC system was installed in 1975 (C-5956). As revealed by 1991 (A-8298) and 1992 (B-2340) building permits, the garden shop was remodeled and an HVAC system was installed in 1992 (B-6291); another remodeling took place in 1994 (949879).

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**

B9a. Architect: Leonard F. Starks
b. Builder: Unknown

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property is part of the larger Capital Nursery Co. located at 4700 Freeport Blvd. in the Land Park neighborhood of Sacramento. The subject property is a Vernacular style building that houses the main retail store, nursery, greenhouse, garden shop, and restrooms. Charles G. and Eugene R. Armstrong (the Armstrong brothers) founded the Capital Nursery Co. in 1936. The family-owned company functioned as a nursery and served the Sacramento region from 1936 until 2012. In 2012, the company closed all of its locations including the flagship store in Sacramento, Citrus Heights, Elk Grove and Rocklin (Sacramento Bee 2014).

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** **See Continuation Sheet**

B13. Remarks:

***B14. Evaluator:** Salli Hosseini M.A.H.P.
***Date of Evaluation:** 12/10/2015

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

***P3a.** The greenhouse features multiple fenestrations, fiberglass panels, and built-in tables of bedding plants and flats, and is sheathed in a combination of steel plates, slats, and drywalls. The restroom structure consists of a hipped-roof, and is clad in smooth stucco. This structure features multiple fenestrations including single doors, and various sized windows.

***B10.**

Development History of the Project Area

Historic aerial photographs of the subject property were available for the years 1947, 1957, 1964, 1966, 1993, 1998, 2002, 2005, 2009, 2010, and 2012 (NETR 2011). By 1947, the area surrounding the subject property was partially developed. By that time, most developments appear to be residential and located to the north, south, and southeast of the subject property. As evident in 1947 aerials, the parcels west and northwest of the subject property were a mixture of residential and agricultural developments. The parcel located immediately across Freeport Boulevard was mostly undeveloped with the exception of some residential developments to the south. The parcel containing the subject property was partially developed by 1947 and contained 6 structures. Historic aerial photographs confirm the construction of the subject property by 1947. By 1957 the surrounding area was fully developed including commercial developments on the parcel across from Freeport Boulevard. The parcels west and northwest of the subject property were fully developed and mostly contained residential buildings. The parcel containing the subject property was further developed by 1957. The same photographs do not reveal any changes to the subject property. 1964 aerials do not reveal any changes in the surrounding area. By 1964, the greenhouse structure was completed and a small ancillary structure appears west of the subject property. 1966 aerials do not reveal any changes to the subject property or the surrounding area. By 1993, the small ancillary building was no longer extant. Photographs from 1998, 2002, 2005, 2009, 2010, and 2012 do not reveal any changes to the subject property.

Archival research reveals the subject property was designed by master architect Leonard Starks (Nacht and Lewis 2014). Leonard F. Starks was born in Healdsburg, California. He studied architecture in San Francisco under a matching study system of the Paris Ecole des Beaux Arts. His first practice as a designer was on the Panama-pacific International Exposition in San Francisco (1913-1915). Following, he moved to Washington D.C. where he worked for architect Waddy Butler Wood, and then to New York City, where he initially worked as office manager for Thomas W. Lamb. Over the next few years, Sparks assisted Lamb in design of several theaters across New York, including the Rivoli and the Capital. In 1921, he was sent to Sacramento to design a chain of Pacific Coast theaters for the Famous Players theater chain. However, when an antitrust action blocked that project, Starks gave up his position with Lamb and decided to remain in Sacramento where he formed his own architectural firm. Between 1921 and 1941, Starks designed many of Sacramento's civic and commercial properties including the Fox Senator Theater in Downtown Sacramento (1923), which was demolished in the 1970s. In partnership with E.C. Hemmings, Starks practiced for a year in Sacramento at Hemmings and Starks, Architects, in 1923 (PCAD 2015). Amongst his projects during that time were W.P. Fuller Company Building and the Elks Tower (1926) in Italian Renaissance style (Nacht and Lewis 2014b). Later in the 1920s, he was partner and practiced at Starks and Flanders, Architects in Sacramento, where he designed the addition to the California National Bank (1926), the no longer extant Alhambra Theater (1927) in Moorish style, the Blue Anchor Building (1931), the NRHP-listed Federal Building (1933) which exhibits several early 20th Century revival styles, and the NRHP-listed C.K. McClatchy High School (1949) in Classical Revival style.. Sparks and Flanders were also involved in numerous commercial and several private residential designs throughout Sacramento and San Joaquin Valleys. Furthermore, Sparks was the president of the Society of Sacramento Architects, an architectural organization for Sacramento architects in the early 1930s (PCAD 2015). Starks founded Starks Jozens & Nacht, which was later taken over by Daniel J. Nacht as today's Nacht & Lewis Architects (Forgotten Books 2013).

NRHP and CRHR Evaluation

Archival research failed to indicate any associations with important events that contributed to the broad patterns of California, City of Sacramento, or the Land Park neighborhood. The property appears to have always functioned as a nursery since the initial date of its construction (1946). Archival research failed to reveal any information on the business or business owners, and there is no indication that they are associated with important events. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.**

Archival research failed to indicate any associations with significant persons. All names identified as a result of building development research were investigated, and yielded no additional information relevant to either the subject property's history or any broader associations. **Therefore, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.**

The subject property is an industrial/commercial structure in Vernacular architectural style that has been subject to a number of exterior and interior alterations since the initial date of its construction. Exterior alterations include construction of a lath house in 1958, a nursery rain cover in 1960 and its enclosure in 1961; construction of a greenhouse, and an office addition to the garden nursery in 1962, all of which have significantly compromised the integrity of the original design. Additionally, the garden shop

was re-roofed in 1973 and an HVAC system was installed in 1975. Interior alterations include remodeling of the garden shop and an HVAC installation in 1992, followed by another remodeling in 1994. The additions and alterations over the years have compromised the integrity of the original design and materials of the subject property. Much of the subject property's original materials in the exterior and interior have been lost as a result of numerous alterations since the initial construction. Additionally, the subject property appears to be in poor condition; door and window frames have been removed in various parts of the interior (garden shop, restrooms, and greenhouse). The roof is also damaged in the restroom structure. Concrete pavements have either been removed, or are in poor condition throughout most parts of the subject property, wood posts and beams appear in poor condition due to excessive moisture, and loose wires are dangling from the ceiling in various parts of the interior. Built-in cabinets and plant stands are damaged in parts of the interior. Additionally, wall surfaces are damaged, and a number of glass windows are missing and currently boarded up. Termites are present on wood elements throughout the structure, and vegetation is growing in-between concrete cracks. Furthermore, overgrown vegetation is present in most parts of the subject property.

Archival research reveals the subject property was designed by master architect Leonard Starks (Nacht and Lewis 2014). Leonard F. Starks was born in Healdsburg, California. He studied architecture in San Francisco under a matching study system of the Paris Ecole des Beaux Arts. His first practice as a designer was on the Panama-pacific International Exposition in San Francisco (1913-1915). Following, he moved to Washington D.C. where he worked for architect Waddy Butler Wood, and then to New York City, where he initially worked as office manager for Thomas W. Lamb. Over the next few years, Sparks assisted Lamb in design of several theaters across New York, including the Rivoli and the Capital. In 1921, he was sent to Sacramento to design a chain of Pacific Coast theaters for the Famous Players theater chain. However, when an antitrust action blocked that project, Starks gave up his position with Lamb and decided to remain in Sacramento where he formed his own architectural firm. Between 1921 and 1941, Starks designed many of Sacramento's civic and commercial properties including the Fox Senator Theater in Downtown Sacramento (1923), which was demolished in the 1970s. In partnership with E.C. Hemmings, Starks practiced for a year in Sacramento at Hemmings and Starks, Architects, in 1923 (PCAD 2015). Amongst his projects during that time were W.P. Fuller Company Building and the Elks Tower (1926) in Italian Renaissance style (Nacht and Lewis 2014b). Later in the 1920s, he was partner and practiced at Starks and Flanders, Architects in Sacramento, where he designed the addition to the California National Bank (1926), the no longer extant Alhambra Theater (1927) in Moorish style, the Blue Anchor Building (1931), the NRHP-listed Federal Building (1933) which exhibits several early 20th Century revival styles, and the NRHP-listed C.K. McClatchy High School (1949) in Classical Revival style. Sparks and Flanders were also involved in numerous commercial and several private residential designs throughout Sacramento and San Joaquin Valleys. Starks was also among the architects of the NRHP-listed New Helvetia Historic District (1942) (Boghosian 2013). Furthermore, Sparks was the president of the Society of Sacramento Architects, an architectural organization for Sacramento architects in the early 1930s (PCAD 2015). Starks founded Starks Jozens & Nacht, which was later taken over by Daniel J. Nacht as today's Nacht & Lewis Architects (Forgotten Books 2013). Starks was a prominent Sacramento architect who designed some of the most important buildings in the downtown area. He is recognized for his theater design and civic projects, as well as a number of commercial projects in Sacramento. The architect's most noteworthy buildings (Elk Tower, Blue Anchor Building, Federal Building, and the C.K. McClatchy High School) are in early 20th Century period revival styles and exhibit elaborate ornamentation. Considering the breadth of his career in the City of Sacramento, it is clear that Starks' most important and significant work occurred in the 1920s and 1930s in the downtown area. The subject property is a late, and not particularly noteworthy example of Starks' work and does not possess the high artistic values that he is known for in the City of Sacramento.

Furthermore, building development research suggests the 1962 addition to the garden nursey was completed by Dean Unger. Born in Sacramento, Dean Frederick Unger received a Master of Arts degree in Architecture from the University of California-Berkeley. After graduation he volunteered to serve in the Air Force during the Korean War and acted as a Second Lieutenant. Towards the end of the war, Unger returned to Sacramento where he worked as a draftsman for Ken Rickey and Fred Brooks. He established his solo practice Dean F. Unger, AIA, Inc. in 1959 in Sacramento. Unger served as President for the Central Valley Chapter of The American Institute of Architects. He was a member of the first Sacramento County Parks and Recreation Commission, which coined the phrase "Discovery Park" and started the American River Parkway right-of-way. He was also a member of the Sacramento City Housing Appeals Board. California Governor Ronald Reagan appointed Unger to the State Board of Architectural Examiners where he served four years as Board President. Unger received a Fellowship in the American Institute of Architects in 1982. During his term on the State Board of Architectural Examiners, as a Fellow of the American Institute of Architects, and as a member of National Council of Architectural Registration Board, Unger chaired the group to formulate the National Architect Design Exam, and the "Exam for General Knowledge of the Practice of Architecture" during the 1970's. Dean Unger's most notable work included the Yolo County Administration Center in Woodland (1984), the Tuolumne County Administration Building in Sonora, the Teichert Corporate Headquarters, the Point West Executive Park and the Farm Credit Banks in Sacramento, the Gold River Executive Center in Gold River, the Aspen Neighborhood, 5th and G Street Plaza, the UC Davis Faculty Club and the Veteran's Memorial Building in Davis (American Institute of Architects 2011). Although Dean F. Unger was a Sacramento architect who has designed numerous commercial, residential, educational, and

administrative buildings throughout the City, he is not considered a master architect. Furthermore, archival research reveals that most of his designs were in the Modern style. Also, building development research failed to reveal further information on the 1962 addition by Dean Unger, and it is not evident whether that particular section of the property is extant. The existing section of the subject property (southwest) identified in this report as the garden shop appears in poor condition and does not represent a noteworthy example of Unger's work.

In summary, although both Leonard F. Starks and Dean F. Unger have been involved in the design and development of the subject property (during different times), the subject property does not represent an outstanding example of either architect's work. Furthermore, the subject property does not embody distinctive characteristics of a particular style, type, period, or method of construction, and (as previously discussed) it has been subject to a number of alterations that have impacted the integrity of its original design. Also, the subject property appears in poor condition. **As such, the building does not appear eligible under NRHP and CRHR Criteria C/3.**

There is no evidence to indicate that the subject property is likely to yield any information important in prehistory or history, beyond what has already been identified as a result of the current study. **Therefore, the subject property is recommended not eligible under NRHP/CRHR Criteria D/4.**

Finally, for all of the same reasons explained above in consideration of national and state criteria, the subject property does not meet any of the City of Sacramento's criteria for listing in the Sacramento Register.

References

American Institute of Architects. "In Memory of Dean Unger, FAIA", July 11, 2011. Accessed December 2, 2015. http://aiacv.org/in-memory-of-dean-unger-aia/

Nacht & Lewis. 2014a. "Capital Nursery". Accessed October 14, 2015. http://history.nachtlewis.com/capital-nursery/

2014b. "A Trip Back in Time-Exploring the Legacy of Nacht & Lewis". Accessed October 14, 2012. http://nachtlewis.com/exploring-the-legacy-of-nachtlewis/

NETR (National Environmental Title Research, LLC). 2011. Address search for: 4700 Freeport Boulevard, Sacramento, CA. Accessed October 15, 2015. http://www.historicaerials.com/.

Pacific Coast Architecture Database (PCAD). 2015. "Leonard F. Starks". Accessed October 14, 2015. http://pcad.lib.washington.edu/firm/458/

Sacramento Bee. 2014. "Capital Nursery's former properties to sprout houses, stores". December 28, 2014. Accessed October 14, 2015. http://www.sacbee.com/news/local/article5090313.html

Forgotten Books. 2013. "Architect Joins Sacramento Firm". *Architect and Engineer*. Accessed October 22, 2015. http://www.forgottenbooks.com/readbook_text/Architect_and_Engineer_1000024565/189

APPENDIX B (CONFIDENTIAL)

North Central Information
Center Records Search Results Letter

APPENDIX C

NAHC Sacred Lands File Search Results

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Jason Camp, THPO
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Camp,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

Project Description and Location

The project applicant is proposing to construct an approximately 108,000 square foot (sf) retail center near the corner of Freeport Boulevard and Wentworth Avenue on the former Capital Nursery site. The retail center proposes a 55,000 sf grocery store with up to 53,000 sf in complimentary retail uses along with parking and landscaping.

The project area is located at 4700 Freeport Boulevard in Sacramento, California. The project area is bounded by residential housing to the north, Wentworth Avenue to the south, Freeport Boulevard and two existing bank buildings to the east, and residential housing to the west. The project area falls within Section 24 of Township 8 North, Range 4 East of the Sacramento East, California 7.5' USGS Quadrangle Map (see enclosed map).

If you have knowledge of cultural resources that may exist within or near the project area, please contact me directly at (626) 204-9826, smurray@dudek.com, or at the above address at your earliest convenience.

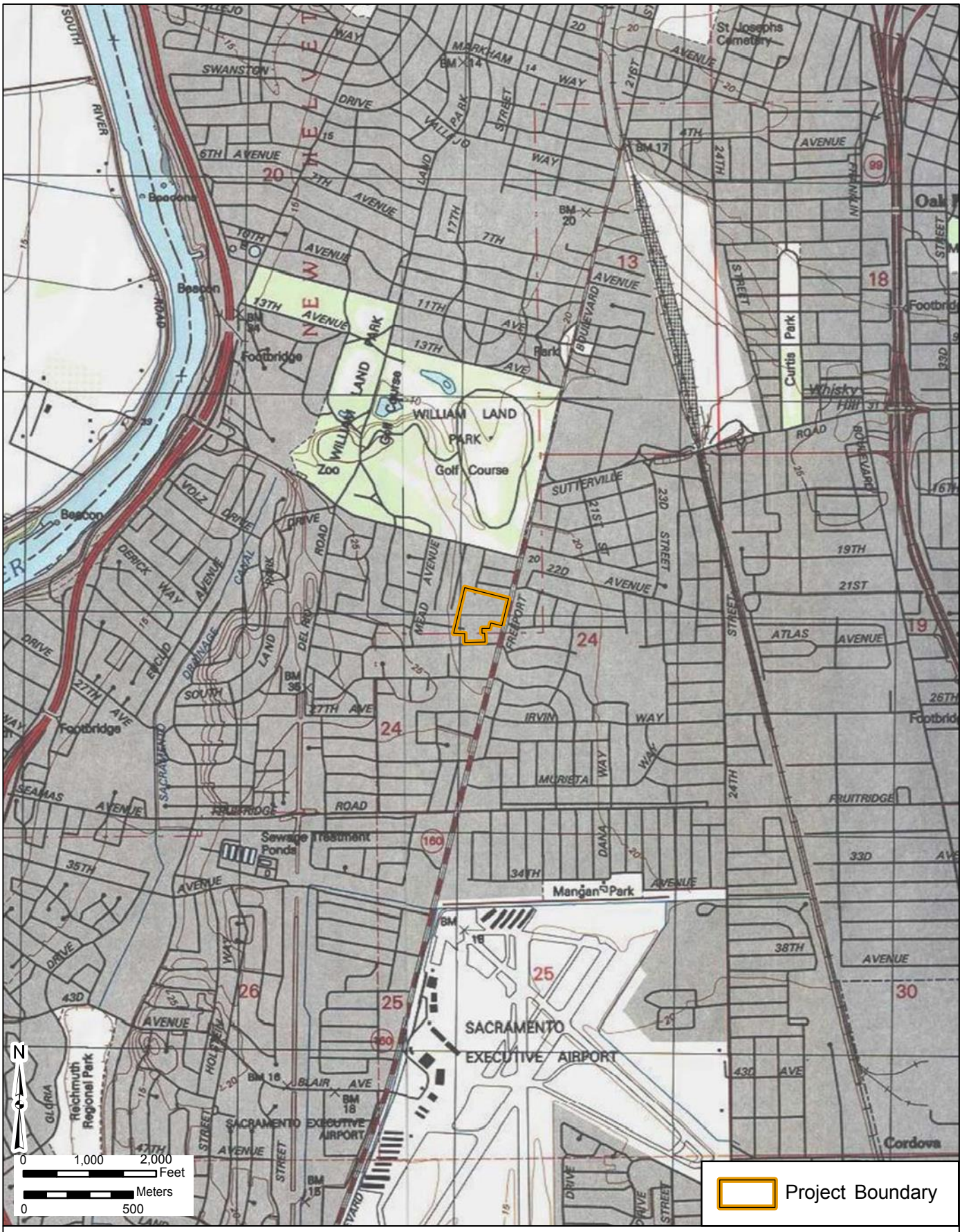
Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. AB 52 is a process between the CEQA lead agency (the City of Sacramento) and California Native American Tribes concerning potential impacts to tribal cultural resources. Tribes that wish to be notified of projects for the purposes of AB 52 must contact the City in writing pursuant to Public Resources Code Section 21080.3.1(b).

Thank you for your assistance.

Sincerely,

Samantha Murray, M.A., RPA
Archaeologist

Attachment: Project Location Map



SOURCE: USGS Topo 7.5 Minute Series - Sacramento West & Sacramento East Quadrangle
Township 8N / Range 4E / Section 24

Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Grayson Coney, Cultural Director
T'si-Akim Maidu
P.O. Box 1316
Colfax, CA 95713

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Coney,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. AB 52 is a process between the CEQA lead agency (the City of Sacramento) and California Native American Tribes concerning potential impacts to tribal cultural resources. Tribes that wish to be notified of projects for the purposes of AB 52 must contact the City in writing pursuant to Public Resources Code Section 21080.3.1(b).

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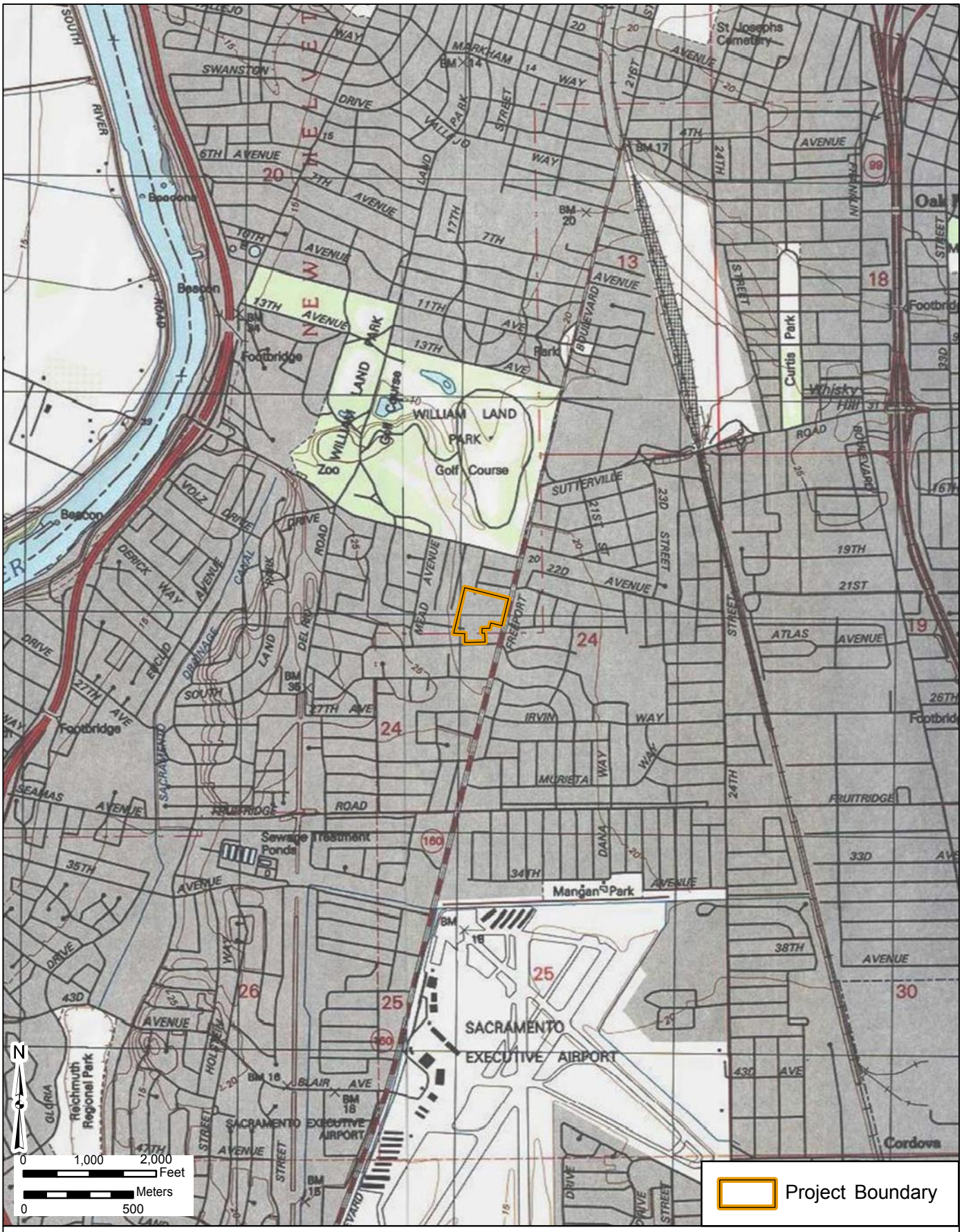

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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Ms. Pamela Cubbler,
Colfax-Todds Valley Consolidated Tribe
P.O. Box 734
Foresthill, CA 95631

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Ms. Cubbler,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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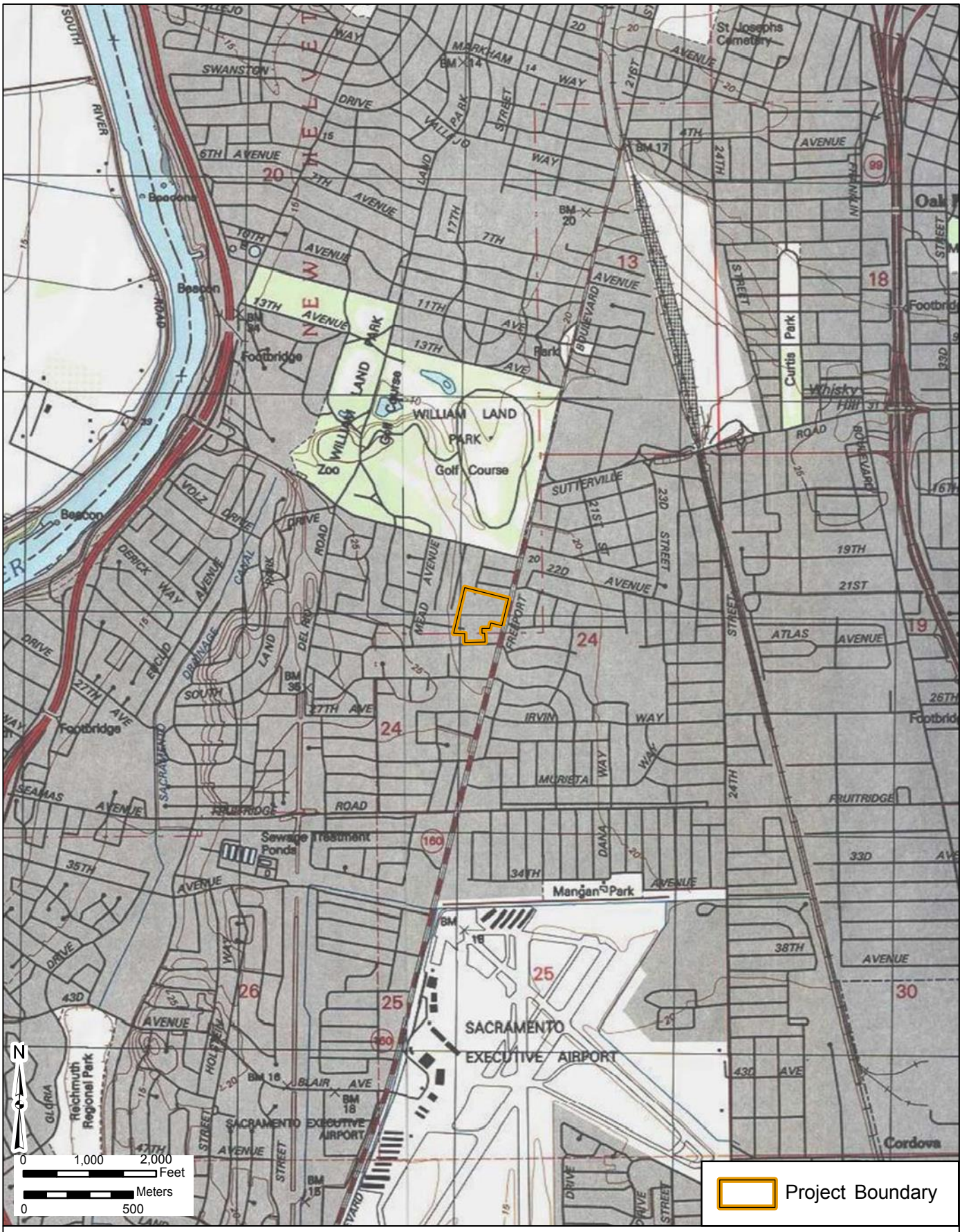

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LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Ms. Rose Enos,
Maidu / Washoe
15310 Bancroft Road
Auburn, CA 95603

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Ms. Enos,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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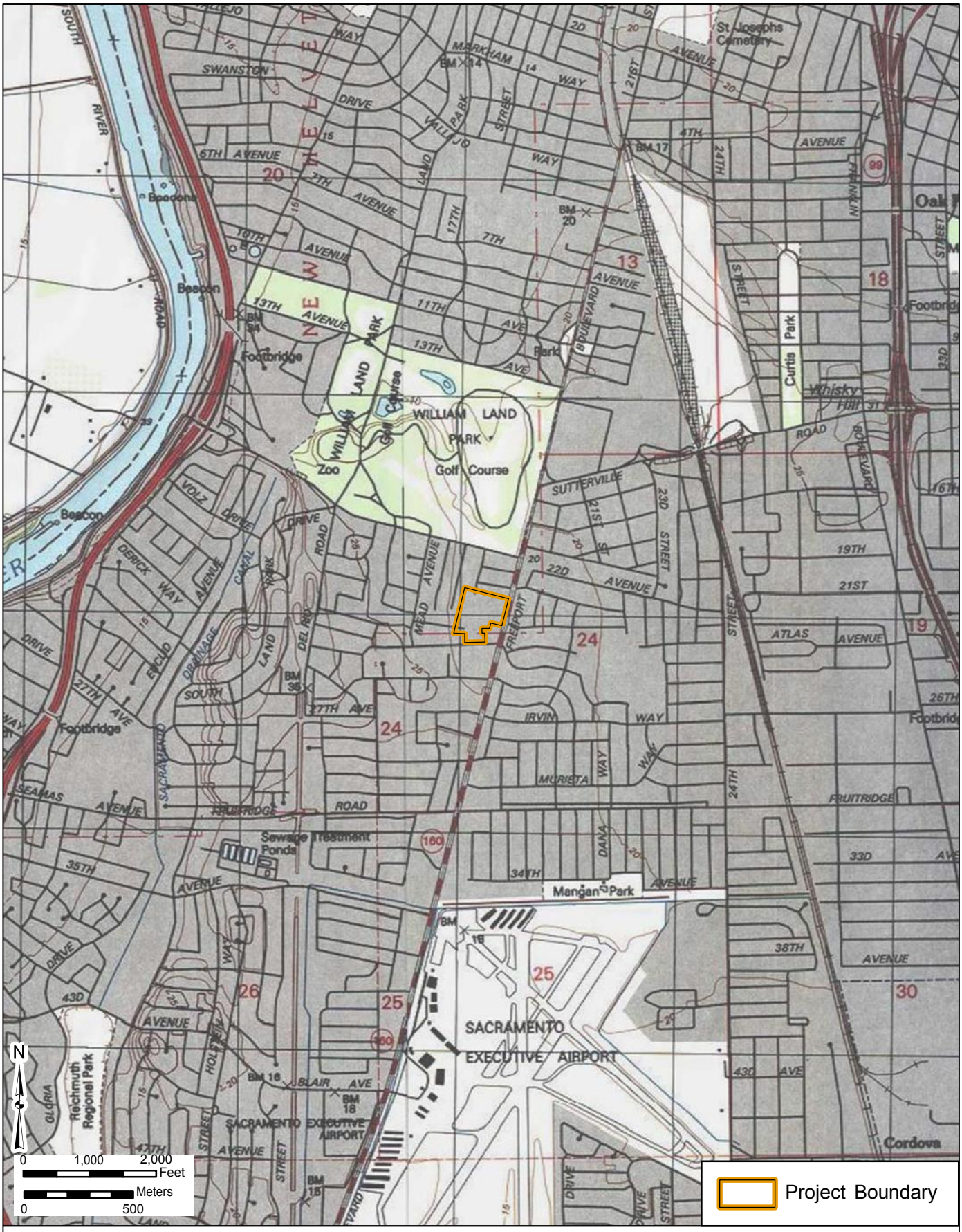

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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Daniel Fonseca, Cultural Resource Director
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Fonseca,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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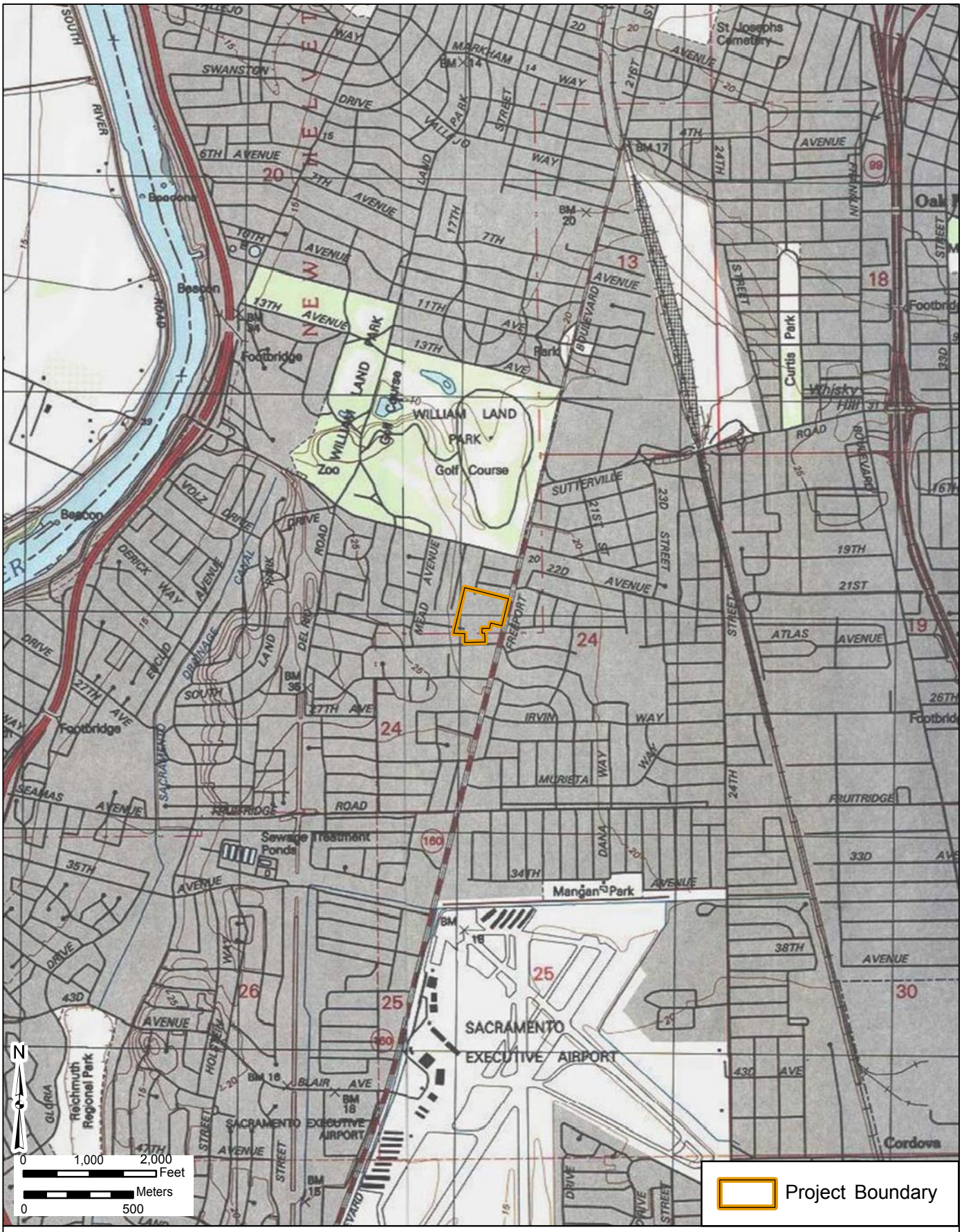

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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Nicholas Fonseca, Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Fonseca,

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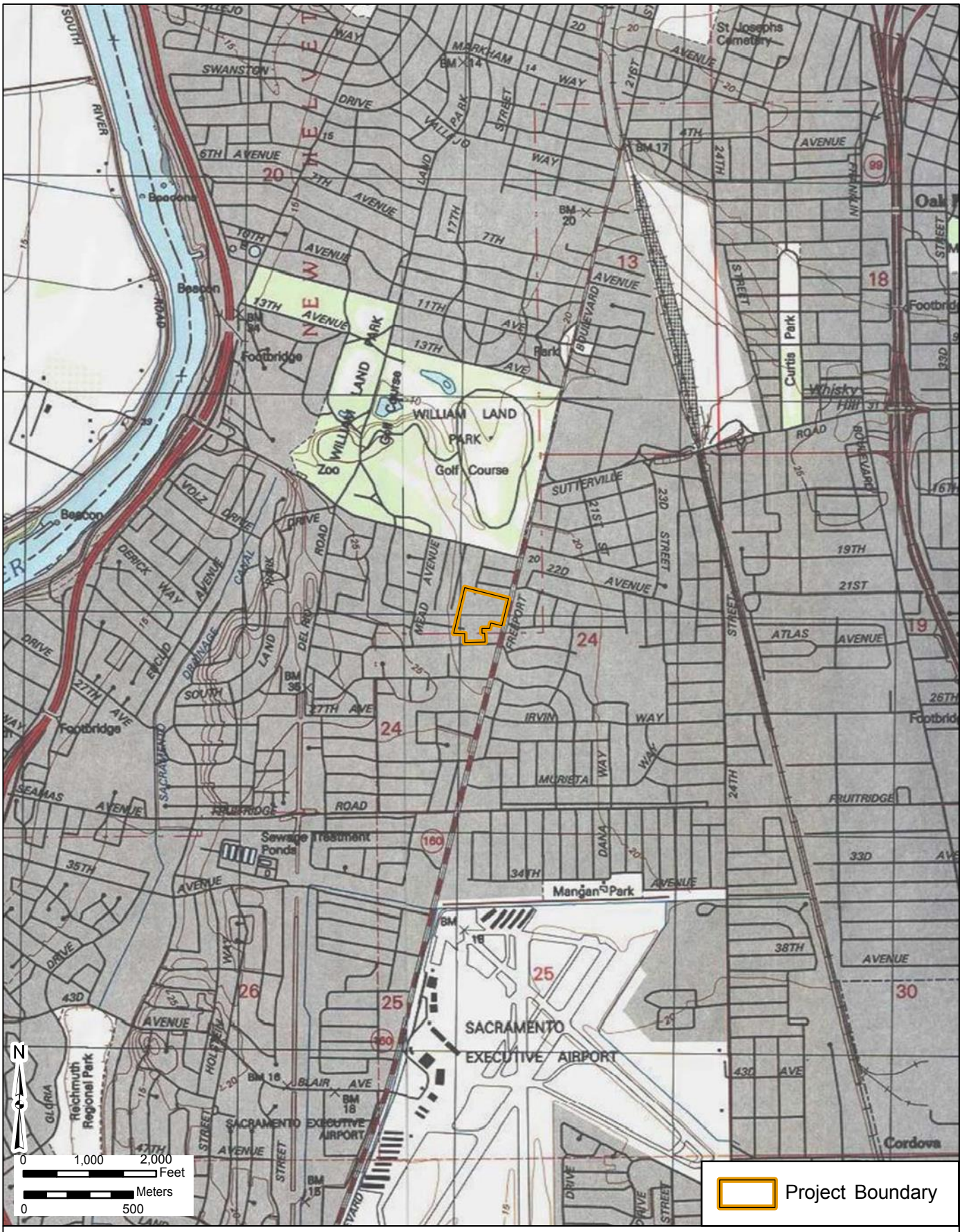

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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Marcos Guerrero, Tribal Preservation Committee
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Guerrero,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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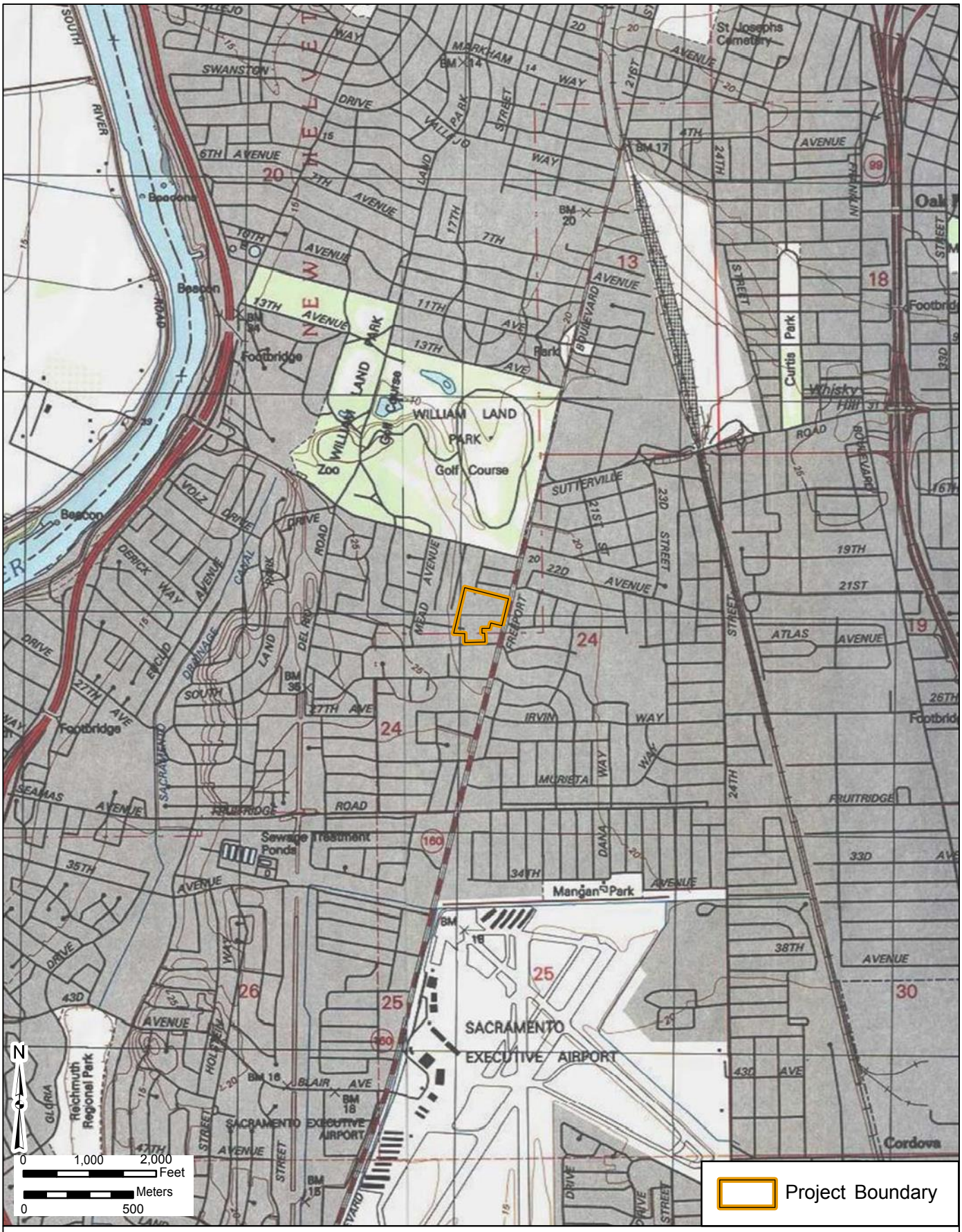

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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Ms. Judith Marks,
Colfax-Todds Valley Consolidated Tribe
1068 SilvertonCircle
Lincoln, CA 95648

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Ms. Marks,

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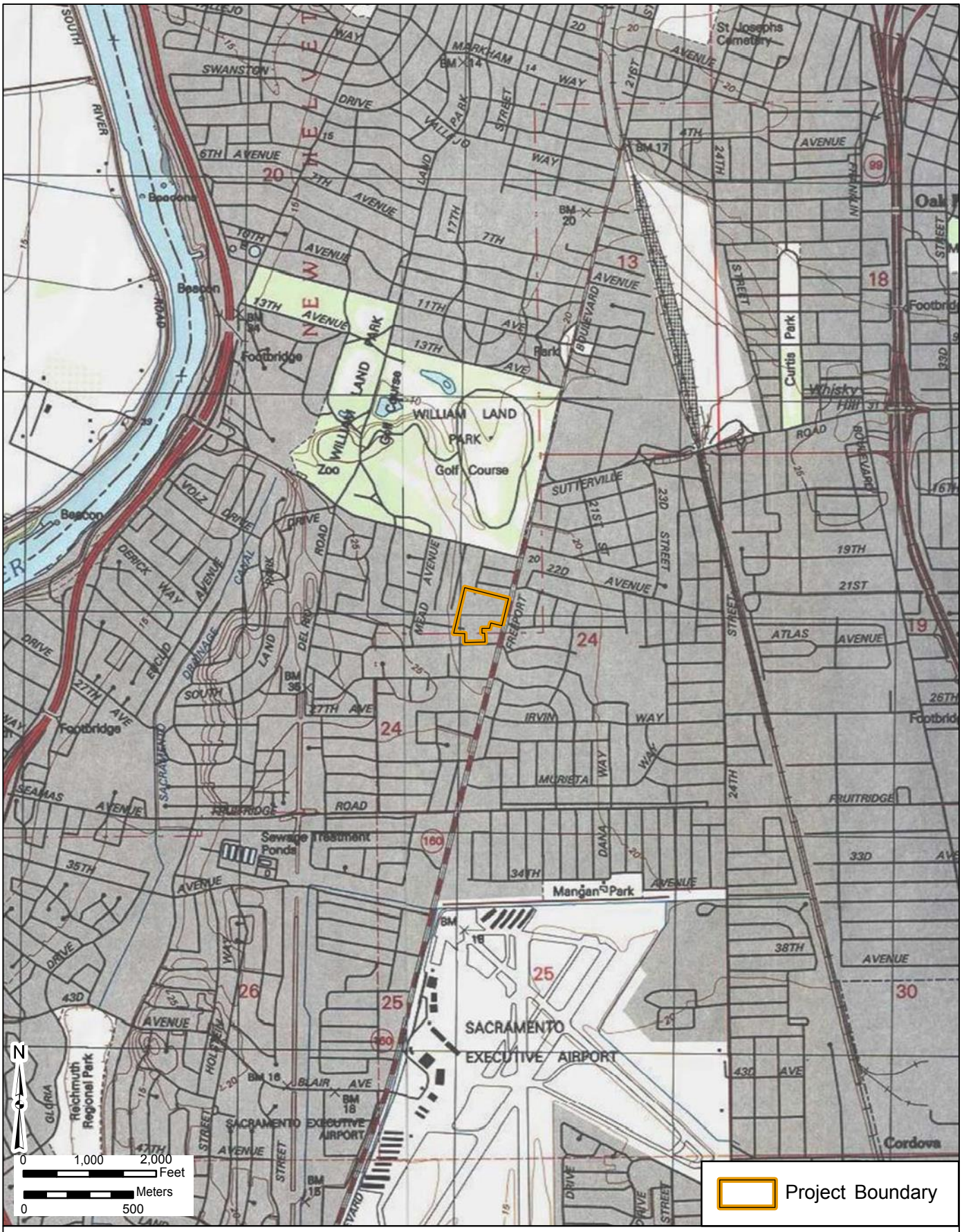

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LAND PARK RALEYS

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38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Ms. Eileen Moon, Vice Chairperson
T'si-Akim Maidu
P.O. Box 1246
Grass Valley, CA 95945

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Ms. Moon,

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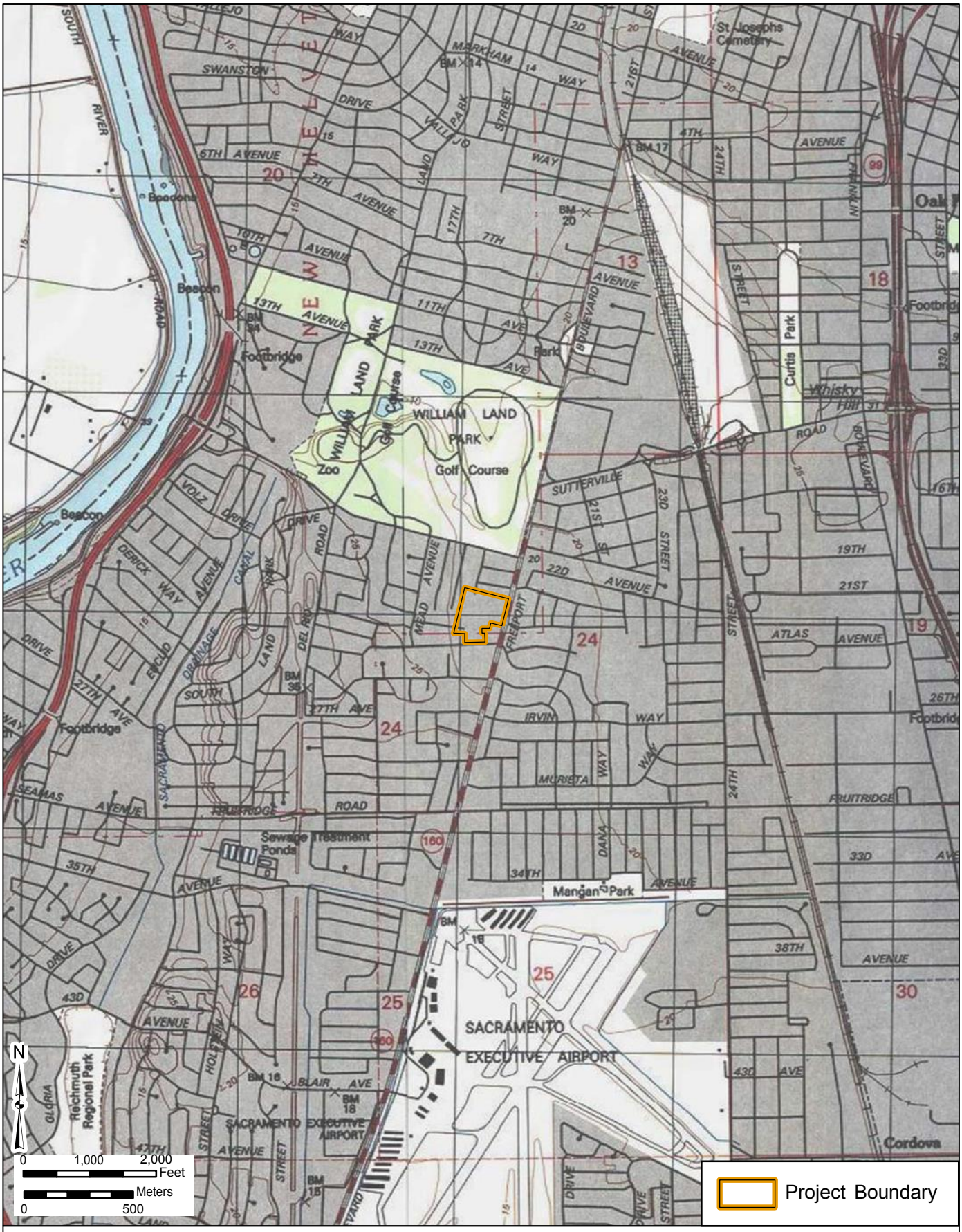

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LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Ms. April Wallace Moore,
Nisenan
19630 Placer Hills Road
Colfax, CA 95713

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

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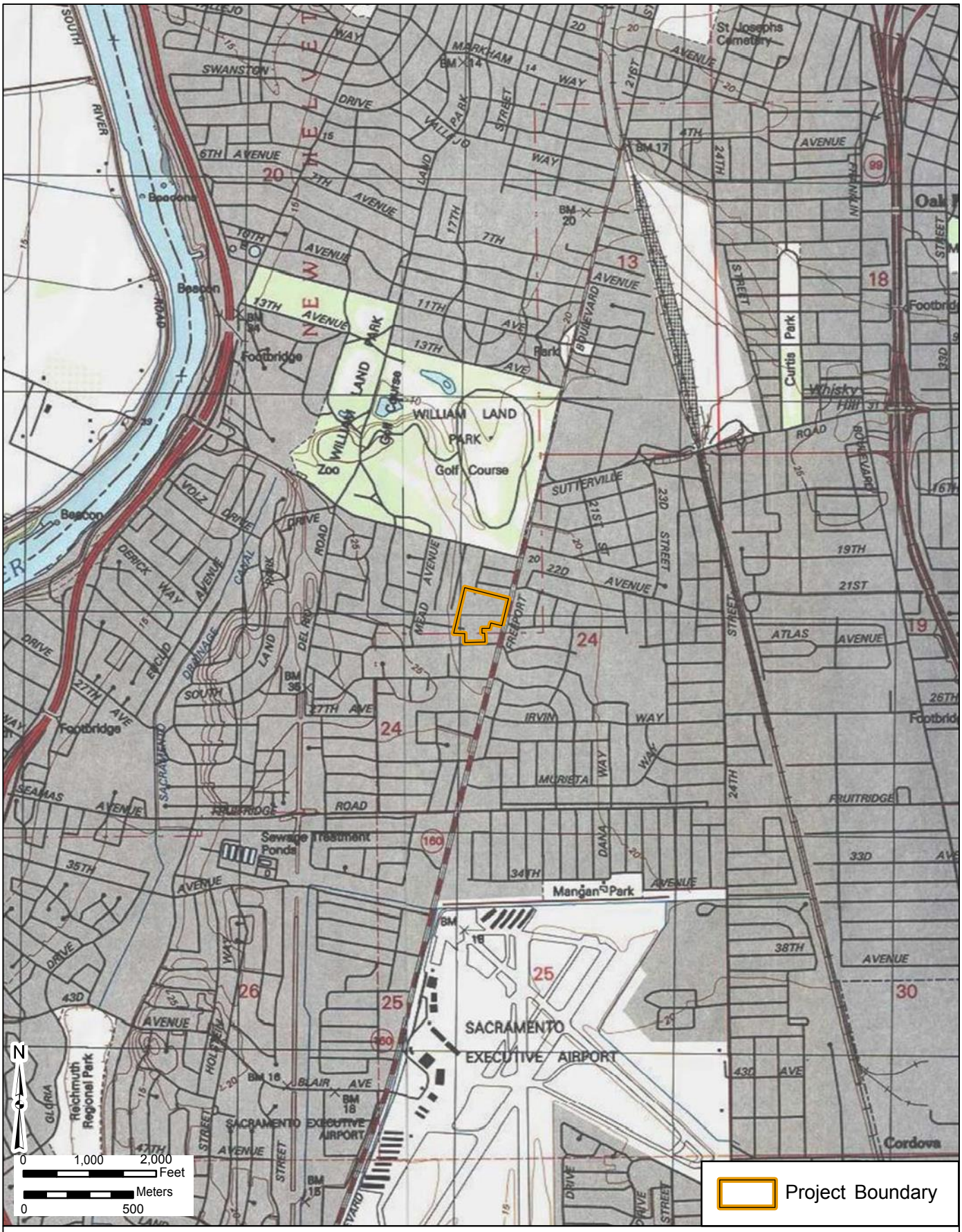

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T 626.674.6864

September 22, 2015

Mr. Hermo Olanio, Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Olanio,

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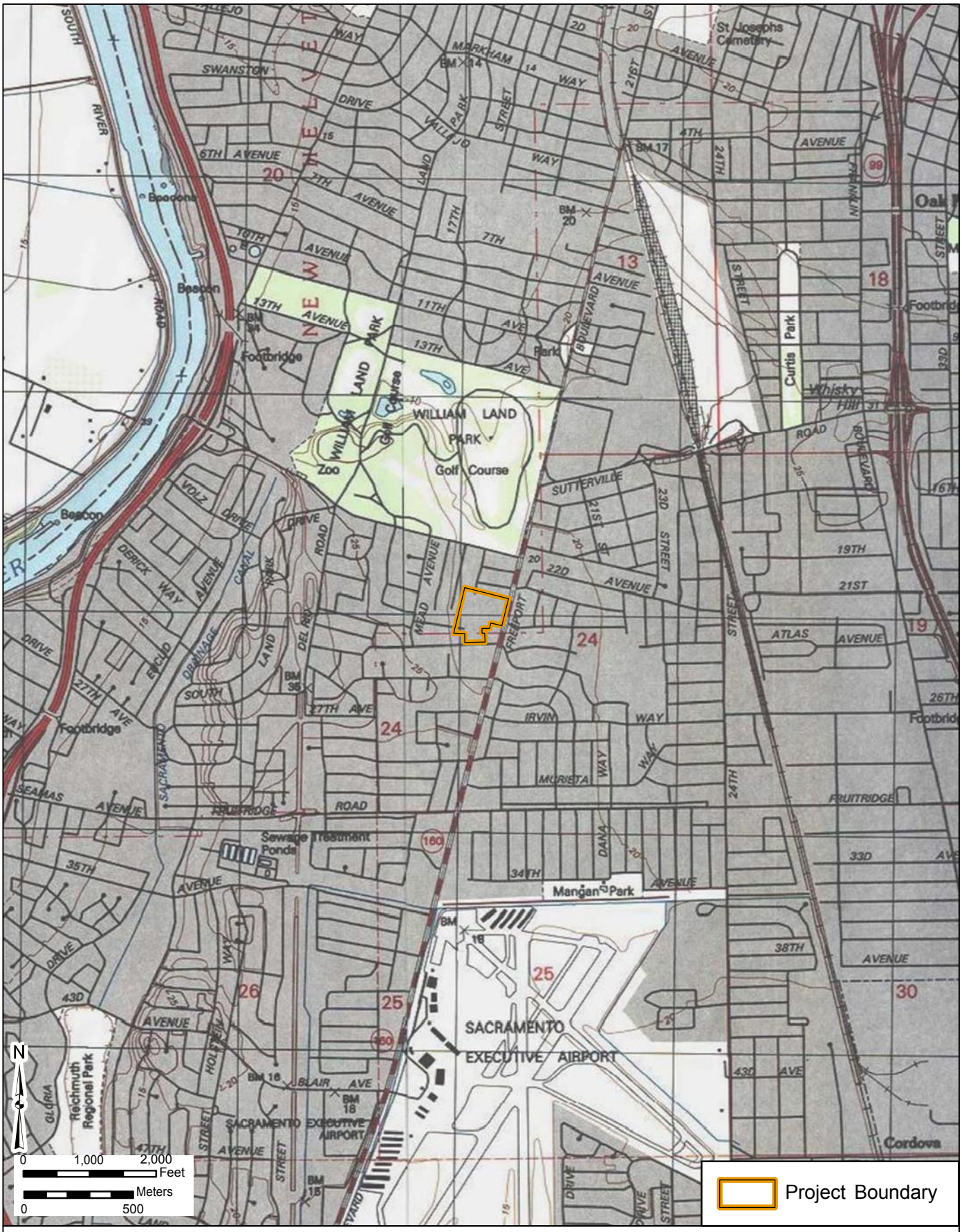


SOURCE: USGS Topo 7.5 Minute Series - Sacramento West & Sacramento East Quadrangle
Township 8N / Range 4E / Section 24

Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Don Ryberg, Chairperson
T'si-Akim Maidu
P.O. Box 1246
Grass Valley, CA 95945

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Ryberg,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

Project Description and Location

The project applicant is proposing to construct an approximately 108,000 square foot (sf) retail center near the corner of Freeport Boulevard and Wentworth Avenue on the former Capital Nursery site. The retail center proposes a 55,000 sf grocery store with up to 53,000 sf in complimentary retail uses along with parking and landscaping.

The project area is located at 4700 Freeport Boulevard in Sacramento, California. The project area is bounded by residential housing to the north, Wentworth Avenue to the south, Freeport Boulevard and two existing bank buildings to the east, and residential housing to the west. The project area falls within Section 24 of Township 8 North, Range 4 East of the Sacramento East, California 7.5' USGS Quadrangle Map (see enclosed map).

If you have knowledge of cultural resources that may exist within or near the project area, please contact me directly at (626) 204-9826, smurray@dudek.com, or at the above address at your earliest convenience.

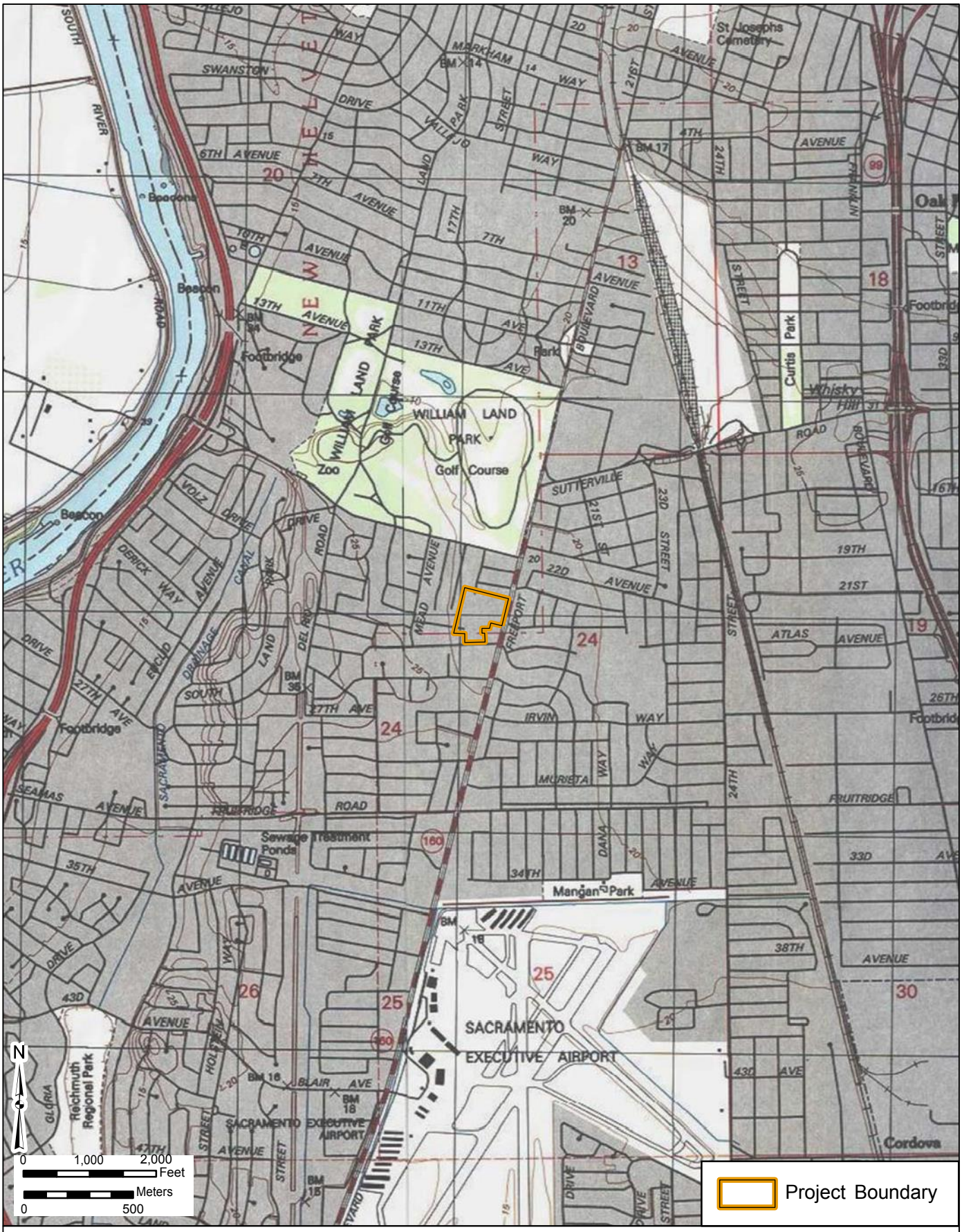
Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. AB 52 is a process between the CEQA lead agency (the City of Sacramento) and California Native American Tribes concerning potential impacts to tribal cultural resources. Tribes that wish to be notified of projects for the purposes of AB 52 must contact the City in writing pursuant to Public Resources Code Section 21080.3.1(b).

Thank you for your assistance.

Sincerely,

Samantha Murray, M.A., RPA
Archaeologist

Attachment: Project Location Map



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Project Location Map

LAND PARK RALEYS

DUDEK

38 NORTH MARENGO
PASADENA, CALIFORNIA 91101
T 626.674.6864

September 22, 2015

Mr. Gene Whitehouse, Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Subject: ***Cultural Resources Study for the Land Park Raley's Project EIR, Sacramento, California.***

Dear Mr. Whitehouse,

Dudek has been retained to prepare a cultural resources study for the Land Park Raley's Project Environmental Impact Report (EIR) (the proposed project) located at 4700 Freeport Boulevard in Sacramento, California. As part of the process of identifying cultural resources issues for this project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the project area. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area." However, the NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project.

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Samantha Murray, M.A., RPA
Archaeologist

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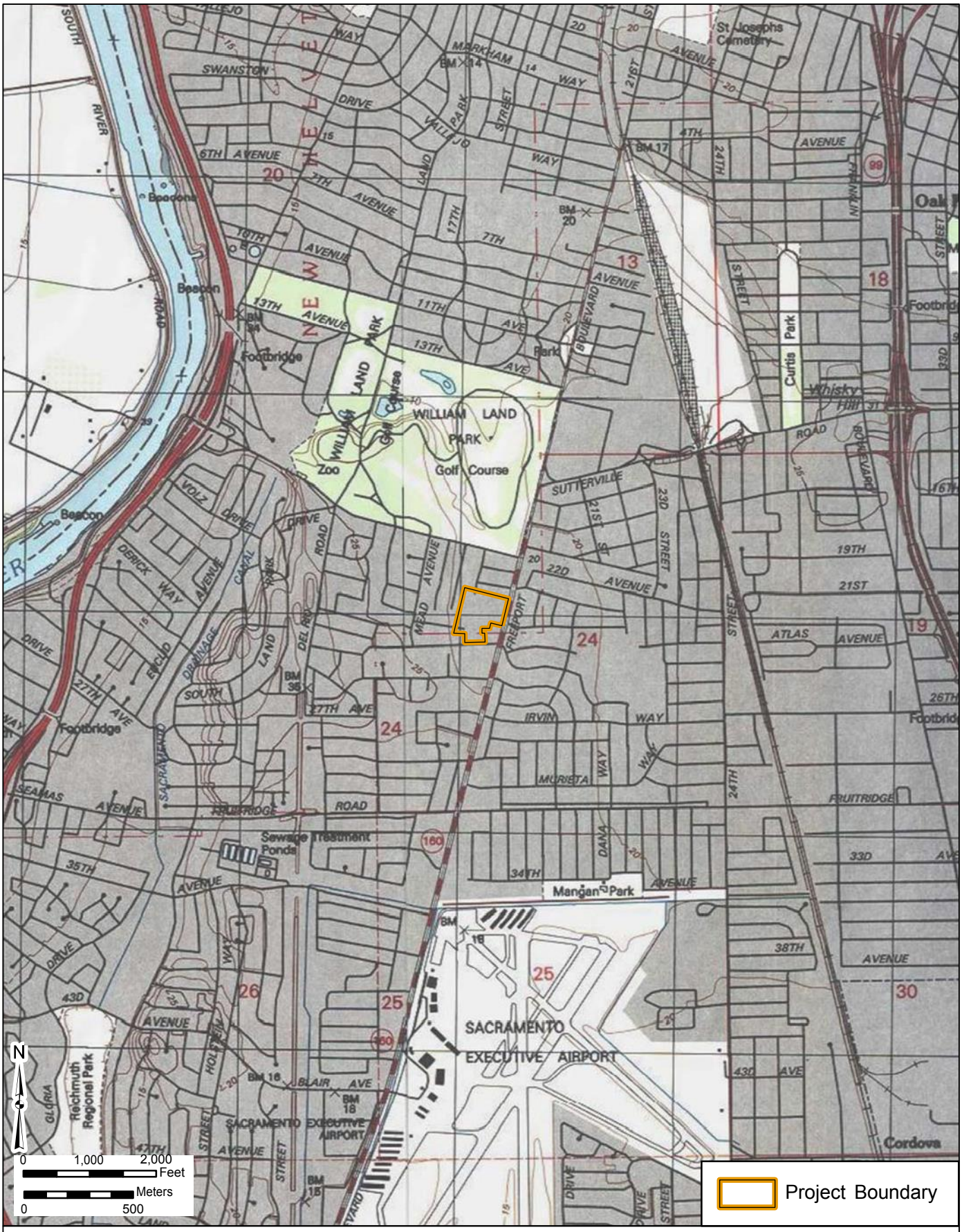

SOURCE: USGS Topo 7.5 Minute Series - Sacramento West & Sacramento East Quadrangle
Township 8N / Range 4E / Section 24

Project Location Map

LAND PARK RALEYS

APPENDIX E

Site Assessment Reports

Project No. S9695-06-01
June 13, 2012

Helen Singmaster
General Counsel and Corporate Secretary
Raley's, Inc.
500 West Capitol Avenue
West Sacramento, California 95605

Subject: ATTORNEY WORK PRODUCT
PHASE I ENVIRONMENTAL SITE ASSESSMENT
CAPITAL NURSERY
4700 FREEPORT BOULEVARD
ASSESSOR'S PARCEL NUMBER 017-0121-001-0000
SACRAMENTO, CALIFORNIA

Dear Ms. Singmaster:

In accordance with your request, we have performed a Phase I Environmental Site Assessment (ESA) of the Capital Nursery and associated property at 4700 Freeport Boulevard (the Site) in Sacramento, Sacramento County, California. The Site consists of an approximate 9-acre property developed as Capital Nursery – a retail nursery. We performed the Phase I ESA to provide information regarding the potential for existing hazardous substances or petroleum hydrocarbon impacts at the Site as part of Raley's due diligence process prior to purchasing the Site.

This report summarizes the findings of the Phase I ESA including the potential presence of recognized environmental conditions as defined by the American Society for Testing and Materials *Designation E1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

We understand all work performed by Geocon is at the direction and supervision of Raley's In-House Counsel and Downey Brand and is privileged and confidential under the attorney work-product doctrine. We appreciate the opportunity to have provided our services on this project. Please contact us if you have any questions regarding this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Matthew Tidwell
Staff Geologist

Jim Brake, PG
Senior Geologist/Associate

(1) Addressee
(1) Downey Brand, Nicole Gleason
(1) Downey Brand, Matt Ellis
(1) Bob Henderson

TABLE OF CONTENTS

PHASE I ENVIRONMENTAL SITE ASSESSMENT PAGE

TABLE OF CONTENTS (continued)

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1.0 INTRODUCTION

This report presents the results of a Phase I Environmental Site Assessment (ESA) of the Capital Nursery and associated property at 4700 Freeport Boulevard (the Site) in Sacramento, Sacramento County, California. The Phase I ESA was performed at the request of Raley's, Inc. (the Client) as part of their due diligence process prior to purchasing the Site.

1.1 Purpose and Objectives

The purpose of the Phase I ESA was to identify "recognized environmental conditions" (RECs) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* Section 1.1.1 of the ASTM *Designation E 1527-05* defines an REC as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property." The term as further defined by ASTM "is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of the enforcement action if brought to the attention of appropriate governmental agencies." "Historical RECs" are defined as an "environmental condition, which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently."

The Phase I ESA was also conducted in accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries,* as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The main components of this report and their objectives, as specified by the referenced standards, include the following:

- **Physical Setting:** The objective of reviewing physical setting references was to obtain information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of the direction and/or extent that a contaminant could migrate in the event of a spill or release.

- **Records Review:** The objective of the records review was to obtain information that could potentially help identify RECs at or potentially affecting the Site. We reviewed publicly available Federal, State, and local regulatory agency records for the Site.
- **Site History:** The objective of consulting historical references was to assess the history of previous uses of the Site and surrounding area to identify those that could have led to RECs on or near the Site. Historical sources reviewed included aerial photographs, topographic maps, and previous site assessment reports. In addition, we conducted interviews with persons who were expected to be reasonably knowledgeable about historical and/or current conditions at and uses of the Site.
- **Site Reconnaissance:** The objective of the site reconnaissance was to observe site conditions and activities for indications of evidence of RECs. The site reconnaissance was for the Site only. Offsite properties and features were viewed solely from the vantage of the Site and public thoroughfares.

1.2 Scope of Services

Our Proposal No. LS-12-079 dated April 9, 2012, presents the scope of services for this Phase I ESA. The scope of services outlined in the proposal was performed with the exception that Sanborn Maps were not reviewed. Environmental Data Resources, Inc. (EDR), an environmental data search firm, stated that Sanborn Map coverage does not exist for the Site.

1.3 Report Limitations

The Phase I ESA report has been prepared exclusively for the Client, Raley's Inc. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and would require an update to reflect subsequent records reviews/site visits after a period of 180 days.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, a review of the specified regulatory records, and a review of the historical usage of the Site, as presented in this report. The Client should also understand that wetlands, asbestos-containing building materials, lead-containing paint, lead in drinking water, radon, mercury related to mining activities, methane, and mold surveys were not included in the scope of services for this Phase I ESA. Assessment for potential naturally occurring hazards such as asbestos and arsenic also was not included.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the Phase I ESA is implied within the intent of this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

A data gap is defined by ASTM *Designation E 1527-05* as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge (e.g., the owner(s), past owner(s), tenants, workers, etc.) or the lack of access to all parts of a site during the site reconnaissance.

Sanborn Maps were not reviewed for the Site since EDR stated that Sanborn Map coverage was not available. Based on our review of additional historical information sources, not reviewing Sanborn Maps did not result in data gap.

2.0 SITE DESCRIPTION

This section provides information regarding the location and physical characteristics of the Site including its size, topography, geologic, soil, and hydrogeologic conditions.

2.1 Location and Legal Description

The Site is located at 4700 Freeport Boulevard, between the Meer Way/Freeport Boulevard intersection and the Wentworth Avenue/Freeport Boulevard intersection in Sacramento, Sacramento County, California (Figure 1). The Site is identified by Sacramento County Assessor's Parcel Number (APN) 017-0121-001-0000. A parcel map is in Appendix A.

The Site is depicted on the United States Geological Survey's (USGS) *Sacramento East, California* 7.5-minute topographic map (USGS, 1992) in the southeastern quarter of Section 20 of Township 8 North, Range 4 East, Mt. Diablo Base and Meridian.

2.2 Site and Vicinity General Characteristics

The Site is an approximate 9-acre property developed as a retail nursery and landscape design business. Figure 2 is a Site Plan depicting the site boundaries. The Site is surrounded by commercial and residential development.

2.2.1 Topography

The topography of the Site is nearly flat-lying at an approximate elevation of 20 feet above mean sea level based on the USGS Sacramento East topographic map (USGS, 1992).

2.2.2 Geologic Conditions

Information concerning the geologic conditions at and in proximity to the Site was obtained from *California Geology* (Harden, 2003) and the *Geologic Map of the Sacramento Quadrangle* (California Division of Mines and Geology, 1981). The Site is located in the northern portion of the Great Valley Geomorphic Province, or what is more commonly referred to as the Sacramento Valley. The Sacramento valley is bounded by the Sierra Nevada and southern Cascade Range to the east and the Coast Ranges and Klamath Mountains to the west. The Sacramento Valley is filled with a thick sequence of Jurassic to recent age sedimentary deposits both continental and marine in origin.

The referenced geologic map indicates that the Site is underlain by the Pleistocene Riverbank Formation. This formation is mainly comprised of granitic alluvium derived from streams draining the western slope of the Sierra Nevada.

2.2.3 Soil Conditions

Information concerning the soil conditions at and in proximity to the Site was obtained from the United States Department of Agriculture (USDA) Web Soil Survey (http://websoilsurvery.nrcs.usda.gov/app/WebSoilSurvey.aspx). The Web Soil Survey information reviewed indicates that surficial onsite soil belongs to the San Joaquin-Urban land complex, which is a moderately well drained silt loam to clay loam that formed on terraces from alluvium derived from granite. The urban land component refers to soils completely covered and likely affected by development (i.e., graded, reworked).

2.2.4 Hydrogeologic Conditions

In an effort to assess local groundwater conditions, we searched the California State Water Resources Control Board (SWRCB) GeoTracker website (http://geotracker.waterboards.ca.gov) for groundwater information at the nearest facility with a groundwater monitoring array such as leaking underground storage tank (LUST) facilities. The depth to groundwater measured in six groundwater monitoring wells at the Come & Go service station at 4516 Freeport Boulevard, approximately 180 feet northeast of the Site, ranged from 19 to 20 feet in March 2007. Geocon performed groundwater investigation and monitoring at this facility until 2007. The direction of groundwater flow at this former gas station was determined to be to the southeast (Geocon Consultants Inc., March 2007).

2.3 Current and Planned Uses of the Site

The Site is currently occupied by Capital Nursery - a retail nursery. Further description of the current state of the property is presented in Section 6.0. The Client is planning to redevelop the Site with a Raley's grocery store.

2.4 Descriptions of Structures, Roads, Other Improvements on the Site

The western and northern portions of the Site are used to store plants and landscaping products. The eastern portion of the Site is developed with greenhouses, a retail store, offices, and a parking lot. The central and southern portions of the Site are developed with several buildings used for a variety of functions related to nursery operations and administration. Paved and unpaved lanes for vehicle and equipment access are present throughout the Site. A more detailed description of the Site is found in Section 6.0.

Electric power is supplied to the Site by the Sacramento Municipal Utility District. The City of Sacramento supplies potable water to the Site. The Sacramento Area Sewer District provides sewer service to the Site. The Site is vehicle accessible from Freeport Boulevard to the east.

2.5 Current Uses of Adjoining Properties

Adjoining properties are developed with a mix of commercial and residential uses (Figure 2). Adjoining properties to the north of the Site are primarily residences along Meer Way and a multi-tenant commercial building adjacent to the northeastern portion of the Site. Across Freeport Boulevard to the east of the Site are several commercial buildings. Adjoining properties to the south of the Site are residences along Wentworth Avenue and a Bank of America adjacent to the southeastern portion of the Site. Residences along Sherwood Avenue and Marion Court are adjacent to the west of the Site.

3.0 USER–PROVIDED INFORMATION

This section describes site information provided by the Client. A user questionnaire was provided to and completed by the Client. A copy of the user questionnaire is in Appendix B.

3.1 Title, Appraisal and Sale Agreement Records

A preliminary title report, chain-of-title, appraisal and sales agreement records for the Site were not provided by the Client.

3.2 Environmental Liens or Activity and Use Limitations

No information regarding environmental liens on, or use limitations for, the Site was provided by the Client.

3.3 Specialized Knowledge

The Client indicated that they have no specialized knowledge regarding uses of the Site that could potentially impair the environmental conditions of the Site.

3.4 Commonly Known or Reasonably Ascertainable Information

The Client has no commonly known information or reasonably ascertainable information unique to the Site.

3.5 Valuation Reduction for Environmental Issues

The Client indicated that they were not aware of any environmental conditions on the Site which could lead to a potential valuation reduction of the Site.

3.6 Owner, Property Manager, and Occupant Information

We interviewed Charles Armstrong, the current site owner, to obtain information regarding the past use of the Site. Interview information is presented in Section 7.0.

3.7 Reason for Performing the Phase I ESA

This Phase I ESA was requested by the Client to obtain information regarding the potential for existing hazardous substances or petroleum hydrocarbon impacts at the Site prior to purchasing the Site.

4.0 RECORDS REVIEW

This section summarizes our review of readily available agency records for the Site and properties and facilities in the surrounding vicinity.

4.1 Standard Environmental Record Sources

EDR performed a search of Federal, State, and local databases for the Site and surrounding area. The search distance for the review extended one mile from the Site. A copy of the report entitled *The EDR Radius Map Report with GeoCheck*, dated April 23, 2012, is in Appendix C. The following table lists databases that were searched and the number of listings.

Database Name	Search Radius (Miles)	Number of Listings
FEDERAL DATABASES		
RCRA-SQG	0.25	4*
STATE, LOCAL, AND TRIBAL DATABASES		
ENVIROSTOR	1.0	4
LUST	0.5	11
Sacramento Co. CS	0.5	6
UST	0.25	2
AST	0.25	1*
ADDITIONAL ENVIRONMENTAL RECORDS		

Database Name	Search Radius (Miles)	Number of Listings
CA FID UST	0.25	1*
HIST UST	0.25	4*
SWEEPS UST	0.25	3*
FINDS	Target Property	1*
HIST CORTESE	0.5	5
Notify 65	1.0	1
Sacramento Co. ML	0.25	18*
EDR PROPRIETARY DATABASES		
EDR Historical Auto Stations	0.25	8
EDR Historical Cleaners	0.25	6
* Indicates that the Site is listed in the database.		

4.1.1 Site

The Site is referenced on the RCRA-SQG, FINDS, CA FID UST, HIST UST, AST, SWEEPS UST, and the Sacramento County Master List (ML) databases under Capital Nursery Co. The following discussion summarizes the pertinent information for the Site in each of these databases:

RCRA-SQG – This database lists the Site as a small-quantity generator in 1996. It was previously listed as a large-quantity generator in 1987. According to this database, no violations were reported. No other pertinent information about the Site is listed.

FINDS – This database listing provides only a registry ID for the Site. No other pertinent information about the Site is provided.

CA FID UST – No pertinent information about the Site is provided in this database.

HIST UST – According to this database, the Site contained one 1,000-gallon unleaded gasoline underground storage tank (UST) and one 2,000 gallon diesel UST. The diesel UST was installed in 1977. No other pertinent information about these USTs is provided. Additional information regarding USTs on the Site is presented in Section 4.2.1.

AST – According to this database, the Site contains one 1,720-gallon aboveground storage tank (AST). No other pertinent information about the Site is provided.

SWEEPS UST – According to this database, the Site contained one 1,000-gallon unleaded gasoline UST and one 2,000-gallon regular gasoline UST. Additional information regarding USTs on the Site is presented in Section 4.2.1.

Sacramento County ML – According to this database, the Site has its oil disposed of by an outside company. No other pertinent information is provided.

4.1.2 Offsite Properties

The following discussion provides additional information regarding properties listed on the databases searched by EDR that are located less than ⅛-mile from the Site (¼-mile for LUST facilities) the status of their listings, and their potential, if any, to impact (or to have impacted) the Site.

Massey's Flying A Service, 4701 Freeport Boulevard – this former service station facility was 434 feet southeast (downgradient) of the Site. It is listed on the EDR Historical Auto Stations database as having been in service in 1952. No other pertinent information is listed for this facility. Based on its downgradient position relative to the Site, this facility is unlikely to have impacted the Site.

Duffy's Cleaners, 4643 Freeport Boulevard – this former dry cleaning facility was 462 feet east (cross- to downgradient) of the Site. It is listed on the RCRA-SQG, FINDS, Sacramento Co. ML, HAZNET, ENVIROSTOR, and EDR Historical Cleaners databases. This facility reportedly operated from about 1960 to 1996. It was a small-quantity generator of halogenated solvents (chloroform, methyl chloride, perchloroethylene [PCE], etc). Based on the lack of reported violations and its downgradient position relative to the Site, this facility is unlikely to have impacted the Site.

Kwong's Shell Service, 4790 Freeport Boulevard – this former service station facility was 528 feet southeast (downgradient) of the Site from the Site. It is listed on the EDR Historical Auto Stations database as having operated from 1952 to 1980. Based on its downgradient position relative to the Site, this facility is unlikely to have impacted the Site.

Pickvet Dallas F, 4500 Babich Avenue – this former service station facility was reportedly located 537 feet northwest (upgradient) of the Site. It is listed on the EDR Historical Auto Stations database. This former auto station reportedly operated in 1975. This location is currently a residence that appears to pre-date 1975, so this listing may be in error regarding the location of the former service station. However, based on the distance of this location from the Site, it is unlikely to have impacted the Site.

Chevron #9-1561, 4800 Freeport Boulevard – this facility was 552 feet southeast (downgradient) of the Site. It is listed on LUST, HIST UST, SWEEPS UST, HAZNET, UST, RCRA-SQG, FINDS, Sacramento Co. ML, and Sacramento Co. Contaminated Sites (CS) databases. The LUST incident was reported in June 2003 and is currently open. Contaminated groundwater is present at and downgradient of this facility. More information about this facility is provided in Section 4.2.4. Based on this

facility's downgradient position relative to the Site and existing information regarding the extent of contamination in groundwater, this facility is unlikely to impact the Site.

Corfee's Laundry & Dry Cleaners, 4802 Freeport Boulevard – this former dry cleaning facility was 559 feet south-southeast (downgradient) of the Site. It is listed on the EDR Historical Cleaners database. This former cleaner was in service in 1966. Based on the downgradient position of this former facility relative to the Site, it is unlikely to have impacted the Site.

Pay-Less Cleaners, 4528 Freeport Boulevard – this former dry cleaning facility was 576 feet north-northeast (crossgradient) of the Site. It is listed on the EDR Historical Cleaners database. This former cleaner was in service from 1956 to 1980. Based on its distance from and crossgradient position relative to the Site, this former facility is unlikely to have impacted the Site.

Suds & Duds Launderette, 4524 Freeport Boulevard – this former facility was 584 feet north-northeast (crossgradient) of the Site. It is listed on the EDR Historical Cleaners database. This facility reportedly operated from 1956 to 1975. Based its distance from and crossgradient position relative to the Site, this former facility is unlikely to have impacted the Site.

Come & Go Market, 4500 Freeport Boulevard (AKA 4516 Freeport Blvd) – this gas station facility is 744 feet north-northeast (crossgradient) of the Site. It is listed on the LUST, UST, EDR Historical Auto Stations, Sacramento Co. ML, and Sacramento Co. CS databases. The LUST incident was reported in September 1999 and groundwater was affected at and downgradient of the facility. Geocon conducted quarterly groundwater monitoring at this former facility from 2004 to 2007. The case was closed by the Sacramento County Environmental Management Department (SCEMD) in August 2007. Based on this facility's crossgradient position relative to the Site, available information regarding the extent of contamination in groundwater, and its closed status, this facility is unlikely to have impacted the Site.

Arco #2124 (Former), 4400 Freeport Boulevard – this facility was 1,046 feet north-northeast (crossgradient) of the Site. It is listed on the LUST, HIST CORTESE, HIST UST, Notify 65, EDR Historical Auto Stations, Sacramento Co. ML, and Sacramento Co. CS databases. The LUST incident was reported in August 1988, and groundwater was affected. The case was closed in May 1999. Based on this facility's distance from and crossgradient position relative to the Site, information regarding the extent of contamination in groundwater, and its closed status, this facility is unlikely to have impacted the Site.

4.1.3 Orphan Summary

The *Orphan Summary* identifies properties that have incomplete address information and could not be specifically plotted. A total of 20 properties were listed in the *Orphan Summary*. Based on information

provided in the report for the listed properties, their locations, and the databases on which the properties were listed, no significant adverse impact to the Site is expected from the properties identified on the *Orphan Summary*.

4.2 Additional Environmental Record Sources

4.2.1 Sacramento County Environmental Management Department Records

SCEMD records indicate that Capital Nursery had two permitted USTs installed in March 1987 consisting of one 2,000-gallon regular gasoline and one 1,000-gallon unleaded gasoline. In July 1991, the SCEMD granted authority to Oil Equipment Services to remove the two USTs and deliver them to Triangle Inc. of Sacramento for disposal. SCEMD records do not indicate that a release from the USTs had occurred. There were also no records found indicating that any further action was taken by SCEMD after the USTs were removed. Further information provided by the site owner regarding the former USTs is summarized in Sections 4.2.2 and 7.

4.2.2 Capital Nursery Records

Mr. Armstrong provided us with copies of Capital Nursery's records regarding the two former USTs. The 1,000-gallon UST was located adjacent to the south side of Building I and west of Building J (Figure 2), and the 2,000-gallon UST was approximately 50 feet southwest of the 1,000-gallon UST.

According to the report: *Confirmation Sampling Results for Underground Tank Removal* prepared by Wheeldon & Associates and dated February 1992, Oil Equipment Services, Inc., removed the USTs and associated pumps in January 1992. Wheeldon & Associates reported that they observed no holes or evidence of leaks in the USTs. Following removal of the USTs, Wheeldon & Associates collected soil samples from the excavations where the USTs were located and had them analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and xylenes (BTEX). TPHg was detected at a concentration of 980 milligrams per kilogram (mg/kg) in a soil sample collected from beneath the former pumps (adjacent to the south wall of Building I) for the 1,000-gallon UST, at 2 mg/kg from beneath the former 1,000-gallon UST, and at a maximum concentration of 50 mg/kg in a soil sample collected from beneath the former 2,000-gallon UST. Benzene was not detected in the soil sample collected from beneath the pumps but was detected at 0.01 mg/kg in the soil sample from beneath the former 1,000-gallon UST, and at 0.01 mg/kg from beneath the former 2,000-gallon UST. Soil excavated for the UST removal was reportedly placed back into the excavation.

According to Wheeldon & Associates' report: *Confirmation Sampling Results for Capital Nursery,* dated September 7, 1993, soil that had been placed back in the excavation for the 2,000-gallon UST was re-excavated in July 1993. This excavation was also enlarged slightly to the north, east, and south and deepened to approximately 15 feet. Two confirmation soil samples were collected from the base of

the deepened excavation and analyzed for TPHg and BTEX. Analysis results for both soil samples were reportedly non-detect. Wheeldon & Associates recommended that soil samples be collected from the sidewalls to assess the lateral extent of impacts (no explanation was provided for why sidewalls samples were not collected at this time). Additional excavation was planned for the former 1,000-gallon UST area as well, but the presence of several underground utilities reportedly prevented this. Wheeldon & Associates recommended that further sampling be conducted in the area of the impacts beneath the former pumps for the 1,000-gallon UST.

In their report: *Sample Results from 11/10/93 Sampling at Capital Nursery*, dated February 8, 1994, Wheeldon & Associates reports that hand excavation and soil sampling was performed in the area of the former pumps for the 1,000-gallon UST. Soil samples were collected at depths ranging from 5.5 to 12 feet in this area. TPHg was detected in one soil sample at 460 mg/kg, but results for all other samples were reported as non-detect and benzene was not detected in any of the soil samples. Wheeldon & Associates estimated that approximately 40 to 50 cubic yards of soil in this area were impacted. They concluded that the SCEMD would have to determine if impacted soil could be left in place given the difficulties of excavation in this area or if it had to be removed.

The last of the documents provided by Capital Nursery are a purchase order from Capital Nursery and two invoices from Forward, Inc., a disposal facility near Stockton, California, for disposal of 108 cubic yards of impacted soil on March 31 and April 1, 1994. It is not clear if this was related to the stockpiled soil referenced in the September 7, 1993, report or soil that may have been excavated from the former pump area referenced in their February 8, 1994, report. Copies of pertinent documents from Capital Nursery's records are in Appendix D.

Based on the lack of records (both in those reviewed at SCEMD and those provided by Capital Nursery) indicating closure of this UST case by the SCEMD, the status of conditions in soil and groundwater beneath the former USTs is unknown. Therefore, the potential presence of residual impacts beneath the former USTs is considered an REC in relation to the Site.

4.2.3 GeoTracker Database Review

We reviewed GeoTracker for information regarding environmental assessment and cleanup at the Site or at properties/facilities within a quarter mile of the Site. No information for the Site was available on GeoTracker.

Chevron #9-1561, 4800 Freeport Boulevard – as referenced in Section 4.1.2, this former gas station was 552 feet southeast (downgradient) of the Site and is currently an open LUST case. The LUST was reported in June 2003 and groundwater was affected at and downgradient from this former facility. According to the most recent quarterly groundwater monitoring report dated January 2012, petroleum hydrocarbons are still

present beneath the former facility as well as 270 feet east (downgradient) of the Site. The report indicates that detected concentrations of petroleum hydrocarbons have continued to decrease since groundwater monitoring began in 2004. Based on the direction of groundwater flow and the known extent of petroleum impacts in groundwater, it is unlikely that the impacts from this former facility have impacted or will impact the Site.

Come & Go Market, 4500 Freeport Boulevard (AKA 4516 Freeport Blvd) - as referenced in Section 4.1.2, this former gas station, according to EDR, is 744 feet north-northeast (crossgradient) of the Site and is a closed LUST case. The LUST was reported in September 1999. Geocon conducted quarterly groundwater monitoring for this former facility from 2004 to 2007. Geocon recommended a low-risk closure of this case in 2007 based on decreasing concentration trends of petroleum hydrocarbons beneath and downgradient from the facility. Based on the closure of the case and direction of groundwater flow, it is unlikely that this former facility has impacted or will impact the Site.

Arco #2124 (Former), 4400 Freeport Boulevard – as referenced in Section 4.1.2, this former gas station 1,046 feet north-northeast (crossgradient)of the Site, is a closed LUST case. The LUST was reported in August 1988 and closed in May 1999. No other information for this facility was available on GeoTracker. Based on the closure of the case and direction of groundwater flow, it is unlikely that this former facility has impacted the Site.

4.2.4 DOGGR Review

A review of the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website indicates that no oil or gas wells are or were located on the Site or in the site vicinity (DOGGR, 2012).

5.0 HISTORICAL USE

Historical use of the Site and adjacent properties was evaluated through review of historical aerial photographs and historical topographic maps provided by EDR. EDR stated that Sanborn fire insurance maps were not available for the Site. This section summarizes the information obtained from these sources.

5.1 Aerial Photographs

Historical aerial photographs for the years 1937, 1947, 1952, 1961, 1971, 1981, 1993, 1998, 2005, and 2006 (Appendix E) provided by EDR were reviewed for indications of past land uses that had the potential to have impacted the Site through the use, storage or disposal of hazardous substances. The following table summarizes our observations of the Site and adjacent properties on the aerial photographs.

Year	Observations	
	Site	**Adjacent and Vicinity Properties**
1937 (1"=555')	It appears that five structures were in the southeastern portion of the Site. Two unimproved roads were also on the Site. The northern and western portions of the Site appear to have been open, unused ground. The Site was active, but it is not possible to discern if Capital Nursery was in operation or if the structures were just residences and farm structures.	An orchard and residences were adjacent to the west of the Site. Undeveloped land and residences were south of the Site. Undeveloped pasture land was north and east of the Site.
1947 (1"=655')	It appears that the Capital Nursery was active. Approximately seven structures were on the Site. Unimproved roads and plant cultivation are visible on the Site.	Residences were present to the north and south of the Site. The land use on properties to the west and east of the Site was similar to that observed on the 1937 photograph.
1952 (1"=555')	Similar to the conditions observed on the 1947 photograph, with the exception of four additional structures in the south central portion of the Site.	One commercial structure and residences were north and south of the Site. Residences were west of the Site. It appears that three commercial structures were present to the east of the Site.
1961 (1"=555')	Similar to the conditions observed on the 1952 photograph with the exception of two additional structures in the southeastern portion of the Site. In addition, a portion of the nursery in the southeastern corner of the Site had been redeveloped with the current bank building.	It appears that two commercial structures were present to the southeast of the Site. This photograph is similar to the 1952 photograph for the properties north and west of the Site. Eight commercial structures were east of the Site.
1971 (1"=333')	Conditions appear similar to those on the 1961 photograph.	Conditions appear similar to those on the 1961 photograph.
1981 (1"=333')	Conditions appear similar to those on the 1971 photograph.	Conditions appear similar to those on the 1971 photograph.
1993 (1"=666')	Conditions appear similar to those on the 1981 photograph.	Conditions appear similar to those on the 1981 photograph.
1998 (1"=500')	Conditions appear similar to those on the 1993 photograph.	Conditions appear similar to those on the 1993 photograph.
2005 (1"=500')	Conditions appear similar to those on the 1998 photograph.	Conditions appear similar to those on the 1998 photograph.
2006 (1"=500')	Conditions appear similar to those on the 2005 photograph.	Conditions appear similar to those on the 2005 photograph.

Capital Nursery is visible on the Site from possibly as early as 1937 to 2006. No direct evidence of RECs is visible on the aerial photographs. However, the use of the Site as a nursery for over 70 years

suggests that site soil may have impacted by pesticides/herbicides which is a potential REC. No evidence of RECs was observed on the adjacent properties.

5.2 Topographic Maps

We reviewed historical topographic maps for the years 1893, 1902, 1911, 1949, 1954, 1967, 1975, and 1992 (Appendix F) provided by EDR.

Year	Observations	
	Site	**Adjacent and Vicinity Properties**
1893 (1:125,000)	The scale of this map is too large to discern details of development on the Site.	The scale of this map is too large to discern details of development in the site vicinity.
1902 (1:62,500)	No site features or land uses are depicted.	Two structures are depicted adjacent to the north of the Site. One structure is depicted adjacent to the east of the Site.
1911 (1:31,680)	One structure is depicted on the Site	One structure is depicted adjacent to the north of the Site and one is depicted adjacent to the east of the Site.
1949 (1:24,000)	Four structures are depicted on the Site.	Multiple structures are depicted adjacent to the north, west, south, and southeast of the Site.
1954 (1:24,000)	No site features or land uses are depicted on the Site.	No structures are depicted on the adjacent properties.
1967 (1:24,000)	Similar to the 1954 map.	Similar to the 1954 map.
1975 (1:24,000)	Similar to the 1967 map.	Similar to the 1967 map.
1992 (1:24,000)	Similar to the 1975 map.	Similar to the 1975 map.

The topographic maps do not depict land uses on the Site or in the site vicinity that would suggest the potential presence of RECs on the Site.

5.3 City Directories

EDR prepared an abstract of city directories including city, cross reference and telephone directories (Appendix G). EDR included information from directories at approximately five-year intervals, if available, from 1947 to 2005. The following table lists the various business names associated with the Site.

Year	Business Name
1947	Capital Nursery Co.
1952	Capital Nursery Co./Armstrong Bros
1956	Capital Nursery Co g

Year	Business Name
1966	Capital Nursery Co
1970	Capital Nursery Co
1975	Capital Nursery Co
1980	Capital Nursery Co
1991	Armstrong Eugene R Capital Nursery Co
1995	Armstrong Eugene R Capital Nursery Co
1999	Capital Nursery Co/Armstrong Bros/Armstrong Eugene
2005	R Icptlnrsry Capital Nursery Co / Armstrong Eugene

The adjoining properties listed in the EDR report are a variety of residential and commercial developments. None of the listed commercial developments suggest the storage or use of hazardous materials with the exception of the following:

Business Name	Address	Potential REC
DUFFY'S ONE HOUR CLEANERS	4643 Freeport Blvd	Former Dry Cleaner
Payless Cleaners	4528 Freeport Blvd	Former Dry Cleaner
Suds & Duds Launderette	4524 Freeport Blvd	Launderette
Come & Go Market	4500 Freeport Blvd	Former Gas Station

These businesses are discussed in Section 4.1.2 and do not represent RECs in connection with the Site.

6.0 SITE RECONNAISSANCE

This section summarizes observations of the Site and surrounding properties made during the site reconnaissance.

6.1 Methodology and Limiting Conditions

Jim Brake, PG, and Matt Tidwell with Geocon performed the site reconnaissance on April 27, 2012. Weather on the day of the site reconnaissance was sunny with temperatures in the 70s. There were no limiting conditions to our ability to observe the Site and surrounding properties.

We performed the site reconnaissance by walking throughout the Site and along the site perimeter to observe site features and conditions and to take photographs. For the majority of the site reconnaissance we were unaccompanied. However, in order to answer some of our questions regarding particular site features, Seth Taylor, Capital Nursery's Sales Manager, accompanied us back to certain areas of the Site. The offsite survey was performed by making observations of adjacent properties from the Site and public streets.

6.2 General Site Setting

The Site is an active retail nursery surrounded by residential and commercial developments.

6.3 Onsite Survey

6.3.1 Site Buildings and Surrounding Areas

The Site is developed with several buildings of various ages, uses, and sizes. Building locations and other key features observed on the Site during the onsite survey are depicted on Figure 2. Site photograph locations and orientations are also shown on Figure 2.

We began the site reconnaissance in the southeastern portion of the Site. Building A houses several offices for Capital Nursery's landscaping design business (Photo 1). To the west of Building A is a locked storage shed that according to Mr. Taylor contains janitorial supplies.

Building B is a small building that was reportedly an office and bathroom (Photo 2). The building appeared to be used for storage of miscellaneous items including records boxes. We observed a plywood-covered pit (Photo 3) between Buildings B and C. According to Mr. Taylor, a septic system was removed at this location. The former septic pit is a potential REC/area of concern.

Building C (Photo 4) is a steel-framed warehouse with a concrete slab floor, containing retail pesticides (Photo 5), plant food, and various seeds. This building is also used to store landscaping supplies and various hand tools. The presence of pesticides in this building is not a concern because of the concrete slab floor which provides a barrier to pesticides impacting soil. On the eastern side of Building C, we observed several pallets of planting mix (Photo 6). An inactive, empty, approximately 500-gallon diesel AST was observed on unpaved ground on the south side of Building C (Photo 7). The AST appeared to be stored but not used in this location. No evidence of releases from the AST was observed in this area; however, the AST is a potential concern.

Building D contains an office, a kitchen, and a miscellaneous storage room.

Building E contains electrical equipment and a heating system for the Site's greenhouses (Photo 8).

Building F contains a break room for Capital Nursery's employees.

Building G (Photo 9) is an open-sided, wood frame, cinder block wall structure used for landscape material storage (i.e. planting mix, bark, gravel, etc.). A storage shed with small (<5-gallon) containers of gasoline (Photo 10) and two locked storage sheds (Photo 11) are west of Building G. According to Mr. Taylor, the locked storage sheds contain small containers of gasoline. This area is not considered to be of concern because of the small quantities of gasoline present and the general good housekeeping observed in this area.

Building H is an open-sided vehicle maintenance garage (Photo 12) and a waste oil storage room (Photo 13). The waste oil drums are stored on a cement floor. No evidence of spillage or leakage was observed. Tires, engines, and other various automotive parts are also stored in Building H. This is an area of minor concern because of the larger quantities of petroleum storage and the long-term use of this area for vehicle maintenance and repair.

A 1,000-gallon gasoline Convault AST (Photo 14) is present west of Building H. The Convault AST is not a concern for the Site as it has built-in secondary containment and was installed over a concrete slab.

Building I is a workshop with a cement floor. It contains various tools and several retail-sized oil containers (Photo 15).

Building J (Photo 16) contains one urea sulfate AST (Photo 17) and a urea sulfate/water mixing tank (Photo 18). Urea sulfate is used as an active ingredient in herbicides used as a frost protectant. According to the United States Environmental Protection Agency (EPA), urea sulfate readily degrades to urea and sulfate ions and is not a threat to human health (EPA, 2005). No evidence of spillage or leakage was observed.

To the east of Building J, is an air pressure tank (Photo 19) connected to a water supply well (Photo 20) used for the Site's sprinkler system. The potential for the water supply well to have been impacted by releases from LUST or other facilities (historic auto stations and dry cleaners) is considered to be low based on the distances of these facilities from the Site (see Sections 4.1.2 and 4.2.3) and the regional groundwater flow direction.

To the east of the air pressure tank is a secondary containment structure (Photo 21). Mr. Taylor stated

that a 550-gallon diesel AST (the one observed behind building C) was previously located here. This is an area of concern related to petroleum primarily because of the potential for past fueling spills outside of the containment.

Building K is used to store gasoline power tools (Photo 22). De minimis staining was observed on the unpaved ground surface in this building. This is not considered an area of concern due to the small quantities of fuel contained in these tools.

Building L is a small wooden shed used for pesticide storage (Photo 23). It was locked and posted with warning signage. This is an area of concern for pesticides.

Another secondary containment structure (Photo 24) is adjacent to the west of Building L. Mr. Taylor informed us that a 350-gallon kerosene AST was previously located here. This is an area of concern related to petroleum primarily because of the potential for past fueling spills outside of the containment.

Approximately 20 feet northeast of Building L, is a paint storage shed (Photo 25), a plant container storage area, and two dumpsters. No evidence of leaks or spills was observed around the paint storage area. Therefore, this feature is not considered a concern for the Site.

Building M and Building N are inactive greenhouses (Photo 26).

Building O is an active greenhouse (Photo 27).

Building P is an inactive greenhouse in which retail-sized containers of pesticides were being temporarily stored in the northeastern portion of this building (Photo 28). The storage of pesticides in Building P is considered a material REC due to the lack of any secondary containment for potential spills or leaks.

6.3.2 Site Exterior Areas

The southwestern portion of the Site is used for vehicle and landscaping materials storage (Photo 29), and some plant storage (Photo 30). The western and northwestern portions of the Site are used for plant storage (Photo 31). The northern, northeastern and eastern portions of the Site are the active retail nursery (Photos 32 and 33). The active retail nursery includes a store that sells various pesticides, plant food, seeds, and tools (Photo 34). This area also includes offices and sales and information kiosks (Photo 35). No evidence of RECs or areas of concern were observed in the plant storage areas, the retail nursery areas, or the parking lot. The vehicle storage area is an area of concern

related to potential petroleum storage and/or use.

6.4 Offsite Survey

Properties within the site vicinity include several commercial and residential developments. This section provides brief descriptions and photos of adjacent properties.

6.4.1 North

Adjacent properties to the north of the Site consist of residences along Meer Way (Photo 36) and a commercial building on Freeport Boulevard that is occupied by Collected Works Books and Gifts and Cook Realty (Photo 37).

6.4.2 South

A Bank of America (Photo 38) with a parking lot and residences along Wentworth Avenue are adjacent to the south of the Site.

6.4.3 East

Several commercial developments are across Freeport Boulevard to the east of the Site (Photo 39).

6.4.4 West

Residences along Sherwood Avenue and Marion Court are adjacent to the west of the Site (Photo 40).

No evidence of RECs was observed on the adjacent or vicinity properties.

7.0 INTERVIEWS AND QUESTIONNAIRES

We interviewed the current owner of the Site, Charles Armstrong, to obtain information regarding his knowledge of current and past use of the Site and the potential for impacts to the Site related to the past use, storage, or disposal of hazardous substances or petroleum on the Site. We also provided him with a site owner questionnaire regarding the past use, storage, or disposal of hazardous substances or petroleum on the Site. A copy of the site owner questionnaires is in Appendix H.

According to Mr. Armstrong, the Site has been used as a retail nursery since 1936. Prior to 1936, the Site had stables and the land was used to grow crops. He stated that the Site previously had two gasoline USTs for fueling company vehicles and equipment, but they were removed in the early 1990s. According to Capital Nursery's records, the USTs were removed in January 1992 and are discussed in Section 4.2.2.

Mr. Armstrong stated that the Site has a vehicle maintenance garage in the south central portion of the Site. The Site does not have a waste oil tank. Waste oil from this garage is and has been collected and disposed of by Sacramento Waste Oil. Mr. Armstrong stated that the Site has a 1,000-gallon gasoline AST (the Convault

AST) located west of the vehicle maintenance garage and a fertilizer AST (the urea sulfate AST) located in the south central portion of the Site. The gasoline AST has built-in secondary containment. The fertilizer AST does not have secondary containment. However, given the reported quick breakdown and low health risk associated with urea sulfate, it is not considered a material REC.

According to Mr. Armstrong, they store various agricultural chemicals (pesticides, herbicides, and fertilizers) on their Site. Pesticide storage is in the pesticide storage shed (Building L), and fertilizer (urea sulfate) is stored in a building (Building J) to the south of the vehicle maintenance garage. He further stated that they do apply herbicides to their products. The application of herbicides is not usually broad but targets specific plants on the Site. The application of herbicides on the Site, which has likely been occurring for several decades, is considered a potential REC in connection with the Site.

Mr. Armstrong stated that the Site does not actively cultivate plants anymore. Plants are delivered to the Site and stored for resale. He indicated that he has no knowledge of any environmental issues related to the Site.

8.0 SUMMARY OF FINDINGS

We performed a Phase I ESA of the 9-acre Site in Sacramento, Sacramento County, California, at the request of the Client as part of their due diligence prior to acquisition of the Site. The Site consists of Capital Nursery – a retail nursery.

The Site is identified by Sacramento County APN 017-0121-001-0000. The Site is depicted on the USGS Sacramento East 7.5-minute topographic map in the southeast quarter of Section 20 of Township 8 North, Range 4 East, Mt. Diablo Base and Meridian. The topography of the Site is nearly flat-lying with an approximate elevation of 20 feet above mean sea level.

The Site is in the Great Valley geomorphic province of Northern California. The *Geologic Map of the Sacramento Quadrangle* shows that the geology of the Site is underlain by alluvium deposits of the Riverbank Formation. Surficial onsite soils belong to the San Joaquin-Urban land complex which is described as a moderately well-drained silt loam to clay loam formed on terraces from alluvium from granite.

The depth to groundwater measured in six groundwater monitoring wells at a former Come & Go service station located at 4516 Freeport Boulevard, approximately 180 feet northeast of the Site, ranged from 19 to 20 feet below ground surface and flowed to the southeast in March 2007.

The Site is currently occupied by Capital Nursery - a retail nursery. The western and northern portions of the Site are open space used to store plants and landscaping products. A retail nursery sales complex

and a parking lot comprise the eastern portion of the Site. Several buildings in the central and southern portions of the Site are used for a variety of functions related to nursery operations and administration. Unpaved and paved lanes for vehicle and equipment access are present through the Site.

Adjacent properties are developed with residences and commercial developments. Residential is adjacent to the north, west, and south of the Site. Commercial is adjacent to the north, east, and south.

The Client indicated that they have no specialized knowledge regarding uses of the Site that could potentially impair the environmental conditions of the Site, no commonly known information or reasonably ascertainable information unique to the Site, and they are not aware of any environmental conditions on the Site which may lead to a potential valuation reduction of the Site.

The Site is listed on several regulatory databases under Capital Nursery Co. On the HIST UST database, the Site is listed as having contained two USTs - one 1,000-gallon unleaded gasoline and one 2,000-gallon diesel. The 2,000-gallon UST was installed in 1977. The SWEEPS UST database lists the 2,000-gallon UST as having been for leaded gasoline, not diesel.

Several nearby facilities within 1/8 to ¼-mile of the Site are listed mainly on the historical auto station, historical dry cleaners and LUST databases. None of the listed facilities are anticipated to have impacted the Site.

SCEMD records indicate that the Site had one 2,000-gallon regular gasoline UST and one 1,000-gallon unleaded gasoline UST in March 1987. SCEMD granted approval to remove both USTs in July 1991. There was no record of further action taken by SCEMD after the USTs were removed. Capital Nursery's records indicated that the two USTs were removed in January 1992. Soil under the USTs was impacted by petroleum hydrocarbons. One hundred eight cubic yards of impacted soil were reportedly removed in March and April 1994 and disposed of at Forward landfill near Stockton, California. Capital Nursery's records contained no information regarding case closure for the USTs from SCEMD. Based on the lack of records at SCEMD and in those provided by Capital Nursery indicating case closure for the USTs, the status of conditions in soil and groundwater beneath the former USTs is unknown. Therefore, the potential presence of residual impacts beneath the former UST is considered an REC in relation to the Site.

Available information on GeoTracker for nearby open LUST cases for the former Chevron #9 1561 and former Arco #2124 gas stations does not indicate that petroleum releases at these former facilities are a threat to impact the Site.

Review of the DOGGR online well mapping system indicates that there have been no oil or gas wells drilled on or within several miles of the Site.

Historical aerial photographs dating back to 1937 show that Capital Nursery was on the Site as early as 1937. Use of the Site as a commercial nursery for over 70 years suggests that site soils may be impacted by pesticides and herbicides. No evidence of RECs was observed on the Site or adjacent properties.

We performed the site reconnaissance on April 27, 2012, to search for evidence of potential RECs on the Site. The former ASTs, former septic pit, and pesticide storage shed are considered areas of concern. The improper storage of retail-sized pesticides observed in Building P represents a material REC. No evidence of RECs was observed on adjacent properties during the site reconnaissance.

We interviewed the site owner, Mr. Armstrong, who was not aware of any environmental issues related to the Site. Mr. Armstrong stated that the Site's two USTs were removed in the early-1990s and that the Site has one 1,000-gallon gasoline AST and a fertilizer AST. The gasoline AST has built-in secondary containment. Waste oil generated at Building H, or the vehicle maintenance garage, is collected and disposed of by Sacramento Waste Oil. According to Mr. Armstrong, they store agricultural chemicals on the Site in Building J. He further stated that they generally apply herbicides to a specific location on the Site. He stated that the nursery is no longer used to grow plants. Plants are delivered and store on the premises for resale.

9.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I ESA, in general conformance with the scope and limitations of ASTM *Designation E 1527-05*, of the 9-acre Capital Nursery at 4700 Freeport Boulevard in Sacramento, Sacramento County, California. Exceptions to, or deletions from, this practice are described in Section 1.4 of this report.

A review of the information sources referenced herein and the results of the April 27, 2012, site reconnaissance indicate that hazardous substances and petroleum are stored and used at the Site. This assessment has revealed evidence of RECs/areas of concern in connection with the Site including:

1. the use of the Site as a commercial nursery dating back to the 1930s and associated use of pesticides which suggest that shallow soil may be impacted by pesticides.
2. petroleum storage and use for onsite vehicle repair and maintenance which may have resulted in petroleum impacts. Areas of concern related to petroleum usage and storage include:
    - the former UST locations;
    - the former AST locations;
    - the former septic tank pit;
    - the vehicle maintenance area (Building H); and
    - the vehicle storage area in the southern portion of the Site.
3. the improper storage of retail sized pesticides in Building P which is a material REC.

We recommend that these RECs/areas of concern be further assessed through a Phase II ESA consisting of:

1. collection of shallow soil samples throughout the plant storage areas of the Site and adjacent to the pesticide storage shed and analysis for pesticides.
2. collection of soil samples from the former UST and AST locations, former septic tank pit, vehicle maintenance area, and vehicle storage area and analysis for TPHg, TPH as diesel (TPHd), and BTEX. If groundwater is present in the former UST locations, then it should also be sampled and analyzed for TPHg, TPHd, and BTEX.
3. collection of a soil sample from the pesticide storage area in Building P and analysis for pesticides. We also recommend that these pesticides either be stored in a secure location with spill protection or removed from the Site.

The results of the Phase II ESA should be presented in a report that provides conclusions based on observations of soil collected from exploratory borings and the results of laboratory analysis of soil and groundwater samples. Recommendations should be provided regarding whether or not further assessment and/or corrective action are warranted.

10.0 REFERENCES

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11.0 QUALIFICATIONS

The Phase I ESA was performed and the report prepared by Mr. Jim Brake, PG. Mr. Brake has an MS degree in geological sciences and 25 years of experience in environmental investigation and remediation, including implementation of remedial investigation/feasibility study programs and soil and groundwater remedial actions for private industrial and government clients. He has managed a wide variety of projects for clients in the manufacturing, transportation, mining, automobile and real estate industries including Environmental Protection Agency and Department of Toxic Substances Control Superfund sites. Mr. Brake has extensive experience in the performance of Phase I and II ESAs of commercial, industrial, and agricultural properties throughout California.

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries investigation in conformance with the standards and practices set forth in 40 CFR Part 312.

Jim Brake, PG
Senior Geologist/Associate

PHASE II
ENVIRONMENTAL SITE ASSESSMENT

Capital Nursery
4700 Freeport Boulevard
Sacramento, California

PREPARED FOR:

RALEY'S, INC.
500 WEST CAPITOL AVENUE
WEST SACRAMENTO, CALIFORNIA 95605

PREPARED BY:

GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742

GEOCON PROJECT NO. S9695-06-02

JUNE 2012

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S9695-06-02
June 13, 2012

Helen Singmaster
General Counsel and Corporate Secretary
Raley's, Inc.
500 West Capitol Avenue
West Sacramento, California 95605

Subject: PHASE II ENVIRONMENTAL SITE ASSESSMENT
CAPITAL NURSERY
4700 FREEPORT BOULEVARD
SACRAMENTO, CALIFORNIA

Dear Ms. Singmaster:

In accordance with your authorization, we have performed a Phase II Environmental Site Assessment (ESA) of the Capital Nursery property at 4700 Freeport Boulevard (the Site) in Sacramento, California. The Site is an approximate 9-acre property developed as a retail nursery facility. We performed the Phase II ESA to evaluate recognized environmental conditions (RECs) that we identified during our Phase I ESA of the Site. The RECs included the potential presence of pesticides, Title 22 metals and petroleum hydrocarbons in soil and groundwater at the Site. This report summarizes the findings of the Phase II ESA.

We appreciate the opportunity to have provided our services on this project. Please contact us if you have any questions regarding this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Gemma G. Reblando
Project Geologist

Jim Brake, PG
Senior Geologist/Associate

(1) Addressee
(1) Downey Brand, Nicole Gleason
(1) Downey Brand, Matt Ellis
(1) Bob Henderson

TABLE OF CONTENTS

PHASE II ENVIRONMENTAL SITE ASSESSMENT PAGE

FIGURES

TABLES

APPENDICES

PHASE II ENVIRONMENTAL SITE ASSESSMENT

1.0 INTRODUCTION

This report presents the results of a Phase II Environmental Site Assessment (ESA) of the Capital Nursery property at 4700 Freeport Boulevard (the Site) in Sacramento, California. The Phase II ESA was authorized by Raley's Inc. (the Client) based on the findings of our Phase I ESA of the Site performed in May 2012 (Geocon Consultants, 2012). The Phase I ESA and this Phase II ESA were performed as part of Raley's due diligence process prior to purchasing the Site.

1.1 Site Description and Location

The Site is an approximate 9-acre property developed as a retail plant nursery located on the west side of Freeport Boulevard between the Meer Way/Freeport Boulevard intersection and the Wentworth Avenue/Freeport Boulevard intersection in the Land Park neighborhood of Sacramento, Sacramento County, California. The approximate project location is depicted on the Vicinity Map, Figure 1.

1.2 Purpose and Objectives

The purpose of the Phase II ESA was to evaluate recognized environmental conditions (RECs) and areas of concern that we identified during the Phase I ESA and described in our report dated June 12, 2012. The Phase I ESA revealed evidence of RECs/areas of concern in connection with the Site including:

- the use of the Site as a commercial nursery dating back to the 1930s and associated use of pesticides which suggest that shallow soil may be impacted by pesticides.
- petroleum storage and use for onsite vehicle repair and maintenance which may have resulted in petroleum impacts. Areas of concern related to petroleum usage and storage include:
    - the former UST locations;
    - the former AST locations;
    - the former septic tank pit;
    - the vehicle maintenance area (Building H); and
    - the vehicle storage area in the southern portion of the Site.
- the improper storage of retail sized pesticides in Building P which is a material REC.

The objectives of the Phase II ESA were to collect representative soil samples and groundwater samples from the areas of the RECs and other areas of concern, have them analyzed for the contaminants of concern (COCs), and compare the results of laboratory analysis to regulatory screening criteria to determine if further assessment or corrective action might be warranted.

With respect to the former USTs on the Site, we reviewed Sacramento County Environmental Management Department (SCEMD) records pertaining to the USTs and reports provided to us by Capital Nursery. SCEMD records indicate that Capital Nursery had two permitted USTs including one 2,000-gallon regular gasoline and one 1,000-gallon unleaded gasoline. The SCEMD granted authority to Capital Nursery to remove the two USTs in July 1991. SCEMD had no other records regarding the USTs – specifically, there were no records regarding whether or not further action was required by SCEMD after the USTs were removed. Reports that Capital Nursery provided were for confirmation soil sampling conducted by Wheeldon and Associates (1992, 1993, 1994) in the excavations following removal of the USTs, and following additional soil removal around the 2,000-gallon UST and the former fuel pump area by the 1,000-gallon UST. Based on the lack of a closure letter from SCEMD, we recommended that the former UST locations be evaluated as part of the Phase II ESA. Copies of pertinent environmental records related to the former USTs are in Appendix A.

2.0 INVESTIGATIVE METHODS

This section describes the site investigation activities performed at the Site. Investigative methods are divided into pre-field and field activities and laboratory analysis.

2.1 Pre-field Activities

Pre-field activities consisted of the following tasks:

- Contacted Underground Service Alert (USA) a minimum of 48 hours prior to the start of drilling activities. USA notified subscribing public utilities so that they could attempt to delineate utilities and conduits in proximity to the Site. Prior to contacting USA, the proposed boring locations were marked with white paint as required by law.
- Retained the services of Advanced Technology Laboratories (ATL), a California-certified analytical laboratory located in Signal Hill, California, to perform chemical analysis of soil and groundwater samples. ATL is a full-service environmental analytical laboratory accredited by the State of California's Department of Public Health Environmental Laboratory Accreditation Program and the National Environmental Laboratory Accreditation Program.

2.2 Field Activities

Field activities included advancing, logging and sampling of 16 borings on the Site. This section describes those activities.

2.2.1 Soil Borings

On May 21, 2012, we advanced borings B1 through B14 in locations throughout the Site to observe shallow soil and collect representative soil samples. These borings targeted the following areas/features:

- B1, B3, B4, B9 through B11 and B14 were advanced throughout the nursery and plant storage areas (including greenhouses);
- B2 and B8 were advanced in or immediately adjacent to pesticide/herbicide storage areas;
- B5 was advanced in a vehicle storage area
- B6 was advanced adjacent to a garage where gasoline and new/waste oil are stored;
- B7 was advanced adjacent to a former fuel AST secondary containment structure
- B12 was advanced adjacent to a former septic pit/tank and inactive diesel AST; and
- B13 was advanced in a materials storage area.

Boring locations are depicted on Figure 2. These borings were advanced to a maximum depth of 4.0 feet, and soil samples were collected at depth intervals of 0.0 to 0.5 foot and 2.0 to 2.5 feet.

On May 25, 2012, we advanced borings B15 and B16 to depths of 10.5 and 18 feet in the locations of the former 1,000 and 2,000-gallon USTs (Figure 2), respectively, to observe soil in these locations and to collect representative soil and groundwater samples. Soil samples from B15 were collected at depth intervals of 3.5 to 4.0 feet and 8.0 to 8.5 feet. Soil samples from B16 were collected at depth intervals of 13.0 to 13.5 feet and 15.0 to 15.5 feet.

Borings B1, B2, B5, B6, B15 and B16 were advanced using truck-mounted, direct-push equipment. Borings B3, B4 and B7 through B14 were advanced using a hand-auger due to limited access. A field geologist working under the supervision of a California Professional Geologist logged the soil in accordance with the Unified Soil Classification System. Soil observations are summarized in Section 4.0. Soil logs for borings B15 and B16 are in Appendix B.

2.2.2 Soil and Groundwater Sampling Procedures

In the direct-push borings we collected soil cores by pushing clean, stainless steel rods fitted with clear acetate liners driven by the direct-push rig. We collected soil samples at desired depth intervals by cutting out a 6-inch-long section from the acetate liner. We collected soil samples from the hand-auger borings in stainless-steel tubes driven with a slide hammer device. Soil samples collected by both methods were sealed with Teflon™ sheets and plastic end caps, labeled, and stored on ice in a cooler for transportation to ATL of Signal Hill, California, for analysis.

Disturbed soil samples from the B15 and B16 soil cores were retained in re-sealable plastic bags for field screening with a photo-ionization detector (PID) to qualitatively assess the presence of volatile organic compounds. PID readings were recorded on the borings logs (Appendix B).

We made several attempts to advance B15 in the location of the former 1,000-gallon UST and each attempt encountered refusal on a hardpan (a naturally cemented soil layer) at an approximate depth of 10.5 feet. Based on information in the reports provided by Capital Nursery, we concluded that this UST was likely installed above the hardpan and that excavation for installation and removal did not penetrate the hardpan layer.

Groundwater was encountered in B15 at a depth of approximately 4.0 feet. A polyvinyl-chloride (PVC) temporary casing with a slotted screen section was inserted into the boring and we then collected a groundwater grab sample using dedicated tubing tipped with a check valve lowered through the interior of the PVC casing. The groundwater grab sample was decanted into four laboratory-provided, hydrochloric acid-preserved, 40-milliliter volatile organic analysis vials and two one-liter amber glass containers. The sample containers were labeled and placed on ice in a cooler for transportation to the laboratory.

B16, advanced in the location of the former 2,000-gallon UST, did not encounter the hardpan suggesting that we had correctly identified the location of this former UST as one of Wheeldon & Associates reports notes that overexcavation in this area following removal of this UST extended to a depth of 15.5 feet. B16 did meet refusal on a hard clay layer at an approximate depth of 18 feet.

Groundwater was not encountered in boring B16. This suggests that the "groundwater" encountered in B15 is perched on top of the hardpan. From our experience at other nearby locations, perched water is commonly encountered on top of this hardpan layer, but it is not the first (shallow) water-bearing zone where the water table is encountered and that is typically monitored at leaking underground storage tank (LUST) and other groundwater contamination sites.

Following sample collection, each boring was backfilled with a cement grout to the ground surface.

2.2.3 Quality Assurance/Quality Control Procedures

Quality Assurance/Quality Control (QA/QC) procedures were performed during the field exploration activities. These procedures included the decontamination of sampling equipment before each sample was collected and providing chain-of-custody documentation for each sample submitted to the laboratories. The soil and groundwater sampling equipment was cleansed between each boring by washing the equipment with an Alconox® solution followed by a double rinse with deionized water. The decontamination water was discharged to the ground surface within the Site, away from storm drain inlets.

2.3 Laboratory Analyses

Selected soil and groundwater samples were analyzed by ATL for the following contaminants of concern per standard Environmental Protection Agency (EPA) methods listed below.

- Organochlorine pesticides by EPA Test Method 8081.

- Title 22 Metals by EPA Test Methods 6010B and 7471B (mercury).
- Gasoline-, diesel-, and motor oil-range organics (GRO), (DRO), and (ORO) by EPA Test Method 8015B.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert butyl ether (MTBE) by EPA Test Method 8021.

Laboratory analyses were conducted on an expedited three working-day turnaround time. The results of soil and groundwater grab sample analysis are presented in Section 4.2 and summarized on Tables 1 through 4. The laboratory reports and chain-of-custody documentation are in Appendix C.

3.0 INVESTIGATION RESULTS AND DISCUSSION

This section summarizes our observations of soil in the borings and presents the results of laboratory analysis of the soil and groundwater samples.

3.1 Soil Observations

The ground surface at the Site where borings B1 through B16 were advanced was covered with 2 to 4 inches of gravel/sandy gravel. Beneath the gravel we encountered yellowish-brown silt and sand in borings B1 through B14 to a depth of approximately 2 feet and silty clay underlying the silt/sand to the maximum depth explored of 4 feet. No visual evidence of hazardous substance or petroleum impacts or odors was encountered in these borings.

In B15 we observed fill consisting primarily of yellowish-brown gravelly sand to silty coarse sand to a depth of 8.5 feet. The fill overlies hard, dark yellowish brown clay, which we were only able to penetrate to a depth of 10.5 feet where we encountered the cemented hardpan. In B16 we observed dark yellowish brown gravelly sand with minor coarse gravel with brick and burnt wood fragments to a depth of 12 feet. We observed gray/greenish-gray staining in the fill material between depths of 12 and 16 feet that exuded a petroleum hydrocarbon odor. This boring met refusal on hard clay at a depth of 18 feet.

PID readings were also obtained for the samples collected from B15 and B16. No VOCs were detected in B15 soil. VOCs were detected in B16 soil with the highest reading of 5.9 parts per million from the fill at a depth of 13 feet (see boring logs in Appendix B). Our observations and the PID readings suggested that residual hydrocarbon impacts were present in the area of B16.

3.2 Laboratory Analysis Results

3.2.1 Pesticides

Table 1 shows that the pesticide compounds 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-chlordane, gamma-chlordane, chlordane, dieldrin, and heptachlor epoxide were detected in several of the soil samples collected from borings B1 through B5 and B8 through B14 in various locations throughout the Site where pesticides were used and/or stored (Figure 2). None of the detected concentrations exceed regulatory screening criteria related to human exposure to soil including the California Office of Environmental Health Hazard Assessment's California Human Health Screening Levels (CHHSLs) or the San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels (ESLs) for commercial land use.

Dieldrin was detected in the three surface soil samples collected from borings B9, B12, and B13 at concentrations ranging from 3.3 to 5.6 micrograms per kilogram (µg/kg), which exceed the ESL of 2.3 µg/kg for dieldrin that is specific to potential leaching from soil to groundwater. However, in each of these borings, dieldrin was not detected in the soil sample collected from a depth of 2 feet, which indicates that dieldrin is not leaching from surface soil to deeper soil and therefore is not a threat to impact groundwater.

3.2.2 Metals

Table 2 shows that the metals arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc were detected in the two soil samples collected from boring B12 advanced adjacent to a former septic pit and inactive diesel AST behind Building C. None of the detected concentrations of metals exceed their respective CHHSLs or ESLs except for arsenic, which was detected at concentrations of 2.5 and 5.0 milligrams per kilogram (mg/kg). However, the reported arsenic concentrations are within the range of naturally occurring background concentrations of arsenic in California soils (Bradford, et al, 1996).

3.2.3 Petroleum Hydrocarbons

Soil

Table 3 shows that GRO, BTEX and MTBE were not detected in any of the soil samples analyzed including those from B15 and B16 advanced in the former UST locations (Figure 2). DRO was detected in each soil sample analyzed at concentrations ranging from 2.9 to 440 mg/kg. None of the DRO detections exceed the ESL for DRO in a commercial land use setting of 450 mg/kg. There are no CHHSLs for petroleum compounds.

The two highest concentrations of DRO detected of 260 mg/kg in sample B6-0 (collected in front of the workshop - Building H) and 440 mg/kg in sample B2-0 (collected adjacent to a former AST secondary containment) are likely due to minor surface spills or leaks and representative of de minimis conditions as the DRO concentrations in soil samples collected from a depth of 2 feet in each of these borings were one to two orders of magnitude lower.

The highest concentration of DRO reported for the two soil samples collected from the stained soil observed in B16 in the location of the former 2,000-gallon UST was 60 mg/kg – much lower than the ESL for commercial land use of 450 mg/kg.

Groundwater

Table 4 shows that GRO and BTEX were not reported for the groundwater grab sample collected from B15 in the former 1,000-gallon gasoline UST location (Figure 2). DRO and ORO were reported at concentrations of 0.13 and 0.20 milligrams per liter (mg/l), respectively, neither of which exceeds the drinking water ESL for both of 0.21 mg/l.

3.3 Quality Assurance/Quality Control

We reviewed the analytical laboratory QA/QC provided with the laboratory report. These data show acceptable surrogate recoveries and non-detect results for the method blanks, acceptable recoveries and relative percent differences for the matrix spike and matrix spike duplicates, and appropriate recoveries for the laboratory control samples. Based on the laboratory QA/QC, no additional qualification of the laboratory analysis data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Our observations of soil in the borings we advanced throughout the Site and the results of laboratory analysis of soil and groundwater samples we collected from these borings suggest that impacts related to past use and storage of pesticides and petroleum on the Site are minimal and do not warrant further investigation or corrective action for the Site's intended redevelopment as a Raley's grocery store. If, during future construction activities at the Site, evidence of impacts by hazardous substances or petroleum or unknown USTs or other subsurface equipment (i.e., sumps, pits, dry wells, pipelines, etc.) are encountered, a qualified environmental consultant should be retained to observe the area/feature of concern and make recommendations for further assessment or possible corrective actions, if any.

5.0 REPORT LIMITATIONS

This report has been prepared exclusively for Raley's Inc. The information obtained is only relevant as of the date of this report. The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings presented in this report are predicated on the results of the limited sampling and laboratory analyses described herein.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee of the results of the study is implied within the intent of this report. The services performed were conducted in accordance with the local standard of care in the geographic region at the time the services were rendered.

6.0 REFERENCES

Bradford, G.R., et al, *Background Concentrations of Trace and Major Elements in California Soils*, Kearney Foundation Special Report, March 1996.

Geocon Consultants, Inc., *Phase I Environmental Site Assessment, Capital Nursery, 4700 Freeport Boulevard, Sacramento, California*, June 2012.

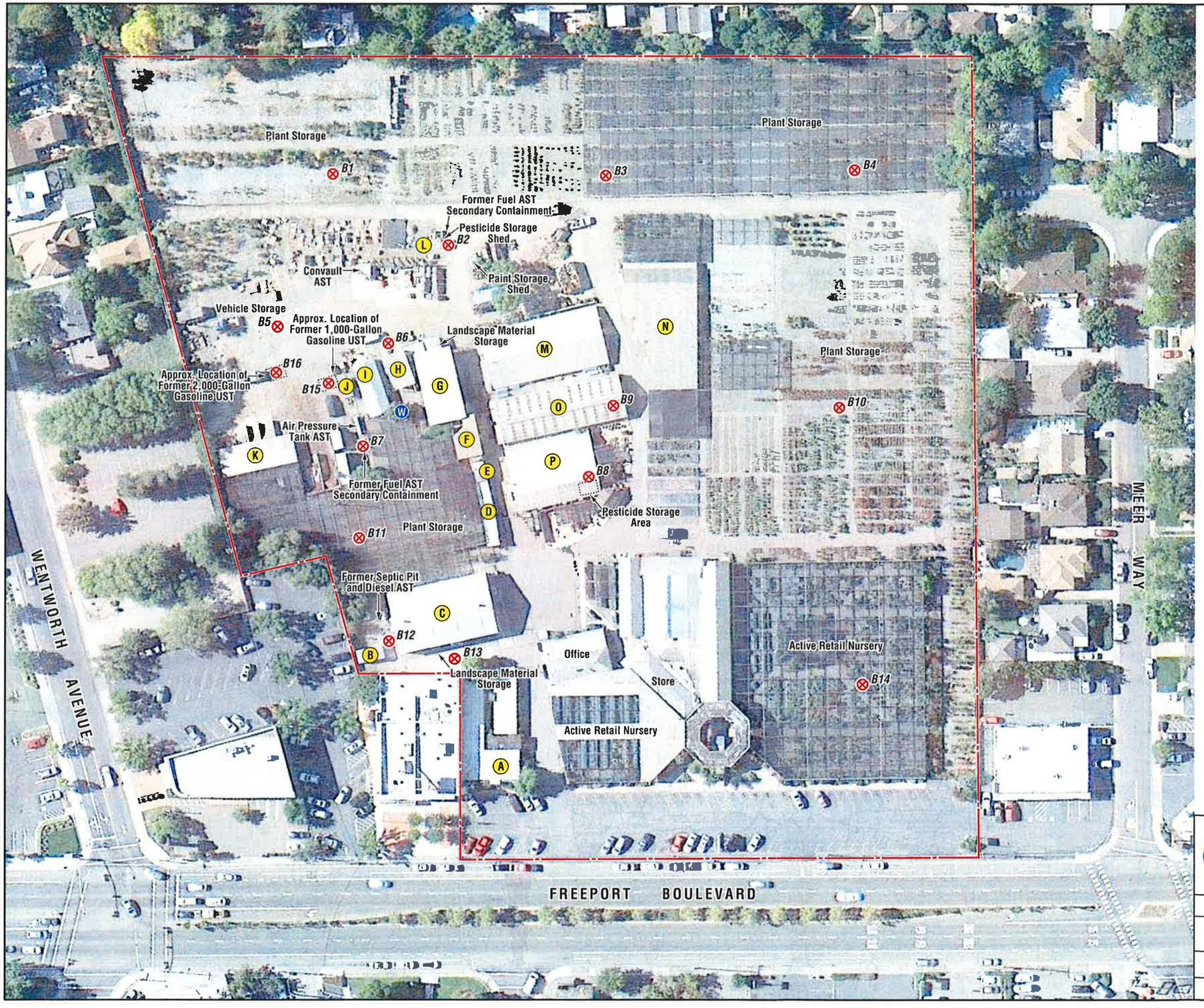
GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

Capital Nursery

4700 Freeport Boulevard
Sacramento, California

VICINITY MAP

S9695-06-02	June 2012	Figure 1



SITE BUILDINGS

A - Offices

B - Inactive former office building

C - Warehouse with pesticide storage

D - Offices/storage

E - Electrical equipment room

F - Breakroom

G - Landscape material storage

H - Vehicle maintenance (gas and new/waste oil storage)

I - Workshop

J - Urea sulfate UST

K - Gasoline power tool storage

L - Pesticide storage shed

M - Inactive greenhouse

N - Inactive greenhouse

O - Active greenhouse

P - Active greenhouse with pesticide storage

LEGEND:

(A) Building Designation

(W) Well Location

B14 ⊗ Approximate Boring Location

0 80

Scale in Feet

GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

Capital Nursery

4700 Freeport Boulevard
Sacramento, California

SITE PLAN

S9695-06-02	June 2012	Figure 2

APPENDIX A

OIL EQUIPMENT SERVICE
Division of Keith A. Tallia, Inc.

COPY

STATE LICENSE No. 323417
CLASSIFICATION: A-HAZ., C61D40
STATE ENVIRONMENTAL ASSESSOR No.: 01781

Telephone: (209) 754-1808
Post Office Box 950
750 Industrial Way
SAN ANDREAS, CALIFORNIA 95249

February 25, 1992

County of Sacramento
Environmental Managment
Hazardous Materials Div.
8475 Jackson Rd. - Suite 230
Sacramento, CA 95826

Attention: Chris Hamilton

Subject: Capital Nursery
4700 Freeport Blvd.
Sacramento

Dear Chris,

This is in follow up to the tank removal we did in your presence at subject site on 1/13/92. Enclosed are copies of the following documents relative to this project.

1. Manifest on which the rinsate and sludge was shipped and disposed of on.
2. Tank disposal certification
3. Soils sampling and analysis report as prepared by Wheeldon & Associates.

Please note Wheeldons conclusions and recomendations on pages 3-4 of their report. We fully agree with same. Please advise if you concurr with same. We would like to close this project as soon as possible due to it being in an area of heavy public exposure.

Sincerely,

Keith A. Tallia
President

COPY

cc: Capital Nursery
J91-220 file

Please print or type. Form designed for use on elite (12 pitch) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000606078161 | Manifest Document No.: 001697

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
CAPITAL NURSERY
4700 FREEPORT BLVD., SACRAMENTO, CA 95822

4. Generator's Phone (916) 455-2601

A. State Manifest Document Number: 90800697

B. State Generator's ID:

5. Transporter 1 Company Name: NOR CAL OIL

6. US EPA ID Number: CAD982417255

C. State Transporter's ID:

D. Transporter's Phone: (800) 332-8710

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
REFINERIES SERVICE
13331 NORTH HWY. 33
PATTERSON, CA 95363

10. US EPA ID Number: CAD083166728

G. State Facility's ID:

H. Facility's Phone: (800) 874-4444

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. HAZARDOUS WASTE LIQUID N.O.S. ORM-E NA-9189	001	TT	300	G	State 241 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
TANK BOTTOM WASTE
RINSATE

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information
SEE E.R.G. 31
APPROPRIATE PROTECTIVE CLOTHING
"EMERGENCY CONTACT:800-332-8710"

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: James P Hesketh | Signature: [signature] | Month Day Year: 10/13/92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Joe Puett | Signature: [signature] | Month Day Year: 10/13/92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: | Signature: | Month Day Year:

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: GLENN SHIPMAN | Signature: [signature] | Month Day Year: 10/13/92

Do Not Write Below This Line

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERAL CONSTRUCTION
SERVICE STATIONS
BULK PETROLEUM PLANTS
PETRO-TITE TANK TESTING

TRIANGLE INC., OF SACRAMENTO

P.O. BOX 9795 SACRAMENTO, CALIFORNIA 95823 3525 52nd AVENUE
State License No. 183550
Phone (916) 421-1990 Fax 916-421-0642

1-14-92
1202166.00

DISPOSAL CERTIFICATION

This is to certify that the underground storage tanks listed below have been disposed of per governing codes and regulations. Based on all tanks when received to have been emptied of product, flushed and rinsed per governing regulations and purged with dry ice for hauling.

Tanks Received From:		Tanks Removed From:
NAME	Oil Equip Service	Capital Nursery
ADDRESS	P.O.Box 950	4700 Freeport Blvd
CITY	San Andreas CA 95249	Sacto Ca 95822

REF.:	TANK SIZE	PRODUCT STORED	DATE TANK RECEIVED	DATE TANK DISPOSED
A	1000	Gasoline	1-13-92	1-17-92
B	2000	Gasoline	1-13-92	1-17-92
C				
D				
E				

TRIANGLE INC OF SACRAMENTO

by L N Chronis

L N Chronis

CONFIRMATION SAMPLING RESULTS
for
UNDERGROUND TANK REMOVAL

CAPITAL NURSERY
4700 FREEPORT BOULEVARD
SACRAMENTO, CALIFORNIA

SACRAMENTO COUNTY

Prepared for:

OIL EQUIPMENT SERVICES, INC.

by:

WHEELDON & ASSOCIATES
Consulting Geologists/Environmental Assessors
621 Placerville Drive
Placerville, CA 95667
(916) 622-9579

February 20, 1992

CONFIRMATION SAMPLING RESULTS FOR UNDERGROUND TANK REMOVAL AT THE CAPITAL NURSERY SITE LOCATED AT 4700 FREEPORT BOULEVARD, SACRAMENTO, CALIFORNIA, IN SACRAMENTO COUNTY

INTRODUCTION

On January 13, 1992, Oil Equipment Services, Inc., under the direction of Jim Hesheth, removed two underground storage tanks and their associated pumps from Capital Nursery, located at 4700 Freeport Bouleverd in Sacramento, California (see Figure 1).

The purpose of this report is to describe the investigation following tank/pump removal, and to report the results of the confirmation soil sampling performed by Wheeldon & Associates.

The 1000-gallon unleaded gasoline tank and the 2000-gallon leaded gasoline tank and their associated pumps were removed from their respective underground locations south of a storage building and east of an equipment shed (see Figure 2).

INVESTIGATION

Upon removal, the outside surface of both tanks was examined. The 1000-gallon tank appeared to be in good condition, while the 2000-gallon tank was slightly pitted. No holes or evidence of leaks were observed in either tank.

A slight hydrocarbon odor was detected in the overburden soil covering the 1000-gallon tank removed from Excavation #1 (please see Figure 2 for excavation and sampling site locations). The native soil from approximately two feet to nine feet below ground surface was a clay loam. Following the tank removal, a small amount of water was observed draining into the excavation. At the direction of Chris Hamilton, County of Sacramento Environmental Management Department (CSEMD), a soil sample, labelled CN-1, was collected from soil in the backhoe bucket which had been removed from the bottom of the excavation beneath the center of the tank at approximately nine feet below ground surface.

Also at the direction of CSEMD, approximately 2.5 feet of overburden material was removed from the pump location associated with this tank, and a soil sample, CN-2, was collected from native soil using a hammer sampler. A distinct hydrocarbon odor was detected in this sample.

The overburden material taken from Excavation #1 was temporarily stockpiled on site and was sampled. Four samples, CNP-1 through CNP-4, were collected from the stockpiled material at locations chosen by CSEMD. The four samples were later composited by the laboratory. The overburden material which had been removed from the excavation was then returned to the excavation.

Hydrocarbon odors were not detected in the overburden soil covering the 2000-gallon tank removed from Excavation #2. The native soil from approximately two feet to thirteen feet below ground surface was a clay loam. A hard clay layer was encountered at the bottom of the excavation at approximately thirteen feet below ground surface. Following the tank removal, a small amount of water was observed draining into the excavation. At the direction of CSEMD, two soil samples, labelled CN-3 and CN-4, were collected from soil in the backhoe bucket which had been removed from the bottom of the excavation beneath each end of the tank at approximately thirteen feet below ground surface.

The overburden material taken from Excavation #2 was temporarily stockpiled on site and was sampled. Four samples, CMP-5 through CMP-8, were collected from the stockpiled material at locations chosen by CSEMD. The four samples were later composited by the laboratory. The overburden material which had been removed from the excavation was then returned to the excavation.

Soil samples were collected in six-inch brass tubes. Both ends of the tubes were covered with aluminum foil, and capped with polyethylene caps. The samples were sealed in zip-lock bags and immediately placed in a cooler containing crushed ice. The samples were temporarilly stored in a freezer at the Wheeldon & Associates facility until the following day, January 14, 1992, when they were shipped via Federal Express under strict chain-of-custody to GTEL Analytical Laborarories, a California Department of Health Services (DHS) certified laboratory.

LABORATORY RESULTS

Samples CN-1, CN-2, CN-3, and CN-4, in addition to the two composited samples CNP 1-4 and CNP 5-8 were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and for benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA methods 5030/Modified 8015, and 8020. In addition, samples CN-3, CN-4 and composited sample CNP 5-8 were analyzed for soluble lead using the Waste Extraction Test Method (WET). Copies of the chain-of-custody form and the analytical data sheets are included with this report. Table 1 shows the results of the laboratory analysis.

TABLE 1

Laboratory Results
(parts per million - ppm)

	LEAD	TPH-G	B	T	E	X
Detection Limit	0.1	1	0.005	0.005	0.005	0.015
CN-1		2	0.01	0.03	0.02	0.07
CN-2		980	<0.005	0.97	0.52	22
CN-3	<0.1ppm	50	<0.005	0.02	0.11	0.58
CN-4	<0.1ppm	19	0.01	0.03	0.05	0.21
CNP 1-4		2	0.07	0.19	0.05	0.34
CNP 5-8	0.88ppm	15	<0.005	0.01	0.01	0.11

CONCLUSION AND RECOMMENDATIONS

Laboratory analytical data for sample CN-1, collected from the bottom of Excavation #1, indicate that detectable levels of TPH-G and BTEX were present in the sample. However, the levels detected in the confirmation sample are at or very slightly above the detection limits for those constituents, and, because there appears to be a hard clay layer at approximately thirteen feet below ground surface, which should act to attenuate to insignificant levels the contamination found in sample CN-1, it is our opinion that no further action is warranted in Excavation #1.

Data for sample CN-2, collected at approximately 2.5 feet below ground surface at the pump location north of Excavation #1, indicate that hydrocarbon contamination is present at levels requiring additional remediation. We recommend that soil in this area be overexcavated until field observations indicate that all contamination has been removed. We recommend that confirmation sample(s) be collected in order to verify the soil condition following overexcavation.

Laboratory data for samples CN-3 and CN-4 indicate that elevated levels of hydrocarbon contamination remain in the bottom of Excavation #2. We recommend that the original overburden material returned to the excavation be removed, and that additional soil be removed from the bottom of the original excavation until field observations indicate that all contamination has been removed. We recommend that confirmation sample(s) be collected in order to verify the soil condition following overexcavation.

We also recommend that the spoils removed fromthe gas pump location and from Excavation #2 be encapsulated in plastic sheeting for four months in order that contaminants can naturally degrade. After that amount of time, the pile should again be tested for TPH-G and BTEX, to determine if sufficient degradation has occurred.

If you have any questions or comments, please contact us.

Sincerely,

George A. Wheeldon
Registered Geologist #2881
Registered Environmental Assessor #851
Registered Environmental Manager (NV) #EM-89
WHEELDON & ASSOCIATES

Attachments

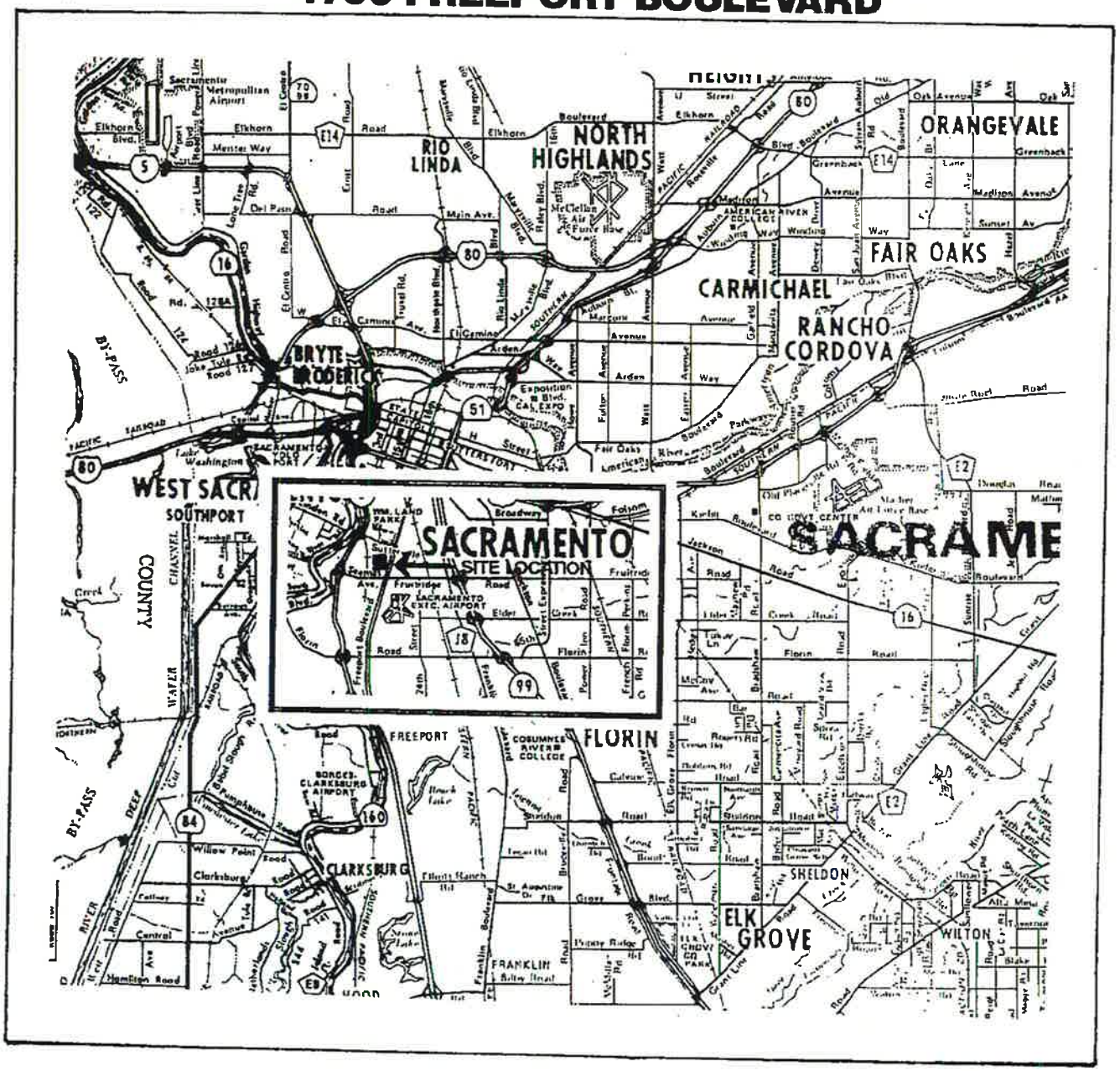
WHEELDON
and Associates
Consulting Geologists
Environmental Assessors
621 Placerville Drive
Placerville, CA 95667

FIGURE 1

LOCATION MAP

CAPITAL NURSERY

4700 FREEPORT BOULEVARD



and Associates
Consulting Geologists
Environmental Assessors
621 Placerville Drive
Placerville, CA 95667

FIGURE 2

PLOT PLAN

CAPITAL NURSERY

4700 FREEPORT BOULEVARD

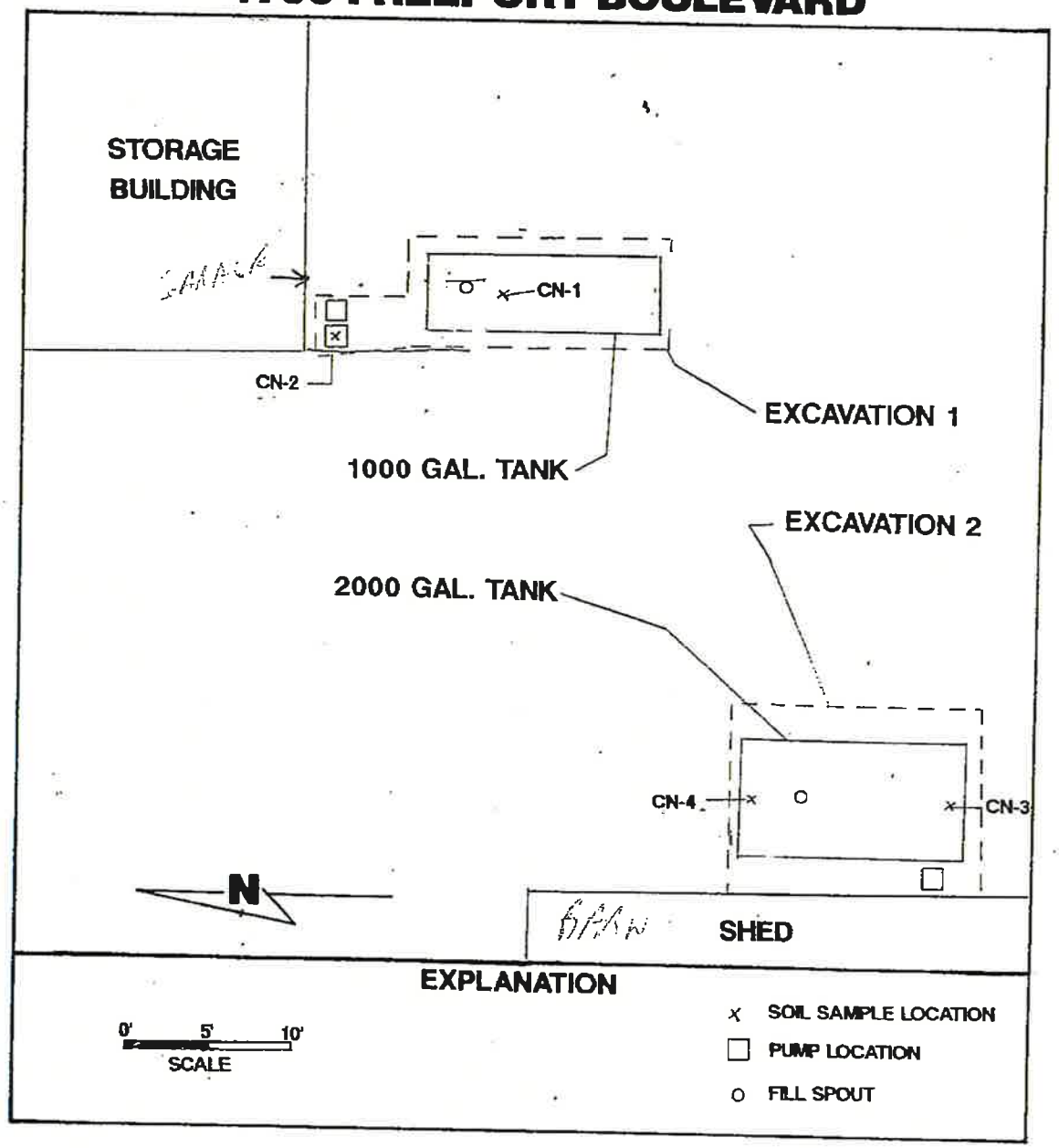


Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	
Client Identification		CN-1	CN-2	CNP1-4	
Date Sampled		01/13/92	01/13/92	01/13/92	
Date Extracted		01/17/92	01/17/92	01/17/92	
Date Analyzed		01/17/92	01/17/92	01/17/92	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	0.01	<0.005	0.07	
Toluene	0.005	0.03	0.97	0.19	
Ethylbenzene	0.005	0.02	0.52	0.05	
Xylene, total	0.015	0.07	22	0.34	
BTEX, total	--	0.13	23	0.65	
Gasoline	1	2	980	2	
Detection Limit Multiplier		1	1	1	
Percent solids		82	83	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

Client Number: WLD01WLD01
Project ID: Sacramento
Work Order Number: C2-01-326

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	
Client Identification		CN-3	CN-4	CNP5-8	
Date Sampled		01/13/92	01/13/92	01/13/92	
Date Extracted		01/17/92	01/17/92	01/17/92	
Date Analyzed		01/17/92	01/17/92	01/17/92	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	0.01	<0.005	
Toluene	0.005	0.02	0.03	0.01	
Ethylbenzene	0.005	0.11	0.05	0.01	
Xylene, total	0.015	0.58	0.21	0.11	
BTEX, total	--	0.71	0.3	0.13	
Gasoline	1	50	19	15*	
Detection Limit Multiplier		1	1	1	
Percent solids		81	81	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

* Hydrocarbons in the range of gasoline.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: WLD01WLD01
Project ID: Sacramento
Work Order Number: C2-01-327

Table 1

ANALYTICAL RESULTS

Extractable CAM Metals

GTEL Sample Number			01	02	03	
Client Identification			CN-3	CN-4	CNP5-8	
Date Sampled			01/13/92	01/13/92	01/13/92	
Date Extracted			01/21/92	01/21/92	01/21/92	
Date Analyzed (Method 6010)			1/23/92	01/23/91	01/23/92	
Analyte	Method[a]	Quantitation Limit, mg/L	Extract Concentration, mg/L			
Lead	EPA 6010	0.1	<0.1	<0.1	0.88	
Quantitation Limit Multiplier			1	1	1	
Percent solids			81	81	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction per Wet Extraction Test, California Administrative Code, Title 22, Chapter 30, Article 11, Section 66700.

C201 330

GTEL ENVIRONMENTAL LABORATORIES, INC

4080- Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72- 15109

Project Manager: WHEELDON + ASSOC. RICK KEEP
Phone #: 916-622-9579
FAX #: 916-622-0277
Address: 621 PLACERVILLE DR. PLACERVILLE Calif 95667
Site location: SACRAMENTO
Project Number:
Project Name: CAPITOL NURSERY
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Rick KEEP

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	NONE	OTHER	Sampling: DATE	TIME
CN-1	Excavation	01	1		X							X			11/13/92	10 55
CN-2	Excavation	02	1		X							X				11 25
CNP-1	Soil Pile	03	1		X							X				11 30
CNP-2			1		X							X				11 35
CNP-3			1		X							X				11 40
CNP-4			1		X							X				11 45

ANALYSIS REQUEST

BTEX 602 ☐ 8020 ☐ with MTBE ☐
BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐
TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel
Product I.D. by GC (SIMDIS) ☐
Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐
Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐
EPA 601 ☐ 8010 ☐ DCA only ☐
EPA 602 ☐ 8020 ☐
EPA 608 ☐ 8080 ☐ PCBs only ☐
EPA 610 ☐ 8310 ☐
EPA 624 ☐ 8240 ☐ NBS +15 ☐
EPA 625 ☐ 8270 ☐ NBS +25 ☐
EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐
TCLP Metals ☐ VOA ☐ Semi VOA ☐
EPA Priority Pollutant Metals ☐ HSL ☐
LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐
CAM Metals ☐ STLC ☐ TTLC
Corrosivity ☐ Flashpoint ☐ Reactivity ☐

D2

Rec'd via GC 11/17/92

CUSTODY RECORD

Received by: Date 11/14/92 Time 13:45
Received by: Date Time
Received by Laboratory: Date 11-15-92 Time 10:00
Way bill # 1290811896

Relinquished by Sampler: Date Time
Relinquished by: Date Time
Relinquished by: Date Time

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS: Composite CNP-1 THROUGH CNP-4 INTO 1 SAMPLE

GTEL QUOTATION #QC 92000

Lab Use Only Storage Location
Lot #: Work Order #:

C201 226

GTEL ENVIRONMENTAL LABORATORIES, INC

4080- Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72- 15162

CUSTODY RECORD

Project Manager: Rick Keep — WHEELDON & ASSOC. — Phone #: 916-622-9579 — FAX #: 916-622-0277

Address: 621 Placerville DR. Placerville Calif 95667 — Site location: Sacramento

Project Number: [redacted] — Project Name: Capitol Nursery

I attest that the proper field sampling procedures were used during the collection of these samples: — Sampler Name (Print): Rick Keep

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	NONE	OTHER	Sampling: DATE	TIME
CN-3	Excavation	01	1		x							x			1-13-92	13:15
CN-4	Excavation	02	1		x							x				13:30
CNP-5	Soil Pile	03	1		x							x				13:40
CNP-6	↓		1		x							x				13:50
CNP-7			1		x							x				14:00
CNP-8			1		x							x			↓	14:10

Analysis Request	CNP-5	CNP-6	CNP-7	CNP-8
BTEX 602 ☐ 8020 ☐ with MTBE ☐				
BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐	x			
TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel	x			
Product I.D. by GC (SIMDIS) ☐				
Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐				
Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐				
EPA 601 ☐ 8010 ☐ DCA only ☐				
EPA 602 ☐ 8020 ☐				
EPA 608 ☐ PCBs only ☐				
EPA 610 ☐ 8310 ☐				
EPA 624 ☐ 8240 ☐ BS +15 ☐				
EPA 625 ☐ 8270 ☐ NBS +25 ☐				
EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐				
TCLP Metals ☐ VOA ☐ Semi VOA ☐				
EPA Priority Pollutant Metals ☐ HSL ☐				
LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐				
CAM Metals ☐ STLC ☐ TTLC LEAD only	x			
Corrosivity ☐ Flashpoint ☐ Reactivity ☐				

Relinquished by Sampler:	Date	Time	Received by:
Rick Keep	1-15-92	1345	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory: 17908118896 Way bill #
	1-15-92	1700	

SPECIAL HANDLING

24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____ (#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS: RUN WET FOR LEAD ONLY
Composite CNP-5 through CNP-8 into 1 sample

GTEL QUOTATION # QC 92000/

Lab Use Only — Storage Location

Lot #: — Work Order #:

CONFIRMATION SAMPLING RESULTS
FOR
CAPITAL NURSERY
4700 FREEPORT BOULEVARD
SACRAMENTO, CALIFORNIA

SACRAMENTO COUNTY

Prepared for:

OIL EQUIPMENT SERVICES

Prepared by:

WHEELDON & ASSOCIATES
Consulting Geologists/Environmental Assessors
621 Placerville Drive
Placerville, California 95667
(916) 622-9579

September 7, 1993

INTRODUCTION

On July 28, 1993 Oil Equipment Services, under the direction of Keith Tallia, contracted Wheeldon & Associates to oversee the excavation of the locations previously occupied by a 1000 gallon gasoline tank and a 2000 gallon gasoline tank, and provide technical assistance and collect confirmation soil samples from of the each areas. The site is located at 4700 Freeport Boulevard in Sacramento, California (see Figure 1, Location Map).

The purpose of this report is to describe the soil excavation and stockpiling work and to describe the soil sampling performed by Wheeldon & Associates.

BACKGROUND

On January 13, 1992, Oil Equipment Services removed two underground storage tanks and their associated pumps from the Capital Nursery site located at 4700 Freeport Boulevard in Sacramento, California. One 1000 gallon unleaded gasoline tank and one 2000 gallon leaded gasoline tank were removed from the site. Soil confirmation samples were collected and the analytical results indicated that the pump area around the 1000 gallon tank contained detectable levels of TPH-G at the 2.5 feet below ground surface (BGS) level. A confirmation sample located at the bottom of the excavation in the 1000 gallon tank area was also collected and contained 2 parts per million as TPH-G. Two confirmation samples were collected from each end of the 2000 gallon tank excavation area. Each sample had detectable levels of TPH-G. Each excavation was backfilled with the overburden removed with the tanks due to space constraints pending further work.

INVESTIGATION

Excavation Area #2

On July 28, 1993, the 2000 gallon tank area was excavated to the 11 foot BGS level in order to remove the previously excavated tank overburden that the hole was backfilled with in January of 1992. Excavation resistance was encountered at around 11 feet BGS indicating the approximate limit of previous excavations. The excavation was then extended to the 15 foot BGS level (see Figure 2 - Plot Plan). The odor of gasoline was detected from the 12 foot BGS level to the 15 foot BGS level, varying in strength from area to area. The original excavation was enlarged to the east by three feet and to the north and south by one foot and four feet in depth.

WHEELDON
and Associates
Consulting Geologists
Environmental Assessors
521 Placerville Drive
Placerville, CA 95667

FIGURE 1

LOCATION MAP

CAPITAL NURSERY

4700 FREEPORT BOULEVARD

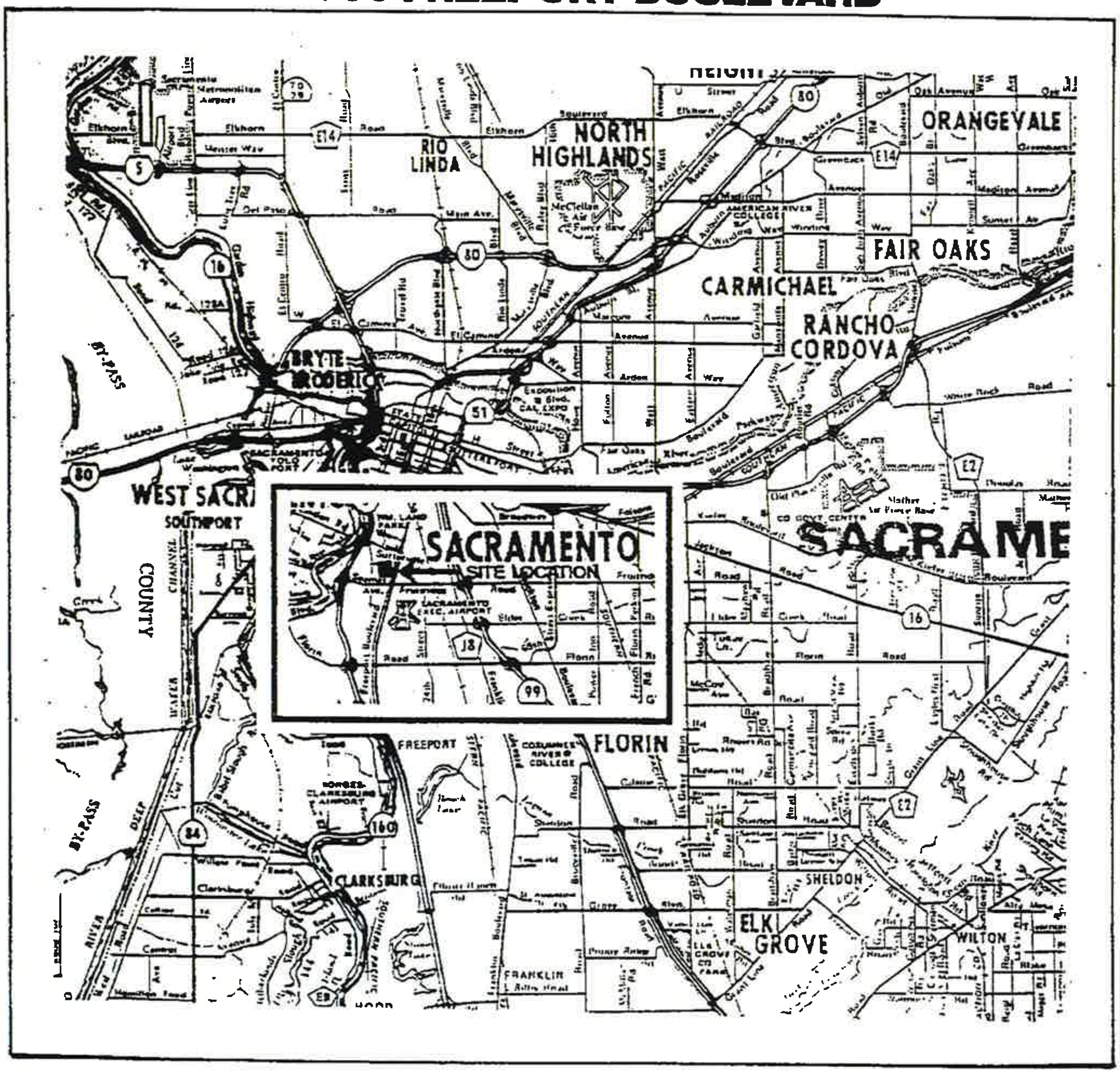
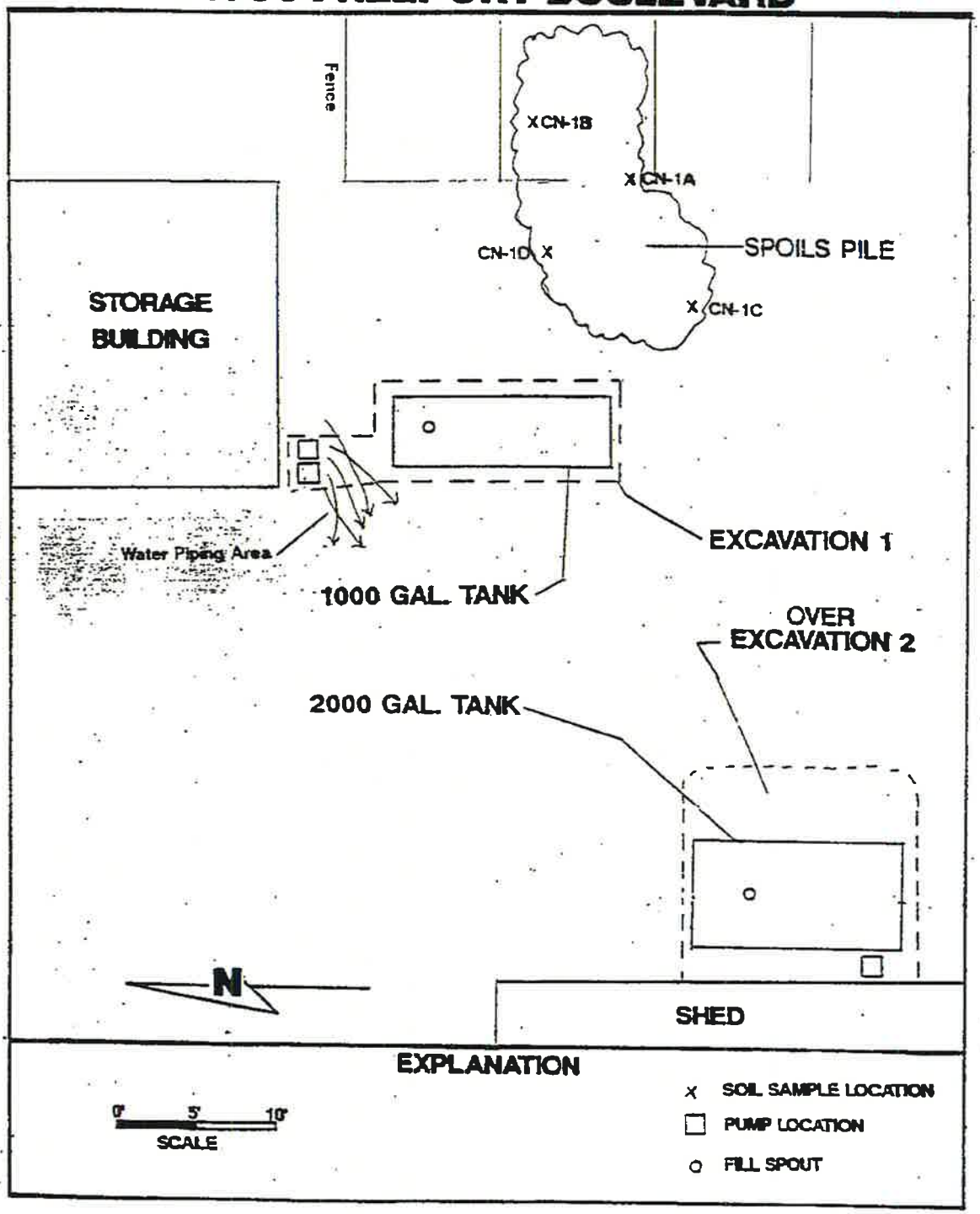


FIGURE 2

PLOT PLAN

CAPITAL NURSERY

4700 FREEPORT BOULEVARD



The spoils (approximately 100 cubic yards) from the excavation were stockpiled on and covered with visqueen on-site. Four soil characterization samples (CN-1A, CN-1B, CN-1C, & CN-1D) were collected from the spoils pile and composited into one sample at the laboratory. One confirmation soil sample (CN-3) was collected from the 15.5 foot BGS level from the center of the excavation. One confirmation soil sample (CN-2) was collected from the 15.5 foot BGS level at the southeast corner of the excavation. No provisions were made to test the side walls of the excavation to determine if the lateral extent of the soil contamination had been reached. The excavation was left open and fenced.

Excavation Area #1

The pump island associated with the 1000 gallon gasoline tank was targeted to be excavated due to detectable levels of gasoline in the soil as reported in the January 1992 investigation. The pumps and piping had been removed in January of 1992. Since that time, Capital Nursery has used that area for a water supply and fertilizer distribution center. A maze of pipes exist in this location making excavation impossible at this time. A shovel was used to dig in and around this area. A shallow hole was dug with the shovel and the soil from the hole had a strong hydrocarbon odor. No further work was performed in this area due to the piping network.

LABORATORY ANALYTICAL RESULTS

Soil characterization composite sample CN-1A - CN-1D was analyzed for TPH-G & BTEX, Halogenated Volatile Organics, EPA method 8010, and Priority Pollutant Metals plus barium and cobalt, by EPA method 6010-7000.

Soil confirmation samples CN-2 and CN-3 were each analyzed for TPH-G and BTEX by EPA method 8015/8020. Copies of the chain-of-custody form and the analytical data reports are included with this report. Table 1 displays the results of the laboratory analysis.

TABLE 1
CAPITAL NURSERY
SOIL SAMPLING

SAMPLE #	TPH-G	BTEX	* EPA 8010
CN-1A - CN-1D	2.9 ppm	ND	ND
CN-2	ND	ND	NA
CN-3	ND	ND	NA

ND = Not Detected **NA** = Not Analyzed
* EPA 8010 - Halogenated Volatile Organics

TABLE 2
CAPITAL NURSERY
METALS - EPA 6010/7000
(TTLC)

SAMPLES CN-1A - CN-1D

ANALYTE	RESULTS
Ag (Silver)	ND
As (Arsenic)	6.9
Ba (Barium)	140
Be (Beryllium)	ND
Cd (Cadmium)	0.60
Co (Cobalt)	11
Cr (Chromium)	51
Cu (Copper)	22
Hg (Mercury)	ND
Ni (Nickel)	47
Pb (Lead)	22
Sb (Antimony)	ND
Se (Selenium)	ND
Tl (Thallium)	ND
Zn (Zinc)	60

ND = Not Detected at or above indicated Reporting Limit
(Please see attached Laboratory Analysis Reports)

CONCLUSIONS AND RECOMMENDATIONS

Spoils Pile - Area #2

The laboratory analytical data indicate that detectable levels of halogenated volatile organics were not present in the characterization composite sample. The Priority Pollutant Metals including barium and cobalt were discovered to be below the action levels for all of the metals. The laboratory analytical data indicate that detectable levels of TPH-G at a very low level were present in the sample at a concentration of 2.9 parts per million. The laboratory analytical data indicate that detectable levels of BTEX were not present in the sample. Wheeldon & Associates recommends that the spoils pile be allowed to aerate on site for four months. At the end of a four month period the soil should be sampled for TPH-G to determine if the concentration of TPH-G has been reduced.

Confirmation Samples - Area #2

The laboratory analytical data for samples CN-2 and CN-3 indicate that detectable levels of TPH-G & BTEX were not present in either of the soil samples. The vertical extent of the soil contamination has been reached. Wheeldon & Associates recommends that the side walls of the excavation be tested to determine if the lateral extent of the contamination has been reached.

Area #1

Wheeldon & Associates recommend that the lateral and vertical extent of the soil contamination be delineated by either shallow hand augering or drilling prior to excavation due to the physical constraints in this area. When the lateral and vertical extent of the contamination has been established, a decision will have to be made as to what methods will be used to excavate the area, and whether or not existing piping should be removed.

George A. Wheeldon
Registered Geologist #2881
Registered Environmental Assessor #851
Wheeldon and Associates

APPENDIX I

CALIFORNIA LABORATORY SERVICES 7/7/93 CHAIN OF CUSTODY LOG NO. 0519

CLIENT NAME: WHEELDON & ASSOCIATES
ADDRESS: 621 PLACERVILLE DRIVE
PLACERVILLE, CA 95667
PROJECT NAME: CN
PROJECT MANAGER: MICHAEL VANDER DUSSEN PHONE # 622-9579
SAMPLED BY: M. VANDER DUSSEN
JOB DESCRIPTION: GASOLINE SOIL CONTAMINATION
SITE LOCATION: FREEPORT BLVD., SACRAMENTO
Phone 622-9579

CLIENT JOB NUMBER: 92-06

DESTINATION LABORATORY:
☒ CLS
3249 FITZGERALD RD.
RANCHO CORDOVA, CA
95742
☐ OTHER

FIELD CONDITIONS: WARM & WINDY

COMPOSITE: COMPOSITE SAMPLES CN-1A → 1D

SPECIAL INSTRUCTIONS:

DATE	TIME	SAMPLE IDENTIFICATION	METHOD	MATRIX	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	TPH-GAS, BTXE 8015/8020	PRIORITY POLLUTANT METALS (15) INCLUDE - As, Ba, Cd, Cr (TOTAL) Co, Cu, Pb, Ni, Hg, Zn - TTLC COLD/7000	ANALYSIS REQUESTED	TURN AROUND TIME 24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
7/28/93	12:45	CN-1A		SOIL	1	6" BRASS	3								
"	12:45	CN-1B		"	1	TUBE	"	X	X					X	4 LOCATIONS TO COMPOSITE
"	1445	CN-1C		"	1	"	"								
"	14:55	CN-1D		"	1	"	"								
"	1410	CN-2		"	1	"	"	X						X	
"	1405	CN-3		"	1	"	"	X						X	

SUSPECTED CONSTITUENTS

SAMPLE RETENTION TIME

PRESERVATIVES: (1) HCL (2) HNO_3 (3) = COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	REC'D BY (SIGN)	PRINT NAME / COMPANY
Michael VanderDussen	MICHAEL VANDERDUSSEN / WHEELDON & ASSOCIATES	7/30/93 1110	M. Smith	M. SMITH / CLS
M. Smith	M. SMITH, CLS	7/30/93 1110		

REC'D AT LAB BY: Dave Dilbert
DATE / TIME: 7-30-93 1110
CONDITIONS / COMMENTS:

SHIPPED VIA ☐ FED X ☐ UPS ☐ OTHER CLS AIR BILL #

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Sampled: **08/02/93**
Date Received: **07/30/93**
Date Digested: **08/04/93**
Date Analyzed: **08/05/93**
Date Reported: **08/19/93**
Client ID No.: **COMP.1A,1B,1C,1D**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758-5A**
Batch No.: **M930804A**
Matrix: **SOIL**

***Sample:* COMP.1A,1B,1C,1D**

Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)	Method
Ag (Silver)	7440-22-4	ND	2.5	6010
As (Arsenic)	7440-38-2	6.9	0.50	7060
Ba (Barium)	7440-39-3	140	5.0	6010
Be (Beryllium)	7440-41-7	ND	0.50	6010
Cd (Cadmium)	7440-43-9	0.60	0.50	6010
Co (Cobalt)	7440-48-4	11	5.0	6010
Cr (Chromium)	7440-47-3	51	5.0	6010
Cu (Copper)	7440-50-8	22	5.0	6010
Hg (Mercury)	7439-97-6	ND	0.050	7471
Ni (Nickel)	7440-02-0	47	5.0	6010
Pb (Lead)	7439-92-1	22	5.0	6010
Sb (Antimony)	7440-36-0	ND	25	6010
Se (Selenium)	7783-00-8	ND	0.50	7740
Tl (Thallium)	7440-28-0	ND	25	6010
Zn (Zinc)	7440-66-6	60	5.0	6010

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Digested: **08/04/93**
Date Analyzed: **08/05/93**
Date Reported: **08/19/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **M930804A**
Matrix: **SOIL**

METHOD BLANK

Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)	Method
Ag (Silver)	7440-22-4	ND	2.5	6010
As (Arsenic)	7440-38-2	ND	0.50	7060
Ba (Barium)	7440-39-3	ND	5.0	6010
Be (Beryllium)	7440-41-7	ND	0.50	6010
Cd (Cadmium)	7440-43-9	ND	0.50	6010
Co (Cobalt)	7440-48-4	ND	5.0	6010
Cr (Chromium)	7440-47-3	ND	5.0	6010
Cu (Copper)	7440-50-8	ND	5.0	6010
Hg (Mercury)	7439-97-6	ND	0.050	7471
Ni (Nickel)	7440-02-0	ND	5.0	6010
Pb (Lead)	7439-92-1	ND	5.0	6010
Sb (Antimony)	7440-36-0	ND	25	6010
Se (Selenium)	7783-00-8	ND	0.50	7740
Tl (Thallium)	7440-28-0	ND	25	6010
Zn (Zinc)	7440-66-6	ND	5.0	6010

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Digested: **08/04/93**
Date Analyzed: **08/05/93**
Date Reported: **08/19/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **M930804A**
Matrix: **SOIL**

MATRIX SPIKE

Analyte	CAS No.	MS Conc. (mg/kg)	MS Recovery (percent)
Ag (Silver)	7440-22-4	20	88
As (Arsenic)	7440-38-2	8.0	98
Ba (Barium)	7440-39-3	400	88
Be (Beryllium)	7440-41-7	10	92
Cd (Cadmium)	7440-43-9	10	97
Co (Cobalt)	7440-48-4	100	90
Cr (Chromium)	7440-47-3	40	BE
Cu (Copper)	7440-50-8	50	108
Hg (Mercury)	7439-97-6	0.25	99
Ni (Nickel)	7440-02-0	100	BE
Pb (Lead)	7439-92-1	100	90
Sb (Antimony)	7440-36-0	100	MI
Se (Selenium)	7783-00-8	6.0	MI
Tl (Thallium)	7440-28-0	400	93
Zn (Zinc)	7440-66-6	100	BE

BE = Matrix spike recovery data can not be produced because background level exceeds matrix spike concentration.
MI = Matrix spike recovery data can not be generated due to matrix interference.

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Digested: **08/04/93**
Date Analyzed: **08/05/93**
Date Reported: **08/19/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **M930804A**
Matrix: **SOIL**

MATRIX SPIKE DUPLICATE

Analyte	CAS No.	MSD Conc. (mg/kg)	MSD Recovery (percent)
Ag (Silver)	7440-22-4	20	86
As (Arsenic)	7440-38-2	8.0	91
Ba (Barium)	7440-39-3	400	76
Be (Beryllium)	7440-41-7	10	90
Cd (Cadmium)	7440-43-9	10	96
Co (Cobalt)	7440-48-4	100	87
Cr (Chromium)	7440-47-3	40	BE
Cu (Copper)	7440-50-8	50	87
Hg (Mercury)	7439-97-6	0.25	104
Ni (Nickel)	7440-02-0	100	BE
Pb (Lead)	7439-92-1	100	85
Sb (Antimony)	7440-36-0	100	MI
Se (Selenium)	7783-00-8	6.0	MI
Tl (Thallium)	7440-28-0	400	91
Zn (Zinc)	7440-66-6	100	BE

BE = Matrix spike recovery data can not be produced because background level exceeds matrix spike concentration.
MI = Matrix spike recovery data can not be generated due to matrix interference.

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Digested: **08/04/93**
Date Analyzed: **08/05/93**
Date Reported: **08/19/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **M930804A**
Matrix: **SOIL**

RELATIVE % DIFFERENCE

Analyte	CAS No.	Relative Percent Difference (percent)
Ag (Silver)	7440-22-4	2
As (Arsenic)	7440-38-2	7
Ba (Barium)	7440-39-3	15
Be (Beryllium)	7440-41-7	2
Co (Cobalt)	7440-48-4	3
Cd (Cadmium)	7440-43-9	1
Cr (Chromium)	7440-47-3	BE
Cu (Copper)	7440-50-8	22
Hg (Mercury)	7439-97-6	5
Ni (Nickel)	7440-02-0	BE
Pb (Lead)	7439-92-1	6
Sb (Antimony)	7440-36-0	MI
Se (Selenium)	7783-00-8	MI
Tl (Thallium)	7440-28-0	2
Zn (Zinc)	7440-66-6	BE

BE = Matrix spike recovery data can not be produced because background level exceeds matrix spike concentration.
MI = Matrix spike recovery data can not be generated due to matrix interference.

California Laboratory Services

Analysis Report: **Priority Pollutant Metals, EPA Methods 6010/7000**

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Reported: **08/19/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **M930804A**
Matrix: **SOIL**

LAB CONTROL STANDARD

Analyte	CAS No.	LCS Conc. (mg/kg)	LCS Recovery (percent)
Ag (Silver)	7440-22-4	20	94
As (Arsenic)	7440-38-2	8.0	93
Ba (Barium)	7440-39-3	400	96
Be (Beryllium)	7440-41-7	10	91
Cd (Cadmium)	7440-43-9	10	94
Co (Cobalt)	7440-48-4	100	94
Cr (Chromium)	7440-47-3	40	95
Cu (Copper)	7440-50-8	50	97
Hg (Mercury)	7439-97-6	0.25	100
Ni (Nickel)	7440-02-0	100	96
Pb (Lead)	7439-92-1	100	94
Sb (Antimony)	7440-36-0	100	91
Se (Selenium)	7783-00-8	6.0	103
Tl (Thallium)	7440-28-0	400	95
Zn (Zinc)	7440-66-6	100	94

California Laboratory Services

Analysis Report: **Halogenated Volatile Organics, EPA Method 8010**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Sampled: **08/02/93**
Date Received: **07/30/93**
Date Extracted: **08/11/93**
Date Analyzed: **08/11/93**
Date Reported: **08/12/93**
Client ID No.: **COMP.1A,1B,1C,1D**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758A-5A**
Batch No.: **11876**
Matrix: **SOIL**

SURROGATE

Analyte	CAS No.	Surr Conc. (ug/kg)	Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	97

Sample: **COMP.1A,1B,1C,1D**

Analyte	CAS No.	Results (ug/kg)	Rep. Limit (ug/kg)
Bromodichloromethane	72-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	5
Carbon tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	5
2-Chloroethyl vinyl ether	110-75-8	ND	5
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	5
Dibromochloromethane	124-48-1	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Dichlorodifluoromethane	75-71-8	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Methylene chloride	75-09-2	ND	5
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Trichlorofluoromethane	75-69-4	ND	5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	5
Vinyl chloride	75-01-4	ND	5

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Halogenated Volatile Organics, EPA Method 8010**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/11/93**
Date Analyzed: **08/11/93**
Date Reported: **08/12/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758A**
Batch No.: **11876**
Matrix: **SOIL**

MB SURROGATE

Analyte	CAS No.	Surr Conc. (ug/kg)	MB Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	110

METHOD BLANK

Analyte	CAS No.	Results (ug/kg)	Rep. Limit (ug/kg)
Bromodichloromethane	72-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	5
Carbon tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	5
2-Chloroethyl vinyl ether	110-75-8	ND	5
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	5
Dibromochloromethane	124-48-1	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Dichlorodifluoromethane	75-71-8	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Methylene chloride	75-09-2	ND	5
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Trichlorofluoromethane	75-69-4	ND	5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	5
Vinyl chloride	75-01-4	ND	5

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Halogenated Volatile Organics, EPA Method 8010**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/11/93**
Date Analyzed: **08/11/93**
Date Reported: **08/12/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758A**
Batch No.: **11876**
Matrix: **SOIL**

MB SPIKE SURROGATE

Analyte	CAS No.	MBS Surr. Conc. (ug/kg)	Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	102

MB SPIKE

Analyte	CAS No.	MBS Conc. (ug/kg)	MBS Recovery (percent)
Chlorobenzene	108-90-7	100	106
1,1-Dichloroethene	75-35-4	100	77
Trichloroethene	79-01-6	100	116

MB SPIKE DUPLICATE SURR.

Analyte	CAS No.	MBSD Surr. Conc. (ug/kg)	MBSD Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	102

MB SPIKE DUPLICATE

Analyte	CAS No.	MBSD Conc. (ug/kg)	MBSD Recovery (percent)
Chlorobenzene	108-90-7	100	108
1,1-Dichloroethene	75-35-4	100	76
Trichloroethene	79-01-6	100	113

MB SPIKE RPD

Analyte	CAS No.	MBS Relative Percent Difference (percent)
Chlorobenzene	108-90-7	2
1,1-Dichloroethene	75-35-4	1
Trichloroethene	79-01-6	3

California Laboratory Services

Analysis Report: **Halogenated Volatile Organics, EPA Method 8010**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Reported: **08/12/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758A**
Batch No.: **11876**
Matrix: **SOIL**

LAB CONTROL STANDARD

Analyte	CAS No.	LCS Conc. (ug/L)	LCS Recovery (percent)
Chlorobenzene	108-90-7	20	108
1,1-Dichloroethene	75-35-4	20	82
Trichloroethene	79-01-6	20	121

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Sampled: **08/02/93**
Date Received: **07/30/93**
Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

ANALYTE

Sample I.D. Client	CLS	TPH as Gasoline (mg/kg)
COMP.1A,1B,1C, 1D	5A	2.9
CN-2	6A	ND
CN-3	7A	ND
Rep. Limit		1.0

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

METHOD BLANK

Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)
TPH as Gasoline	N/A	ND	1.0

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Sampled: **08/02/93**
Date Received: **07/30/93**
Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

SURROGATE RECOVERY

Sample I.D. Client	CLS	o-Chlorotoluene CAS No. 95-49-8 (percent)
COMP.1A,1B,1C, 1D	5A	98
CN-2	6A	110
CN-3	7A	110
Surr Conc. (ug/kg)		100

ANALYTE

Sample I.D. Client	CLS	Benzene 71-43-2 (ug/kg)	Toluene 108-88-3 (ug/kg)	Ethylbenzene 100-41-4 (ug/kg)	Xylenes, total 1330-20-7 (ug/kg)
COMP.1A,1B,1C, 1D	5A	ND	ND	ND	ND
CN-2	6A	ND	ND	ND	ND
CN-3	7A	ND	ND	ND	ND
Rep. Limit		5	5	5	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

MB SURROGATE

Analyte	CAS No.	Surr Conc. (ug/kg)	MB Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	101

METHOD BLANK

Analyte	CAS No.	Results (ug/kg)	Rep. Limit (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-3	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, total	1330-20-7	ND	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

MS SURROGATE

Analyte	CAS No.	MS Surr. Conc. (ug/kg)	MS Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	107

MATRIX SPIKE

Analyte	CAS No.	MS Conc. (ug/kg)	MS Recovery (percent)
Benzene	71-43-2	50	80
Toluene	108-88-3	50	85
Ethylbenzene	100-41-4	50	92
Xylenes, total	1330-20-7	150	87

MSD SURROGATE

Analyte	CAS No.	Surr. Conc. (ug/kg)	MSD Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	107

MATRIX SPIKE DUPLICATE

Analyte	CAS No.	MSD Conc. (ug/kg)	MSD Recovery (percent)
Benzene	71-43-2	50	80
Toluene	108-88-3	50	85
Ethylbenzene	100-41-4	50	92
Xylenes, total	1330-20-7	150	87

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Extracted: **08/03/93**
Date Analyzed: **08/03/93**
Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

RELATIVE % DIFFERENCE

Analyte	CAS No.	Relative Percent Difference (percent)
Benzene	71-43-2	0
Toluene	108-88-3	0
Ethylbenzene	100-41-4	0
Xylenes, total	1330-20-7	0

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **CN**

Date Reported: **08/06/93**

Project No.: **92-06**
Contact: **Michael VanderDussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **791758**
COC Log No.: **0519**
CLS ID No.: **M1758**
Batch No.: **11808**
Matrix: **SOIL**

LAB CONTROL STANDARD

Analyte	CAS No.	LCS Conc. (ug/L)	LCS Recovery (percent)
Benzene	71-43-2	20	99
Toluene	108-88-3	20	99

WHEELDON
and ASSOCIATES

Consulting Geologists
Environmental Assessors

621 PLACERVILLE DRIVE • PLACERVILLE • CALIFORNIA 95667
916-622-9579 • FAX 916-622-0277

February 8, 1994

Mr. Keith Tallia
Oil Equipment Services
P.O. Box 950
750 Industrial Way
San Andreas, CA 95249

RE: Sample Results from 11/10/93 Sampling at Capital Nursery, 4700 Freeport Boulevard, Sacramento - Lateral and Vertical Definition of Petroleum Hydrocarbon Soil Impact - Previous Pump Area

Dear Keith,

This letter report is an addendum to our 11/18/93 report, and includes analysis results from sample numbers CN-P2, CN-P3, and CN-P4, which were collected at the site on 11/10/93. The sampling in this area was performed at your direction in an attempt to further define the lateral and vertical extent of petroleum hydrocarbon impact on the soils under the fuel pump/dispenser area as was recommended in our Confirmation Sampling Results Report of 9/07/93.

Investigation

During the 11/08/93 overexcavation confirmation sampling and soil sampling phase of site investigations, a more detailed plan of existing piping under the previous pump/dispenser area was developed through hand excavation observations and an underground utilities location instrument survey conducted by the owner. The Site Map, showing these features along with the locations of all in place samples analyzed to date, is attached to this report.

All samples were collected in six-inch brass tubes from hand augered holes. Both ends of the tubes were covered with aluminum foil, and capped with polyethylene caps. The samples were sealed in zip-loc bags and immediately placed in a cooler containing ice. The samples were temporarily stored in a freezer at the Wheeldon & Associates facility until the following day when they were

transported by courier to California Laboratory Services (CLS) laboratory, Rancho Cordova branch, under strict chain-of-custody documentation by Wheeldon & Associates. CLS is a member of the Environmental Laboratory Accreditation Program (ELAP #1233) and is a Department of Health Services Certified Environmental Laboratory.

The sample numbers, depths, and analyses results for samples collected in the pump/dispenser area from 1/13/92 to 11/10/93 are summarized in Table 1. All samples were analyzed for TPH-Gasoline (method m-8015), and Benzene, Toluene, Ethylbenzene, and Xylenes (method 8020). Laboratory results reports are attached to this report.

TABLE 1
SAMPLE ANALYSES RESULTS
FUEL PUMP/DISPENSER AREA
CAPITAL NURSERY

Sample Number	Sample Depth (ft.)	TPH-G	B	T	E	X
		(PPM)				
CN-1	9.0	2.0	.01	.03	.02	.07
CN-2	2.5	980	ND	.97	.52	22
CN-P1	12.0	460	ND	ND	7.9	22
CN-P2	7.5	ND	ND	ND	ND	ND
CN-P3	9.0	ND	ND	ND	ND	ND
CN-P4	5.5	ND	ND	ND	ND	ND

ND = Not Detected at or above laboratory reporting limit (please see attached laboratory reports)

The results of the analyses conducted in the previous fuel pump/dispenser area indicate that soils in the area closest to the piping and pump were most strongly impacted by petroleum hydrocarbons. Analysis of step-out samples collected 7 to 11 feet horizontally from the central pump area (samples CN-P2, CN-P3, and CN-P4) at depths of 5.5 to 9 feet below ground surface (BGS) indicate no soil impact at those distances. Considering the lateral and vertical distribution of the hydrocarbon constituent levels indicated by the analyses results, an estimate of the volume of impacted soil that considers an area 8 feet by 8 feet and 14 feet deep suggests between 40 and 50 cubic yards of soil have been affected.

The impacted soil area is bounded at the surface on the north and east by buildings, and at approximately 1.5 to 2.5 feet BGS by at least six known utility lines consisting of water, natural gas, electric, and water/fertilizer mix lines.

Conclusions

At its discretion, the Sacramento County Environmental Management Department may decide that the impacted soil must be removed, or that it can remain in place due to the removal complications presented by the existing buildings and utility lines. If removal is required, a combination of delicate machine excavation and hand work will be necessary, or complete removal of the utilities may be needed for machine excavation.

Prior to any excavation in this area, the owner must review the utilities locations indicated on the Site Map and verify the locations, making any revisions as needed for accuracy.

Please call with any questions or comments you might have.

Sincerely,

Wheeldon & Associates

Michael Vander Dussen
Associate Geologist, RG 3966

Attachments: Site Map, Laboratory Analysis Reports

mv

WHEELDON & ASSOCIATES
Geological Consultants
621 Placerville Drive
PLACERVILLE, CALIFORNIA 95667
(916) 622-9579

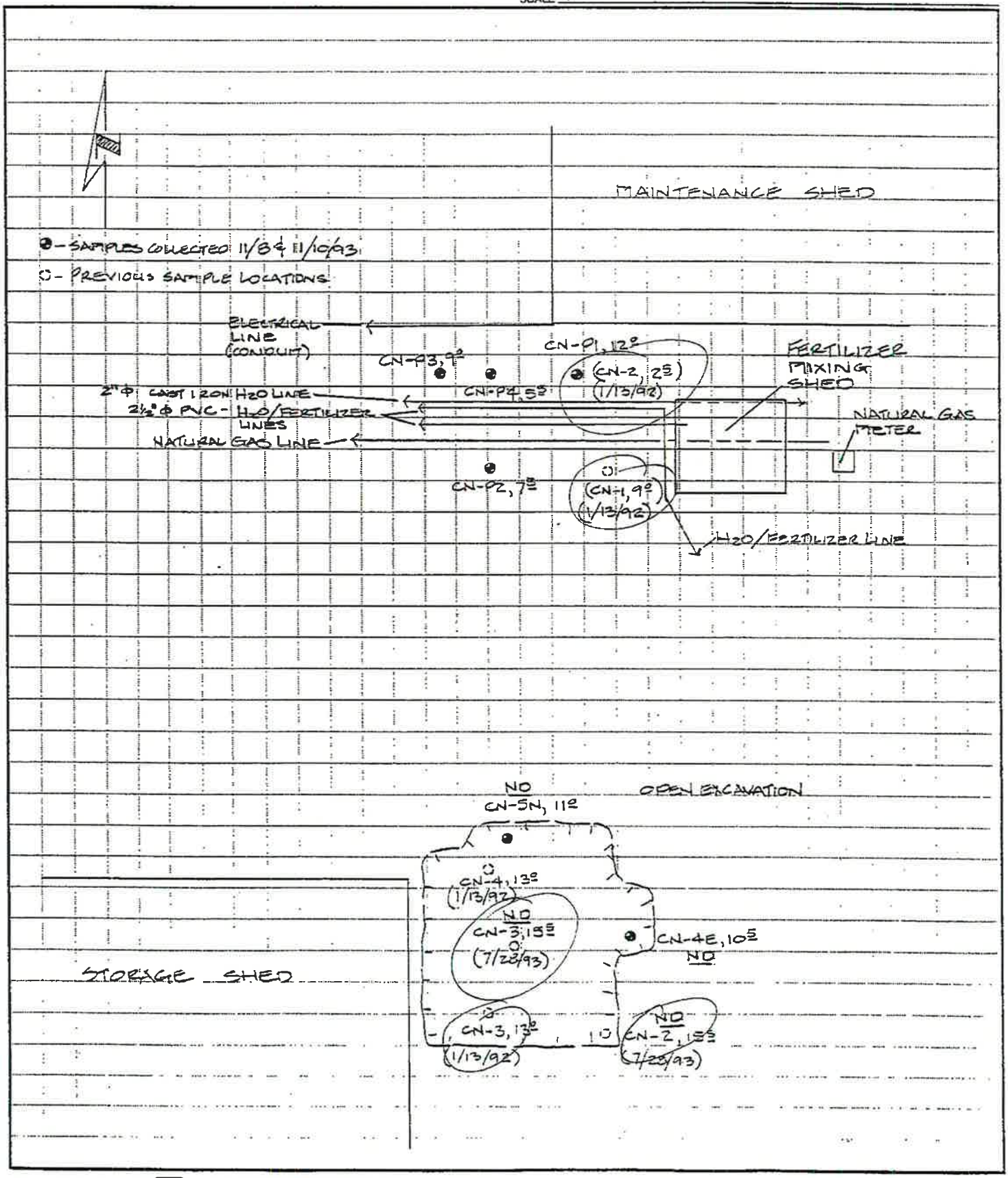
JOB CAPITAL NURSERY

SHEET NO. SITE MAP OF

CALCULATED BY MV DATE 11/18/93

CHECKED BY DATE

SCALE 1" = 10'



Project Manager: RICK KEEP — WHEELDON & ASSOC.
Phone #: 916-622-9579
FAX #: 916-622-0277
Address: 621 PLACERVILLE DR.
PLACERVILLE CALIF 95667
Site location: SACRAMENTO
Project Number:
Project Name: CAPITOL NURSERY
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Rick KEEP

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	H2SO4	ICE	NONE	OTHER	Sampling: DATE	TIME
CN-1	Excavation	01	1		X							X			11/13/92	10 55
CN-2	Excavation	02	1		X							X				11 25
CNP-1	Soil Pile	03	1		X							X				11 30
CNP-2			1		X							X				11 35
CNP-3			1		X							X				11 40
CNP-4			1		X							X				11 45

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐	TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel	Product I.D. by GC (SIMDIS) ☐	Total Oil & Grease 413.1 ☐ 413.2 ☐ 503A ☐	Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐	EPA 601 ☐ 8010 ☐ DCA only ☐	EPA 602 ☐ 8020 ☐	EPA 608 ☐ 8080 ☐ PCBs only ☐	EPA 610 ☐ 8310 ☐	EPA 624 ☐ 8240 ☐ NBS +15 ☐	EPA 625 ☐ 8270 ☐ NBS +25 ☐	EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi VOA ☐	EPA Priority Pollutant Metals ☐ HSL ☐	LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐	CAM Metals ☐ STLC ☐ TTLC	Corrosivity ☐ Flashpoint ☐ Reactivity ☐
	X	X														

02

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS: Composite CNP-1 THROUGH CNP-4 INTO 1 SAMPLE

GTEL QUOTATION QC 92000

Lab Use Only — Storage Location
Lot #: — Work Order #:

Relinquished by Sampler: Rick Keep — Date — Time
Received by: — Date 11/14/92 — Time 13:45
Relinquished by: — Date — Time
Received by: — Date — Time
Relinquished by: — Date 11-15-92 — Time 1010
Received by Laboratory: — Date — Time
Way bill # 12908118 96

Client Number: WLD01WLD01
Project ID: Sacramento
Work Order Number: C2-01-330

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	
Client Identification		CN-1	CN-2	CNP1-4	
Date Sampled		01/13/92	01/13/92	01/13/92	
Date Extracted		01/17/92	01/17/92	01/17/92	
Date Analyzed		01/17/92	01/17/92	01/17/92	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	0.01	<0.005	0.07	
Toluene	0.005	0.03	0.97	0.19	
Ethylbenzene	0.005	0.02	0.52	0.05	
Xylene, total	0.015	0.07	22	0.34	
BTEX, total	–	0.13	23	0.65	
Gasoline	1	2	980	2	
Detection Limit Multiplier		1	1	1	
Percent solids		82	83	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

CALIFORNIA LABORATORY SERVICES — CHAIN OF CUSTODY

M2865

LOG NO. 0532

CLIENT NAME: WHEELDON & ASSOCIATES
ADDRESS: 621 PLACERVILLE DRIVE
PLACERVILLE CA 95667
PROJECT NAME: CAPITAL NURSERY
PROJECT MANAGER: MICHAEL VANDER DUSSEN PHONE # 622-9577
SAMPLED BY: " "
JOB DESCRIPTION: SOIL SAMPLING
SITE LOCATION: FREEPORT BLVD.

CLIENT JOB NUMBER: 93-77

DESTINATION LABORATORY:
☒ CLS
3249 FITZGERALD RD.
RANCHO CORDOVA, CA
95742
☐ OTHER

FIELD CONDITIONS: CLEAR / WARM

COMPOSITE:

SPECIAL INSTRUCTIONS: *ANALYZE SOIL FROM MIDDLE OF TUBE IN SAMPLE CN-P1

DATE	TIME	SAMPLE IDENTIFICATION	METHOD	MATRIX	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	TPH GAS & BTXE (M 8015/8020)	TURN AROUND TIME: 24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
11/8/93	9:55	CN-4E	GRAB	SOIL	1	BRASS TUBE	3	X			X		
"	10:10	CN-5N	"	"	1	"	"	X			X		
"	15:00	CN-P1	HAMMER SAMPLER	"	1	"	"	X				X	*ENDS OF TUBE HAND PACKED
			~~HAMMER SAMPLER~~										

SUSPECTED CONSTITUENTS

SAMPLE RETENTION TIME

PRESERVATIVES: (1) HCL (2) HNO_3 (3) = COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	REC'D BY (SIGN)	PRINT NAME / COMPANY
[signature]	MICHAEL VANDER DUSSEN / WHEELDON & ASSOCIATES	11/9/93 10:30 AM	Kris Hessler	KRIS HESSLER / W.A.
Kris Hessler	KRIS HESSLER / WA	11/9/93 2:06PM	[signature]	M. Reyes / CLS
[signature]	M. Reyes / CLS	11.9.93 1450		

REC'D AT LAB BY: [signature] DATE / TIME: 11-9-93 / 1450 CLS

CONDITIONS / COMMENTS:

SHIPPED VIA: ☐ FED X ☐ UPS ☐ OTHER _____ AIR BILL #

California Laboratory Services

Wheeldon & Associates
621 Placerville Drive
Placerville, CA 95667

11/18/93

Attention: Michael Vander Dussen

Reference: Analytical Results

Project Name: Capital Nursery
Project No.: 93-77
Date Received: 11/09/93
Chain Of Custody: 0532

CLS ID No.: M2868
CLS Job No.: 792868

The following analyses were performed on the above referenced project:

No. of Samples	*Turnaround Time*	*Analysis Description*
2	5 Days	TPH Gasoline and BTXE (soil)
1	10 Days	TPH Gasoline and BTXE (soil)

These samples were received by California Laboratory Services in a chilled, intact state and accompanied by a valid chain of custody document.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

George Hampton
Laboratory Director

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Sampled: **11/08/93**
Date Received: **11/09/93**
Date Extracted: **11/15/93**
Date Analyzed: **11/15/93**
Date Reported: **11/17/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792868**
COC Log No.: **0532**
CLS ID No.: **M2868**
Batch No.: **12530**
Matrix: **SOIL**

SURROGATE RECOVERY

Sample I.D. Client	CLS	o-Chlorotoluene CAS No. 95-49-8 (percent)
CN-4E	1A	108
CN-5N	2A	112
CN-P1	3A	128
Surr Conc. (ug/kg)		100

ANALYTE

Sample I.D. Client	CLS	Benzene 71-43-2 (ug/kg)	Toluene 108-88-3 (ug/kg)	Ethylbenzene 100-41-4 (ug/kg)	Xylenes, total 1330-20-7 (ug/kg)
CN-4E	1A	ND	ND	ND	ND
CN-5N	2A	ND	ND	ND	ND
CN-P1	3A	ND(500)	ND(500)	7900	22000
Rep. Limit		5	5	5	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/15/93**
Date Analyzed: **11/15/93**
Date Reported: **11/17/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916) 622-9579**

CLS Contact: **George Hampton**
Job No.: **792868**
COC Log No.: **0532**
CLS ID No.: **M2868**
Batch No.: **12530**
Matrix: **SOIL**

MB SURROGATE

Analyte	CAS No.	Surr Conc. (ug/kg)	MB Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	111

METHOD BLANK

Analyte	CAS No.	Results (ug/kg)	Rep. Limit (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-3	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, total	1330-20-7	ND	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015
Purge and Trap, EPA Method 5030

Client: Wheeldon & Associates
621 Placerville Drive
Placerville, CA 95667

Project: Capital Nursery

Date Sampled: 11/08/93
Date Received: 11/09/93
Date Extracted: 11/15/93
Date Analyzed: 11/15/93
Date Reported: 11/17/93

Project No.: 93-77
Contact: Michael Vander Dussen
Phone: (916)622-9579

CLS Contact: George Hampton
Job No.: 792868
COC Log No.: 0532
CLS ID No.: M2868
Batch No.: 12530
Matrix: SOIL

Sample I.D. Client	CLS	ANALYTE: TPH as Gasoline (mg/kg)
CN-4E	1A	ND
CN-5N	2A	ND
CN-P1	3A	460
Rep. Limit		1.0

ND = Not detected at or above indicated Reporting Limit.
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/15/93**
Date Analyzed: **11/15/93**
Date Reported: **11/17/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792868**
COC Log No.: **0532**
CLS ID No.: **M2868**
Batch No.: **12530**
Matrix: **SOIL**

METHOD BLANK

Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)
TPH as Gasoline	N/A	ND	1.0

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/15/93**
Date Analyzed: **11/15/93**
Date Reported: **11/17/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916) 622-9579**

CLS Contact: **George Hampton**
Job No.: **792868**
COC Log No.: **0532**
CLS ID No.: **M2868**
Batch No.: **12530**
Matrix: **SOIL**

MATRIX SPIKE

Analyte	CAS No.	MS Conc. (mg/kg)	MS Recovery (percent)
Gasoline	N/A	2.5	93

MATRIX SPIKE DUPLICATE

Analyte	CAS No.	MSD Conc. (mg/kg)	MSD Recovery (percent)
Gasoline	N/A	2.5	103

RELATIVE % DIFFERENCE

Analyte	CAS No.	Relative Percent Difference (percent)
Gasoline	N/A	10

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/15/93**
Date Analyzed: **11/15/93**
Date Reported: **11/17/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792868**
COC Log No.: **0532**
CLS ID No.: **M2868**
Batch No.: **12530**
Matrix: **SOIL**

LAB CONTROL SAMPLE

Analyte	CAS No.	LCS Conc. (mg/kg)	LCS Recovery (percent)
Gasoline	N/A	2.5	9[illegible]

CALIFORNIA LABORATORY SERVICES M2890 **CHAIN OF CUSTODY** LOG NO. 0533

CLIENT NAME: WHEELDON & ASSOCIATES
ADDRESS: 621 PLACERVILLE DR.
PLACERVILLE, CA 95667
PROJECT NAME: CAPITAL NURSERY
PROJECT MANAGER: MICHAEL VANDERDUSSEN PHONE # 622-9579
SAMPLED BY: " "
JOB DESCRIPTION: SOIL SAMPLING
SITE LOCATION: FREEPORT BLVD.

CLIENT JOB NUMBER: 93-77

DESTINATION LABORATORY:
☒ CLS
3249 FITZGERALD RD.
RANCHO CORDOVA, CA
95742
☐ OTHER

FIELD CONDITIONS: CLOUDY/SPRINKLES
COMPOSITE:
SPECIAL INSTRUCTIONS:

DATE	TIME	SAMPLE IDENTIFICATION	METHOD	MATRIX	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	ANALYSIS REQUESTED: TPH-GAS & BTXE (M8015/8020)	TURN AROUND TIME: 24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
11/10/93	15100	CN-P2	HAND AUGER	SOIL	1	BRASS TUBE	3					X	
"	15107	CN-P3	"	"	1	"	"					X	
"	15145	CN-P4	"	"	1	"	"					X	

SUSPECTED CONSTITUENTS

SAMPLE RETENTION TIME

PRESERVATIVES: (1) HCL (2) HNO_3 (3) = COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	REC'D BY (SIGN)	PRINT NAME / COMPANY
Michael VanderDussen	MICHAEL VANDERDUSSEN / WHEELDON & ASSOCIATES	11/11/93	Dale M. Clark	Dale M. Clark / CLS
Dale M. Clark	Dale M. Clark / CLS	11/11/93 0529		

REC'D AT LAB BY: Clay Lindgren DATE / TIME: 11-11-93 1530

CONDITIONS / COMMENTS:

SHIPPED VIA ☐ FED X ☐ UPS ☐ OTHER _____ AIR BILL #

LAB

California Laboratory Services

Wheeldon & Associates
621 Placerville Drive
Placerville, CA 95667

11/19/93

Attention: Michael Vander Dussen

Reference: Analytical Results

Project Name: Capital Nursery
Project No.: 93-77
Date Received: 11/11/93
Chain Of Custody: 0533

CLS ID No.: M2890
CLS Job No.: 792890

The following analyses were performed on the above referenced project:

No. of Samples	*Turnaround Time*	*Analysis Description*
3	10 Days	TPH Gasoline and BTXE (soil)

These samples were received by California Laboratory Services in a chilled, intact state and accompanied by a valid chain of custody document.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

George Hampton
Laboratory Director

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Sampled: **11/10/93**
Date Received: **11/11/93**
Date Extracted: **11/16/93**
Date Analyzed: **11/16/93**
Date Reported: **11/18/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792890**
COC Log No.: **0533**
CLS ID No.: **M2890**
Batch No.: **12538**
Matrix: **SOIL**

SURROGATE RECOVERY

Sample I.D. Client	CLS	o-Chlorotoluene CAS No. 95-49-8 (percent)
CN-P2	1A	113
CN-P3	2A	112
CN-P4	3A	99
Surr Conc. (ug/kg)		100

ANALYTE

Sample I.D. Client	CLS	Benzene 71-43-2 (ug/kg)	Toluene 108-88-3 (ug/kg)	Ethylbenzene 100-41-4 (ug/kg)	Xylenes, total 1330-20-7 (ug/kg)
CN-P2	1A	ND	ND	ND	ND
CN-P3	2A	ND	ND	ND	ND
CN-P4	3A	ND	ND	ND	ND
Rep. Limit		5	5	5	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **BTEX, EPA Method 8020**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/16/93**
Date Analyzed: **11/16/93**
Date Reported: **11/18/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792890**
COC Log No.: **0533**
CLS ID No.: **M2890**
Batch No.: **12538**
Matrix: **SOIL**

MB SURROGATE

Analyte	CAS No.	Surr Conc. (ug/kg)	MB Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	100	115

METHOD BLANK

Analyte	CAS No.	Results (ug/kg)	Rep. Limit (ug/kg)
Benzene	71-43-2	ND	5
Toluene	108-88-3	ND	5
Ethylbenzene	100-41-4	ND	5
Xylenes, total	1330-20-7	ND	10

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Sampled: **11/10/93**
Date Received: **11/11/93**
Date Extracted: **11/16/93**
Date Analyzed: **11/16/93**
Date Reported: **11/18/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792890**
COC Log No.: **0533**
CLS ID No.: **M2890**
Batch No.: **12538**
Matrix: **SOIL**

ANALYTE

Sample I.D. Client	CLS	TPH as Gasoline (mg/kg)
CN-P2	1A	ND
CN-P3	2A	ND
CN-P4	3A	ND
Rep. Limit		1.0

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/16/93**
Date Analyzed: **11/16/93**
Date Reported: **11/18/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792890**
COC Log No.: **0533**
CLS ID No.: **M2890**
Batch No.: **12538**
Matrix: **SOIL**

METHOD BLANK

Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)
TPH as Gasoline	N/A	ND	1.0

ND = Not detected at or above indicated Reporting Limit
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

California Laboratory Services

Analysis Report: **Total Petroleum Hydrocarbons, EPA Method 8015**
Purge and Trap, EPA Method 5030

Client: **Wheeldon & Associates**
621 Placerville Drive
Placerville, CA 95667

Project: **Capital Nursery**

Date Extracted: **11/16/93**
Date Analyzed: **11/16/93**
Date Reported: **11/18/93**

Project No.: **93-77**
Contact: **Michael Vander Dussen**
Phone: **(916)622-9579**

CLS Contact: **George Hampton**
Job No.: **792890**
COC Log No.: **0533**
CLS ID No.: **M2890**
Batch No.: **12538**
Matrix: **SOIL**

MATRIX SPIKE

Analyte	CAS No.	MS Conc. (mg/kg)	MS Recovery (percent)
Gasoline	N/A	2.5	88

MATRIX SPIKE DUPLICATE

Analyte	CAS No.	MSD Conc. (mg/kg)	MSD Recovery (percent)
Gasoline	N/A	2.5	90

RELATIVE % DIFFERENCE

Analyte	CAS No.	Relative Percent Difference (percent)
Gasoline	N/A	2

ARMSTRONG BROS.
CAPITAL NURSERY CO.

MAIN OFFICE
4700 Freeport Blvd.
P.O. Box 22630
Sacramento, CA 95822
(916) 455-2601

☐ **ELK GROVE BRANCH**
8423 Elk Grove Blvd.
Elk Grove, CA 95758
(916) 684-2100

☐ **SUNRISE BRANCH**
5410 Sunrise at Madison
Citrus Heights, CA 95610
(916) 961-9100

PURCHASE ORDER
No. 76030
NUMBER OF CONTINUATION SHEETS USED _____

To FORWARD INCORPORATED

Address

City

DATE	DATE REQUIRED	HOW SHIP	F.O.B.	TERMS
3-31-94	Today			

QUANTITY	SIZE	UNIT		DESCRIPTION	UNIT PRICE	AMOUNT	RETAIL PRICE
			1	DISPOSE of SOIL FROM			
			2	UNDERGROUND GAS TANK			
			3	REMOVAL - DUMP SITE			
			4	COST ONLY			
108		CU. YD.	5	SOIL	20.00	2160.00	
			6				
			7				
			8				
			9	COST OF HAULING IS			
			10	IN ADDITION			
			11				
			12				
			13				
			14				
			15				
			16				
			17				
			18				
					TOTAL PUR. ORDER		

REFERENCE: Bank of America, 8th and Eye Sts.
Dun & Bradstreet, Sacramento, Calif.

Our Order Number must appear on all invoices. Send invoices and Bills of Lading promptly.

Please acknowledge this order unless shipment is made immediately.

Do Not Back Order. Notify us at once if any item cannot be furnished as specified.

Only prime quality nursery stock will be accepted.

CAPITAL NURSERY CO.

BY

FORWARD INC.

FORWARD INCORPORATED

PAGE 1 ~~005/001~~

P.O. BOX 6336
STOCKTON, CA 95206

(209) 466-4482
FAX (209) 465-0631

2160.00

INVOICE: ST-940

STATEMENT

ACCOUNT NUMBER
567

$ _____
AMOUNT PAID

CAPITAL NURSERY
4700 FREEPORT BLVD.
SACRAMENTO, CA
95822

REMITTANCE MADE AFTER 3/31/94
WILL APPEAR ON NEXT MONTH'S STATEMENT

Please ▶ **RETURN THIS TOP SECTION WITH YOUR REMITTANCE.**

FORWARD INC.

FORWARD INCORPORATED

DETACH ▲ AND KEEP LOWER SECTION

~~567 3/31/94~~

P.O. BOX 6336
STOCKTON, CA 95206

(209) 466-4482
FAX (209) 465-0631

REFERENCE NUMBER	TRANSACTION DATE	TRANSACTION TYPE	DESCRIPTION	DAYS OUT-STANDING	AMOUNT	BALANCE
INVOICE: ST-9403			BALANCE FORWARD---->			$.00
73805	3/31/94	INV	DISPOSAL SOIL		360.00	360.00
73807	3/31/94	INV	DISPOSAL SOIL		360.00	720.00
73809	3/31/94	INV	DISPOSAL SOIL		360.00	1080.00
73810	3/31/94	INV	DISPOSAL SOIL		360.00	1440.00
73811	3/31/94	INV	DISPOSAL SOIL		360.00	1800.00
73812	3/31/94	INV	DISPOSAL SOIL		360.00	2160.00
			INVOICE: ST-9403 TOTAL:		2160.00	

* = Not Included in Invoice Total

P.O.# 76030

A LATE CHARGE OF 1.5 % PER MONTH, WHICH IS AN ANNUAL RATE OF 18 % WILL BE CHARGED ON PAST DUE ACCOUNTS.

PAST DUE				CURRENT	BALANCE DUE
OVER 120 DAYS	OVER 90 DAYS	OVER 60 DAYS	OVER 30 DAYS	2,160.00	$2,160.00 PLEASE PAY THIS AMOUNT

FORWARD INC.

FORWARD INCORPORATED

PAGE 1 005/001

P.O. BOX 6336
STOCKTON, CA 95206

(209) 466-4482
FAX (209) 465-0631

720.00

INVOICE: ST-940

STATEMENT

ACCOUNT NUMBER
567

$ _____
AMOUNT PAID

CAPITAL NURSERY
4700 FREEPORT BLVD.
SACRAMENTO, CA
95822

REMITTANCE MADE AFTER 4/30/94
WILL APPEAR ON NEXT MONTH'S STATEMENT

Please ▶ **RETURN THIS TOP SECTION WITH YOUR REMITTANCE.**

FORWARD INC.

FORWARD INCORPORATED

DETACH ▲ AND KEEP LOWER SECTION

567 4/30/94

P.O. BOX 6336
STOCKTON, CA 95206

(209) 466-4482
FAX (209) 465-0631

REFERENCE NUMBER	TRANSACTION DATE	TRANSACTION TYPE	DESCRIPTION	DAYS OUT-STANDING	AMOUNT	BALANCE
INVOICE: ST-9404			BALANCE FORWARD---->			$2,160.00
73933	4/01/94	INV	DISPOSAL SOIL		360.00	2520.00
73936	4/01/94	INV	DISPOSAL SOIL		360.00	2880.00
ST-9403	4/28/94	* PMT	DISPOSAL SOIL		2160.00-	720.00
			INVOICE: ST-9404 TOTAL:		720.00	
		*	= Not Incluced in Invoice Total			

A LATE CHARGE OF 1.5 % PER MONTH, WHICH IS AN ANNUAL RATE
OF 18 % WILL BE CHARGED ON PAST DUE ACCOUNTS

PAST DUE				CURRENT	BALANCE DUE
OVER 120 DAYS	OVER 90 DAYS	OVER 60 DAYS	OVER 30 DAYS	720.00	$720.00
					PLEASE PAY THIS AMOUNT

APPENDIX B

PROJECT NO. **S9695-06-02** PROJECT NAME

BORING NO. B15

DATE DRILLED 5/25/2012 WATER LEVEL (ATD) 4.0'

EQUIPMENT DIRECT-PUSH DRILLER GEOCON

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	SOIL (USCS)	HEADSPACE (PPM)
1				**2 INCHES GRAVEL**	SP	
				FILL Loose, moist, medium to dark yellowish brown (10YR 4/2), Gravelly SAND		
2					SP	
3				Medium dense, moist, dark yellowish brown (10YR 4/2), Silty coarse SAND		
4		B15-3.5 1140		▼ - wet		0.0
5						
6						
7						
8		B15-8.0 1150				0.0
9				**ALLUVIUM** Hard, moist, dark yellowish brown (10YR 4/2), CLAY	CL	
10				REFUSAL ON HARDPAN, BORING TERMINATED AT 10.5 FEET		

ENV_NO_WELL S9695-06-02 RALEYS BORINGS.GPJ 06/05/12

BORING ELEVATION:

ENGINEER/GEOLOGIST: **GEMMA REBLANDO**

GEOCON

PROJECT NO. **S9695-06-02** PROJECT NAME

BORING NO. B16

DATE DRILLED 5/25/2012 WATER LEVEL (ATD) _____

EQUIPMENT DIRECT-PUSH DRILLER GEOCON

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	SOIL (USCS)	HEADSPACE (PPM)
1				**FILL** Loose, dry to moist, dark yellowish brown (10YR 4/2), Gravelly SAND	SP	
2						
3						
4				Dense, moist, dark yellowish brown (10YR 4/2), Gravelly SAND (SP)	SP	
5						
6				- small amount of brick fragments and burnt wood		0.0
7		B16-7.5 1210				
8				Dense, moist, dark yellowish brown (10YR 4/2), Gravelly SAND with minor pebbles 1 inch in diameter, few pieces of brick fragments and burnt wood chips	SP	0.7
9						
10						
11						
12		B16-11.5 1215		- Gray (5Y 4/1), petroleum hydrocarbon odor		3.7
13		B16-13.0 1220		- Gray (5Y 4/1), gravelly sand, with petroleum hydrocarbon odor		5.9
14						
15		B16-15.0 1225		- minor staining (dark greenish gray [5GY 4/1]), with slight petroleum hydrocarbon odor		0.1
16		B16-15.5 1228				0.3
17						
18				REFUSAL ON HARD CLAY - BORING TERMINATED AT 18 FEET		

ENV_NO_WELL S9695-06-02 RALEYS BORINGS.GPJ 06/05/12

BORING ELEVATION:

ENGINEER/GEOLOGIST: **GEMMA REBLANDO**

GEOCON

APPENDIX C

ADVANCED TECHNOLOGY LABORATORIES

May 25, 2012

ACCREDITED IN ACCORDANCE WITH nelac

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Jim Brake
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

Re: ATL Work Order Number : 1201905
Client Reference : RALEYS CAPITOL NURSERY, S9695-06-02

Enclosed are the results for sample(s) received on May 22, 2012 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1201905-01	Soil	5/21/12 10:10	5/22/12 8:27
B1-2	1201905-02	Soil	5/21/12 10:20	5/22/12 8:27
B2-0	1201905-03	Soil	5/21/12 9:58	5/22/12 8:27
B2-2	1201905-04	Soil	5/21/12 10:02	5/22/12 8:27
B3-0	1201905-05	Soil	5/21/12 12:40	5/22/12 8:27
B3-2	1201905-06	Soil	5/21/12 12:45	5/22/12 8:27
B4-0	1201905-07	Soil	5/21/12 13:00	5/22/12 8:27
B4-2	1201905-08	Soil	5/21/12 13:05	5/22/12 8:27
B5-0	1201905-09	Soil	5/21/12 10:28	5/22/12 8:27
B5-2	1201905-10	Soil	5/21/12 10:32	5/22/12 8:27
B6-0	1201905-11	Soil	5/21/12 10:40	5/22/12 8:27
B6-2	1201905-12	Soil	5/21/12 10:50	5/22/12 8:27
B7-0	1201905-13	Soil	5/21/12 10:55	5/22/12 8:27
B7-2	1201905-14	Soil	5/21/12 11:00	5/22/12 8:27
B8-0	1201905-15	Soil	5/21/12 9:25	5/22/12 8:27
B8-2	1201905-16	Soil	5/21/12 9:30	5/22/12 8:27
B9-0	1201905-18	Soil	5/21/12 9:00	5/22/12 8:27
B9-2	1201905-19	Soil	5/21/12 9:10	5/22/12 8:27
B10-0	1201905-20	Soil	5/21/12 13:10	5/22/12 8:27
B10-2	1201905-21	Soil	5/21/12 13:15	5/22/12 8:27
B11-0	1201905-22	Soil	5/21/12 11:55	5/22/12 8:27
B11-2	1201905-23	Soil	5/21/12 12:00	5/22/12 8:27
B12-0	1201905-24	Soil	5/21/12 12:05	5/22/12 8:27
B12-2	1201905-25	Soil	5/21/12 12:10	5/22/12 8:27
B13-0	1201905-26	Soil	5/21/12 11:40	5/22/12 8:27
B13-2	1201905-27	Soil	5/21/12 11:45	5/22/12 8:27
B14-0	1201905-28	Soil	5/21/12 13:20	5/22/12 8:27
B14-2	1201905-29	Soil	5/21/12 13:25	5/22/12 8:27

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B1-0

Lab ID: 1201905-01

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Chlordane [2C]	**9.0**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 12:36	
Surrogate: Decachlorobiphenyl	*54.4 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 12:36*	
Surrogate: Tetrachloro-m-xylene	*61.0 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 12:36*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B1-2

Lab ID: 1201905-02

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 12:48	
Surrogate: Decachlorobiphenyl	*73.9 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 12:48*	
Surrogate: Tetrachloro-m-xylene	*82.5 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 12:48*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B2-0

Lab ID: 1201905-03

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
Surrogate: 4-Bromofluorobenzene	*91.8 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 17:18*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**440**	80	NA	20	B2E0753	05/24/2012	05/25/12 07:47	
Surrogate: p-Terphenyl	*0%*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 07:47*	S4

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 17:18	
Surrogate: 4-Bromofluorobenzene	*97.4 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 17:18*	

Organochlorine Pesticides by EPA 8081 — **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
4,4'-DDE	**17**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
alpha-Chlordane [2C]	**7.0**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Chlordane [2C]	**73**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B2-0

Lab ID: 1201905-03

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
gamma-Chlordane	**9.5**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:00	
Surrogate: Decachlorobiphenyl	*39.6 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 13:00*	
Surrogate: Tetrachloro-m-xylene	*49.5 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 13:00*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B2-2

Lab ID: 1201905-04

Gasoline Range Organics by EPA 8015B

Analyst: TP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
Surrogate: 4-Bromofluorobenzene	*69.0 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 15:13*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**6.2**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 06:08	
Surrogate: p-Terphenyl	*84.9 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 06:08*	

BTEX/MTBE by EPA 8021

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:13	
Surrogate: 4-Bromofluorobenzene	*73.4 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 15:13*	

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B2-2

Lab ID: 1201905-04

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:11	
Surrogate: Decachlorobiphenyl	*67.9 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 13:11*	
Surrogate: Tetrachloro-m-xylene	*87.8 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 13:11*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B3-0

Lab ID: 1201905-05

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	**2.7**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
alpha-Chlordane	**11**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Chlordane [2C]	**130**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
gamma-Chlordane	**12**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Heptachlor epoxide [2C]	**2.8**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:23	
Surrogate: Decachlorobiphenyl	*52.8 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 13:23*	
Surrogate: Tetrachloro-m-xylene	*67.9 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 13:23*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B3-2

Lab ID: 1201905-06

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:35	
Surrogate: Decachlorobiphenyl	*78.0 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 13:35*	
Surrogate: Tetrachloro-m-xylene	*97.5 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 13:35*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B4-0

Lab ID: 1201905-07

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Chlordane [2C]	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:47	
Surrogate: Decachlorobiphenyl	*79.8 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 13:47*	
Surrogate: Tetrachloro-m-xylene	*96.1 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 13:47*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B4-2

Lab ID: 1201905-08

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 13:58	
Surrogate: Decachlorobiphenyl	*85.1 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 13:58*	
Surrogate: Tetrachloro-m-xylene	*107 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 13:58*	S1

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B5-0

Lab ID: 1201905-09

Gasoline Range Organics by EPA 8015B

Analyst: TP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
Surrogate: 4-Bromofluorobenzene	*112 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 14:58*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**29**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 06:57	
Surrogate: p-Terphenyl	*95.8 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 06:57*	

BTEX/MTBE by EPA 8021

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:58	
Surrogate: 4-Bromofluorobenzene	*118 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 14:58*	

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Chlordane [2C]	**9.7**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B5-0

Lab ID: 1201905-09

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 14:10	
Surrogate: Decachlorobiphenyl	*59.1 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 14:10*	
Surrogate: Tetrachloro-m-xylene	*72.1 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 14:10*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B5-2

Lab ID: 1201905-10

Gasoline Range Organics by EPA 8015B

Analyst: TP

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
Surrogate: 4-Bromofluorobenzene	*101 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 14:42*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.2**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 06:24	
Surrogate: p-Terphenyl	*89.2 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 06:24*	

BTEX/MTBE by EPA 8021

Analyst: TP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:42	
Surrogate: 4-Bromofluorobenzene	*107 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 14:42*	

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B5-2

Lab ID: 1201905-10

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 14:22	
Surrogate: Decachlorobiphenyl	*68.4 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 14:22*	
Surrogate: Tetrachloro-m-xylene	*89.2 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 14:22*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B6-0

Lab ID: 1201905-11

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
Surrogate: 4-Bromofluorobenzene	*112 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 14:26*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**260**	20	NA	10	B2E0753	05/24/2012	05/25/12 07:30	
Surrogate: p-Terphenyl	*59.5 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 07:30*	

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:26	
Surrogate: 4-Bromofluorobenzene	*118 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 14:26*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B6-2

Lab ID: 1201905-12

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
Surrogate: 4-Bromofluorobenzene	*104 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 14:11*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**19**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 05:18	
Surrogate: p-Terphenyl	*81.3 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 05:18*	

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 14:11	
Surrogate: 4-Bromofluorobenzene	*110 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 14:11*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B7-0

Lab ID: 1201905-13

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
Surrogate: 4-Bromofluorobenzene	*104 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 16:16*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.3**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 06:41	
Surrogate: p-Terphenyl	*92.5 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 06:41*	

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:16	
Surrogate: 4-Bromofluorobenzene	*110 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 16:16*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B7-2

Lab ID: 1201905-14

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
Surrogate: 4-Bromofluorobenzene	*110 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 13:40*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**32**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 05:35	
Surrogate: p-Terphenyl	*97.7 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 05:35*	

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 13:40	
Surrogate: 4-Bromofluorobenzene	*115 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 13:40*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B8-0

Lab ID: 1201905-15

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
4,4'-DDE	**10**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
4,4'-DDT	**2.8**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
alpha-Chlordane [2C]	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Chlordane [2C]	**11**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Endrin ketone [2C]	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 14:34	
Surrogate: Decachlorobiphenyl	*83.0 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 14:34*	
Surrogate: Tetrachloro-m-xylene	*99.0 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 14:34*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B8-2

Lab ID: 1201905-16

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 14:45	
Surrogate: Decachlorobiphenyl	*92.3 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 14:45*	
Surrogate: Tetrachloro-m-xylene	*98.0 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 14:45*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B9-0

Lab ID: 1201905-18

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
4,4'-DDT	**5.4**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
alpha-Chlordane [2C]	**2.9**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Chlordane	**33**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Dieldrin	**3.3**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
gamma-Chlordane	**3.2**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 14:57	
Surrogate: Decachlorobiphenyl	*60.5 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 14:57*	
Surrogate: Tetrachloro-m-xylene	*72.9 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 14:57*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B9-2

Lab ID: 1201905-19

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 15:09	
Surrogate: Decachlorobiphenyl	*86.5 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 15:09*	
Surrogate: Tetrachloro-m-xylene	*92.2 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 15:09*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B10-0

Lab ID: 1201905-20

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 15:21	
Surrogate: Decachlorobiphenyl	*87.9 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 15:21*	
Surrogate: Tetrachloro-m-xylene	*92.5 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 15:21*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B10-2

Lab ID: 1201905-21

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 15:32	
Surrogate: Decachlorobiphenyl	*91.9 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 15:32*	
Surrogate: Tetrachloro-m-xylene	*100 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 15:32*	S1

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B11-0

Lab ID: 1201905-22

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
4,4'-DDT [2C]	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
alpha-Chlordane [2C]	**4.0**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Chlordane	**49**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
gamma-Chlordane	**5.0**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 15:44	
Surrogate: Decachlorobiphenyl	*62.5 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 15:44*	
Surrogate: Tetrachloro-m-xylene	*72.9 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 15:44*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B11-2

Lab ID: 1201905-23

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 15:56	
Surrogate: Decachlorobiphenyl	*88.4 %*		*39 - 104*		B2E0747	05/23/2012	*05/24/12 15:56*	
Surrogate: Tetrachloro-m-xylene	*85.1 %*		*43 - 100*		B2E0747	05/23/2012	*05/24/12 15:56*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-0

Lab ID: 1201905-24

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: KK**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Arsenic	**5.0**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Barium	**110**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Beryllium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Cadmium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Chromium	**35**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Cobalt	**12**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Copper	**25**	2.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Lead	**15**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Molybdenum	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Nickel	**37**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Selenium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Silver	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Thallium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Vanadium	**39**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	
Zinc	**470**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:52	

Mercury by AA (Cold Vapor) EPA 7471 — **Analyst: CB**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2E0790	05/25/2012	05/25/12 13:11	

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
Surrogate: 4-Bromofluorobenzene	*109 %*		*69 - 158*		B2E0707	05/23/2012	*05/23/12 16:00*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**10**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 07:13	
Surrogate: p-Terphenyl	*95.5 %*		*39 - 123*		B2E0753	05/24/2012	*05/25/12 07:13*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-0

Lab ID: 1201905-24

BTEX/MTBE by EPA 8021 — **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 16:00	
Surrogate: 4-Bromofluorobenzene	*116 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 16:00*	

Organochlorine Pesticides by EPA 8081 — **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
4,4'-DDE	**4.1**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
4,4'-DDT	**3.0**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
alpha-Chlordane [2C]	**3.7**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Chlordane [2C]	**41**	8.5	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Dieldrin	**5.2**	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
gamma-Chlordane	**3.6**	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Heptachlor epoxide [2C]	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 16:08	
Surrogate: Decachlorobiphenyl	*63.8 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 16:08*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-0

Lab ID: 1201905-24

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Tetrachloro-m-xylene	*75.0 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 16:08*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-2

Lab ID: 1201905-25

Title 22 Metals by ICP-AES EPA 6010B — **Analyst: KK**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Arsenic	**2.5**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Barium	**81**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Beryllium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Cadmium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Chromium	**36**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Cobalt	**11**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Copper	**20**	2.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Lead	**5.5**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Molybdenum	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Nickel	**29**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Selenium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Silver	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Thallium	ND	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Vanadium	**41**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	
Zinc	**29**	1.0	NA	1	B2E0728	05/23/2012	05/24/12 14:54	

Mercury by AA (Cold Vapor) EPA 7471 — **Analyst: CB**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	NA	1	B2E0790	05/25/2012	05/25/12 13:13	

Gasoline Range Organics by EPA 8015B — **Analyst: TP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
Surrogate: 4-Bromofluorobenzene	*102 %*	*69 - 158*			B2E0707	05/23/2012	*05/23/12 15:45*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**2.9**	1.0	NA	1	B2E0753	05/24/2012	05/25/12 05:51	
Surrogate: p-Terphenyl	*82.4 %*	*39 - 123*			B2E0753	05/24/2012	*05/25/12 05:51*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-2

Lab ID: 1201905-25

BTEX/MTBE by EPA 8021 **Analyst: TP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
MTBE	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
Benzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
Toluene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
Ethylbenzene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
m,p-Xylene	ND	10	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
o-Xylene	ND	5.0	NA	1	B2E0707	05/23/2012	05/23/12 15:45	
Surrogate: 4-Bromofluorobenzene	*108 %*	*65 - 140*			B2E0707	05/23/2012	*05/23/12 15:45*	

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
4,4'-DDE	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
4,4'-DDT	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Aldrin	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
alpha-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
alpha-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
beta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Chlordane	ND	8.5	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
delta-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Dieldrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endosulfan I	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endosulfan II	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endosulfan sulfate	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endrin	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endrin aldehyde	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Endrin ketone	ND	2.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
gamma-BHC	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
gamma-Chlordane	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Heptachlor	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Heptachlor epoxide	ND	1.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Methoxychlor	ND	5.0	NA	1	B2E0747	05/23/2012	05/24/12 16:19	
Toxaphene	ND	50	NA	1	B2E0747	05/23/2012	05/24/12 16:19	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B12-2

Lab ID: 1201905-25

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Decachlorobiphenyl	*90.8 %*	*39 - 104*			B2E0747	05/23/2012	*05/24/12 16:19*	
Surrogate: Tetrachloro-m-xylene	*103 %*	*43 - 100*			B2E0747	05/23/2012	*05/24/12 16:19*	S1

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B13-0

Lab ID: 1201905-26

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
4,4'-DDE	**12**	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
4,4'-DDT	**11**	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Aldrin	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
alpha-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
alpha-Chlordane	**5.9**	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
beta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Chlordane	**50**	8.5	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
delta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Dieldrin [2C]	**5.6**	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endosulfan I	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endosulfan II	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endosulfan sulfate	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endrin aldehyde	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Endrin ketone	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
gamma-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
gamma-Chlordane [2C]	**5.2**	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Heptachlor	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Heptachlor epoxide	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Methoxychlor	ND	5.0	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Toxaphene	ND	50	NA	1	B2E0748	05/23/2012	05/24/12 13:09	
Surrogate: Decachlorobiphenyl	*70.1 %*	*39 - 104*			B2E0748	05/23/2012	*05/24/12 13:09*	
Surrogate: Tetrachloro-m-xylene	*58.8 %*	*43 - 100*			B2E0748	05/23/2012	*05/24/12 13:09*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B13-2

Lab ID: 1201905-27

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
4,4'-DDE	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
4,4'-DDT	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Aldrin	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
alpha-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
alpha-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
beta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Chlordane	ND	8.5	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
delta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Dieldrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endosulfan I	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endosulfan II	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endosulfan sulfate	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endrin aldehyde	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Endrin ketone	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
gamma-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
gamma-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Heptachlor	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Heptachlor epoxide	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Methoxychlor	ND	5.0	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Toxaphene	ND	50	NA	1	B2E0748	05/23/2012	05/24/12 13:22	
Surrogate: Decachlorobiphenyl	*99.0 %*	*39 - 104*			B2E0748	05/23/2012	*05/24/12 13:22*	
Surrogate: Tetrachloro-m-xylene	*77.2 %*	*43 - 100*			B2E0748	05/23/2012	*05/24/12 13:22*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B14-0

Lab ID: 1201905-28

Organochlorine Pesticides by EPA 8081

Analyst: PIL

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
4,4'-DDE	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
4,4'-DDT	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Aldrin	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
alpha-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
alpha-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
beta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Chlordane	ND	8.5	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
delta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Dieldrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endosulfan I	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endosulfan II	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endosulfan sulfate	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endrin aldehyde	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Endrin ketone	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
gamma-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
gamma-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Heptachlor	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Heptachlor epoxide	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Methoxychlor	ND	5.0	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Toxaphene	ND	50	NA	1	B2E0748	05/23/2012	05/24/12 13:35	
Surrogate: Decachlorobiphenyl	*95.4 %*		*39 - 104*		B2E0748	05/23/2012	*05/24/12 13:35*	
Surrogate: Tetrachloro-m-xylene	*88.6 %*		*43 - 100*		B2E0748	05/23/2012	*05/24/12 13:35*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Client Sample ID B14-2

Lab ID: 1201905-29

Organochlorine Pesticides by EPA 8081 **Analyst: PIL**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
4,4'-DDE	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
4,4'-DDT	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Aldrin	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
alpha-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
alpha-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
beta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Chlordane	ND	8.5	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
delta-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Dieldrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endosulfan I	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endosulfan II	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endosulfan sulfate	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endrin	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endrin aldehyde	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Endrin ketone	ND	2.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
gamma-BHC	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
gamma-Chlordane	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Heptachlor	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Heptachlor epoxide	ND	1.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Methoxychlor	ND	5.0	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Toxaphene	ND	50	NA	1	B2E0748	05/23/2012	05/24/12 12:55	
Surrogate: Decachlorobiphenyl	*95.5 %*		*39 - 104*		B2E0748	05/23/2012	*05/24/12 12:55*	
Surrogate: Tetrachloro-m-xylene	*91.6 %*		*43 - 100*		B2E0748	05/23/2012	*05/24/12 12:55*	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0728 - EPA 3050B									
Blank (B2E0728-BLK1)				Prepared: 5/23/2012 Analyzed: 5/24/2012					
Antimony	ND	2.0			NR				
Arsenic	ND	1.0			NR				
Barium	ND	1.0			NR				
Beryllium	ND	1.0			NR				
Cadmium	ND	1.0			NR				
Chromium	ND	1.0			NR				
Cobalt	ND	1.0			NR				
Copper	ND	2.0			NR				
Lead	ND	1.0			NR				
Molybdenum	ND	1.0			NR				
Nickel	ND	1.0			NR				
Selenium	ND	1.0			NR				
Silver	ND	1.0			NR				
Thallium	ND	1.0			NR				
Vanadium	ND	1.0			NR				
Zinc	ND	1.0			NR				
LCS (B2E0728-BS1)				Prepared: 5/23/2012 Analyzed: 5/24/2012					
Antimony	43	2.0	50.0		87.0	80 - 120			
Arsenic	42	1.0	50.0		84.8	80 - 120			
Barium	44	1.0	50.0		89.0	80 - 120			
Beryllium	45	1.0	50.0		91.0	80 - 120			
Cadmium	43	1.0	50.0		86.8	80 - 120			
Chromium	45	1.0	50.0		89.8	80 - 120			
Cobalt	44	1.0	50.0		88.2	80 - 120			
Copper	45	2.0	50.0		90.9	80 - 120			
Lead	44	1.0	50.0		88.3	80 - 120			
Molybdenum	46	1.0	50.0		91.9	80 - 120			
Nickel	44	1.0	50.0		88.9	80 - 120			
Selenium	41	1.0	50.0		82.6	80 - 120			
Silver	44	1.0	50.0		87.8	80 - 120			
Thallium	44	1.0	50.0		87.7	80 - 120			
Vanadium	46	1.0	50.0		92.4	80 - 120			
Zinc	43	1.0	50.0		86.4	80 - 120			
Matrix Spike (B2E0728-MS1)		**Source: 1201769-30**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
Antimony	70	2.0	125	ND	56.2	44 - 105			
Arsenic	96	1.0	125	4.1	73.4	57 - 103			
Barium	190	1.0	125	97	72.3	36 - 134			
Beryllium	99	1.0	125	1.1	78.6	64 - 106			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0728 - EPA 3050B (continued)									
Matrix Spike (B2E0728-MS1) - Continued		**Source: 1201769-30**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
Cadmium	90	1.0	125	0.12	71.7	58 - 102			
Chromium	110	1.0	125	17	76.4	55 - 105			
Cobalt	98	1.0	125	7.7	72.3	59 - 105			
Copper	120	2.0	125	16	83.1	64 - 117			
Lead	120	1.0	125	27	71.3	46 - 116			
Molybdenum	93	1.0	125	ND	74.6	59 - 108			
Nickel	100	1.0	125	12	72.1	52 - 109			
Selenium	88	1.0	125	ND	70.1	56 - 100			
Silver	100	1.0	125	0.49	81.0	65 - 107			
Thallium	90	1.0	125	ND	71.7	47 - 100			
Vanadium	130	1.0	125	35	78.0	64 - 110			
Zinc	140	1.0	125	51	67.3	37 - 123			
Matrix Spike Dup (B2E0728-MSD1)		**Source: 1201769-30**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
Antimony	70	2.0	125	ND	56.3	44 - 105	0.164	20	
Arsenic	96	1.0	125	4.1	73.6	57 - 103	0.265	20	
Barium	190	1.0	125	97	76.9	36 - 134	3.02	20	
Beryllium	100	1.0	125	1.1	78.7	64 - 106	0.175	20	
Cadmium	90	1.0	125	0.12	72.1	58 - 102	0.549	20	
Chromium	110	1.0	125	17	76.7	55 - 105	0.329	20	
Cobalt	99	1.0	125	7.7	73.1	59 - 105	1.08	20	
Copper	120	2.0	125	16	83.4	64 - 117	0.308	20	
Lead	120	1.0	125	27	71.6	46 - 116	0.312	20	
Molybdenum	93	1.0	125	ND	74.6	59 - 108	0.0716	20	
Nickel	100	1.0	125	12	72.9	52 - 109	1.03	20	
Selenium	87	1.0	125	ND	70.0	56 - 100	0.175	20	
Silver	100	1.0	125	0.49	81.1	65 - 107	0.0721	20	
Thallium	89	1.0	125	ND	71.6	47 - 100	0.226	20	
Vanadium	130	1.0	125	35	79.6	64 - 110	1.53	20	
Zinc	140	1.0	125	51	68.6	37 - 123	1.20	20	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Mercury by AA (Cold Vapor) EPA 7471 - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0790 - EPA 7471									
Blank (B2E0790-BLK1)				Prepared: 5/25/2012 Analyzed: 5/25/2012					
Mercury	ND	0.10			NR				
LCS (B2E0790-BS1)				Prepared: 5/25/2012 Analyzed: 5/25/2012					
Mercury	0.70	0.10	0.833		83.5	80 - 120			
Matrix Spike (B2E0790-MS1)		**Source: 1201905-25**		Prepared: 5/25/2012 Analyzed: 5/25/2012					
Mercury	0.74	0.10	0.833	0.01	87.9	70 - 130			
Matrix Spike (B2E0790-MS2)		**Source: 1201905-25**		Prepared: 5/25/2012 Analyzed: 5/25/2012					
Mercury	0.44	0.10	0.417	0.01	103	70 - 130			
Matrix Spike Dup (B2E0790-MSD1)		**Source: 1201905-25**		Prepared: 5/25/2012 Analyzed: 5/25/2012					
Mercury	0.92	0.10	0.833	0.01	110	70 - 130	21.6	20	R

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Gasoline Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0707 - GCVOAS									
Blank (B2E0707-BLK1)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.098*		*0.100*		*98.0*	*69 - 158*			
LCS (B2E0707-BS1)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
Gasoline Range Organics	4.5	1.0	5.00		89.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*105*	*69 - 158*			
LCS Dup (B2E0707-BSD1)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
Gasoline Range Organics	5.0	1.0	5.00		100	70 - 130	11.7	20	
Surrogate: 4-Bromofluorobenzene	*0.11*		*0.100*		*112*	*69 - 158*			
Matrix Spike (B2E0707-MS1)		**Source: 1201905-25**		Prepared: 5/23/2012 Analyzed: 5/23/2012					
Gasoline Range Organics	4.6	1.0	5.00	ND	91.1	46 - 135			
Surrogate: 4-Bromofluorobenzene	*0.11*		*0.100*		*110*	*69 - 158*			
Matrix Spike Dup (B2E0707-MSD1)		**Source: 1201905-25**		Prepared: 5/23/2012 Analyzed: 5/23/2012					
Gasoline Range Organics	4.6	1.0	5.00	ND	92.5	46 - 135	1.44	20	
Surrogate: 4-Bromofluorobenzene	*0.11*		*0.100*		*114*	*69 - 158*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0753 - GCSEMI_DRO_SOIL_LL									
Blank (B2E0753-BLK1)				Prepared: 5/24/2012 Analyzed: 5/25/2012					
DRO	ND	1.0			NR				
Surrogate: p-Terphenyl	*2.1*		*2.67*		*77.2*	*39 - 123*			
LCS (B2E0753-BS1)				Prepared: 5/24/2012 Analyzed: 5/25/2012					
DRO	33	1.0	33.3		100	37 - 109			
Surrogate: p-Terphenyl	*2.5*		*2.67*		*93.2*	*39 - 123*			
Matrix Spike (B2E0753-MS1)		**Source: 1201905-10**		Prepared: 5/24/2012 Analyzed: 5/25/2012					
DRO	33	1.0	33.3	4.2	87.5	29 - 107			
Surrogate: p-Terphenyl	*2.3*		*2.67*		*84.8*	*39 - 123*			
Matrix Spike Dup (B2E0753-MSD1)		**Source: 1201905-10**		Prepared: 5/24/2012 Analyzed: 5/25/2012					
DRO	32	1.0	33.3	4.2	83.0	29 - 107	4.61	20	
Surrogate: p-Terphenyl	*2.2*		*2.67*		*83.5*	*39 - 123*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

BTEX/MTBE by EPA 8021 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0707 - GCVOAS									
Blank (B2E0707-BLK1)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
MTBE	ND	5.0			NR				
Benzene	ND	5.0			NR				
Toluene	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
o-Xylene	ND	5.0			NR				
Surrogate: 4-Bromofluorobenzene	*100*		*100*		*104*	*65 - 140*			
LCS (B2E0707-BS2)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
MTBE	110	5.0	100		112	70 - 130			
Benzene	120	5.0	100		117	70 - 130			
Toluene	120	5.0	100		122	70 - 130			
Ethylbenzene	120	5.0	100		123	70 - 130			
m,p-Xylene	250	10	200		124	70 - 130			
o-Xylene	130	5.0	100		127	70 - 130			
Surrogate: 4-Bromofluorobenzene	*110*		*100*		*112*	*65 - 140*			
LCS Dup (B2E0707-BSD2)				Prepared: 5/23/2012 Analyzed: 5/23/2012					
MTBE	120	5.0	100		117	70 - 130	3.99	20	
Benzene	120	5.0	100		118	70 - 130	0.658	20	
Toluene	120	5.0	100		123	70 - 130	1.29	20	
Ethylbenzene	120	5.0	100		124	70 - 130	1.34	20	
m,p-Xylene	250	10	200		126	70 - 130	1.29	20	
o-Xylene	130	5.0	100		129	70 - 130	1.61	20	
Surrogate: 4-Bromofluorobenzene	*110*		*100*		*114*	*65 - 140*			
Matrix Spike (B2E0707-MS1)		**Source: 1201905-25**		Prepared: 5/23/2012 Analyzed: 5/23/2012					
MTBE	410	5.0	429	ND	95.8	39 - 121			
Benzene	39	5.0	40.8	ND	95.5	69 - 264			
Toluene	190	5.0	202	ND	95.2	44 - 150			
Ethylbenzene	60	5.0	76.0	ND	78.8	37 - 161			
m,p-Xylene	210	10	206	ND	101	30 - 149			
o-Xylene	78	5.0	73.5	ND	107	31 - 166			
Matrix Spike Dup (B2E0707-MSD1)		**Source: 1201905-25**		Prepared: 5/23/2012 Analyzed: 5/23/2012					
MTBE	420	5.0	429	ND	97.1	39 - 121	1.35	20	
Benzene	40	5.0	40.8	ND	97.5	69 - 264	2.13	20	
Toluene	200	5.0	202	ND	97.4	44 - 150	2.30	20	
Ethylbenzene	61	5.0	76.0	ND	80.1	37 - 161	1.64	20	
m,p-Xylene	210	10	206	ND	103	30 - 149	1.79	20	
o-Xylene	80	5.0	73.5	ND	109	31 - 166	2.06	20	

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0707 - GCVOAS (continued)									
Matrix Spike Dup (B2E0707-MSD1) - Continued			**Source: 1201905-25**		Prepared: 5/23/2012 Analyzed: 5/23/2012				
Surrogate: 4-Bromofluorobenzene	*120*		*100*		*119*	*65 - 140*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0747 - GCSEMI_PCB/PEST									
Blank (B2E0747-BLK1)				Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDD	ND	2.0			NR				
4,4'-DDD [2C]	ND	2.0			NR				
4,4'-DDE	ND	2.0			NR				
4,4'-DDE [2C]	ND	2.0			NR				
4,4'-DDT	ND	2.0			NR				
4,4'-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				
Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0747 - GCSEMI_PCB/PEST (continued)									
Blank (B2E0747-BLK1) - Continued					Prepared: 5/23/2012 Analyzed: 5/24/2012				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
Surrogate: Decachlorobiphenyl	*13*		*16.7*		*80.6*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*12*		*16.7*		*73.8*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*13*		*16.7*		*77.0*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*12*		*16.7*		*74.7*	*43 - 100*			
LCS (B2E0747-BS1)					Prepared: 5/23/2012 Analyzed: 5/24/2012				
4,4'-DDT	14	2.0	16.7		86.6	52 - 115			
4,4'-DDT [2C]	13	2.0	16.7		75.5	52 - 115			
Aldrin	14	1.0	16.7		83.5	56 - 108			
Aldrin [2C]	13	1.0	16.7		78.7	56 - 108			
Dieldrin	14	2.0	16.7		81.4	53 - 115			
Dieldrin [2C]	13	2.0	16.7		76.1	53 - 115			
Endrin	13	2.0	16.7		76.8	55 - 125			
Endrin [2C]	12	2.0	16.7		70.3	55 - 125			
gamma-BHC	14	1.0	16.7		85.2	59 - 110			
gamma-BHC [2C]	13	1.0	16.7		80.5	59 - 110			
Heptachlor	14	1.0	16.7		85.2	53 - 114			
Heptachlor [2C]	13	1.0	16.7		79.8	53 - 114			
Surrogate: Decachlorobiphenyl	*13*		*16.7*		*79.0*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*12*		*16.7*		*72.0*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*13*		*16.7*		*75.6*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*12*		*16.7*		*72.0*	*43 - 100*			
Matrix Spike (B2E0747-MS1)		**Source: 1201905-23**			Prepared: 5/23/2012 Analyzed: 5/24/2012				
4,4'-DDT	21	2.0	16.7	ND	125	17 - 165			
4,4'-DDT [2C]	17	2.0	16.7	ND	101	17 - 165			
Aldrin	19	1.0	16.7	ND	112	34 - 130			
Aldrin [2C]	16	1.0	16.7	ND	97.3	34 - 130			
Dieldrin	19	2.0	16.7	ND	111	33 - 143			
Dieldrin [2C]	16	2.0	16.7	ND	93.8	33 - 143			
Endrin	18	2.0	16.7	ND	105	39 - 152			
Endrin [2C]	16	2.0	16.7	ND	94.0	39 - 152			
gamma-BHC	19	1.0	16.7	ND	116	37 - 131			
gamma-BHC [2C]	17	1.0	16.7	ND	101	37 - 131			
Heptachlor	20	1.0	16.7	ND	119	31 - 140			
Heptachlor [2C]	18	1.0	16.7	ND	107	31 - 140			
Surrogate: Decachlorobiphenyl	*17*		*16.7*		*101*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*14*		*16.7*		*85.6*	*39 - 104*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0747 - GCSEMI_PCB/PEST (continued)									
Matrix Spike (B2E0747-MS1) - Continued		**Source: 1201905-23**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
Surrogate: Tetrachloro-m-xylene	*17*		*16.7*		*101*	*43 - 100*			S8
Surrogate: Tetrachloro-m-xylene [2C]	*15*		*16.7*		*88.8*	*43 - 100*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0747 - GCSEMI_PCB/PEST (continued)									
Matrix Spike Dup (B2E0747-MSD1)		**Source: 1201905-23**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDT	21	2.0	16.7	ND	129	17 - 165	2.87	20	
4,4'-DDT [2C]	18	2.0	16.7	ND	106	17 - 165	4.93	20	
Aldrin	19	1.0	16.7	ND	115	34 - 130	2.60	20	
Aldrin [2C]	17	1.0	16.7	ND	102	34 - 130	4.39	20	
Dieldrin	19	2.0	16.7	ND	113	33 - 143	1.84	20	
Dieldrin [2C]	16	2.0	16.7	ND	97.8	33 - 143	4.22	20	
Endrin	18	2.0	16.7	ND	108	39 - 152	2.75	20	
Endrin [2C]	17	2.0	16.7	ND	101	39 - 152	7.48	20	
gamma-BHC	20	1.0	16.7	ND	119	37 - 131	2.62	20	
gamma-BHC [2C]	18	1.0	16.7	ND	106	37 - 131	4.61	20	
Heptachlor	20	1.0	16.7	ND	123	31 - 140	3.29	20	
Heptachlor [2C]	18	1.0	16.7	ND	109	31 - 140	2.34	20	
Surrogate: Decachlorobiphenyl	*16*		*16.7*		*96.4*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*15*		*16.7*		*88.8*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*17*		*16.7*		*103*	*43 - 100*			S8
Surrogate: Tetrachloro-m-xylene [2C]	*15*		*16.7*		*92.6*	*43 - 100*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0748 - GCSEMI_PCB/PEST									
Blank (B2E0748-BLK1)				Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDD	ND	2.0			NR				
4,4'-DDD [2C]	ND	2.0			NR				
4,4'-DDE	ND	2.0			NR				
4,4'-DDE [2C]	ND	2.0			NR				
4,4'-DDT	ND	2.0			NR				
4,4'-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				
Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0748 - GCSEMI_PCB/PEST (continued)									
Blank (B2E0748-BLK1) - Continued				Prepared: 5/23/2012 Analyzed: 5/24/2012					
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
Surrogate: Decachlorobiphenyl	*14*		*16.7*		*85.8*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*14*		*16.7*		*81.6*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*13*		*16.7*		*80.7*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*12*		*16.7*		*74.7*	*43 - 100*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0748 - GCSEMI_PCB/PEST (continued)									
LCS (B2E0748-BS1)				Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDT	16	2.0			NR	52 - 115			
4,4'-DDT [2C]	14	2.0			NR	52 - 115			
Aldrin	14	1.0			NR	56 - 108			
Aldrin [2C]	12	1.0			NR	56 - 108			
Dieldrin	14	2.0			NR	53 - 115			
Dieldrin [2C]	13	2.0			NR	53 - 115			
Endrin	13	2.0			NR	55 - 125			
Endrin [2C]	12	2.0			NR	55 - 125			
gamma-BHC	15	1.0			NR	59 - 110			
gamma-BHC [2C]	13	1.0			NR	59 - 110			
Heptachlor	15	1.0			NR	53 - 114			
Heptachlor [2C]	13	1.0			NR	53 - 114			
Surrogate: Decachlorobiphenyl	*14*		*16.7*		*84.0*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*13*		*16.7*		*80.0*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*13*		*16.7*		*78.7*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*12*		*16.7*		*73.3*	*43 - 100*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0748 - GCSEMI_PCB/PEST (continued)									
Matrix Spike (B2E0748-MS1)		**Source: 1201905-29**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDT	19	2.0		ND	NR	17 - 165			
4,4'-DDT [2C]	22	2.0		ND	NR	17 - 165			
Aldrin	18	1.0		ND	NR	34 - 130			
Aldrin [2C]	19	1.0		ND	NR	34 - 130			
Dieldrin	18	2.0		ND	NR	33 - 143			
Dieldrin [2C]	21	2.0		ND	NR	33 - 143			
Endrin	18	2.0		ND	NR	39 - 152			
Endrin [2C]	20	2.0		ND	NR	39 - 152			
gamma-BHC	19	1.0		ND	NR	37 - 131			
gamma-BHC [2C]	21	1.0		ND	NR	37 - 131			
Heptachlor	18	1.0		ND	NR	31 - 140			
Heptachlor [2C]	21	1.0		ND	NR	31 - 140			
Surrogate: Decachlorobiphenyl	*18*		*16.7*		*106*	*39 - 104*			S8
Surrogate: Decachlorobiphenyl [2C]	*20*		*16.7*		*118*	*39 - 104*			S8
Surrogate: Tetrachloro-m-xylene	*16*		*16.7*		*96.4*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*18*		*16.7*		*107*	*43 - 100*			S8

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0748 - GCSEMI_PCB/PEST (continued)									
Matrix Spike Dup (B2E0748-MSD1)		**Source: 1201905-29**		Prepared: 5/23/2012 Analyzed: 5/24/2012					
4,4'-DDT	18	2.0		ND	NR	17 - 165	4.34	20	
4,4'-DDT [2C]	19	2.0		ND	NR	17 - 165	16.4	20	
Aldrin	18	1.0		ND	NR	34 - 130	3.39	20	
Aldrin [2C]	16	1.0		ND	NR	34 - 130	14.8	20	
Dieldrin	18	2.0		ND	NR	33 - 143	3.21	20	
Dieldrin [2C]	18	2.0		ND	NR	33 - 143	14.9	20	
Endrin	17	2.0		ND	NR	39 - 152	3.03	20	
Endrin [2C]	17	2.0		ND	NR	39 - 152	13.3	20	
gamma-BHC	18	1.0		ND	NR	37 - 131	4.65	20	
gamma-BHC [2C]	18	1.0		ND	NR	37 - 131	14.8	20	
Heptachlor	17	1.0		ND	NR	31 - 140	3.74	20	
Heptachlor [2C]	18	1.0		ND	NR	31 - 140	18.0	20	
Surrogate: Decachlorobiphenyl	*17*		*16.7*		*104*	*39 - 104*			
Surrogate: Decachlorobiphenyl [2C]	*17*		*16.7*		*101*	*39 - 104*			
Surrogate: Tetrachloro-m-xylene	*16*		*16.7*		*93.7*	*43 - 100*			
Surrogate: Tetrachloro-m-xylene [2C]	*15*		*16.7*		*92.1*	*43 - 100*			

Geocon Consultants, Inc.	Project Number : RALEYS CAPITOL NURSERY, S9695-0
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/25/2012

Notes and Definitions

S8	Surrogate recovery was above laboratory acceptance limit. See CAR for details.
S4	Surrogate was diluted out.
S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☑ FedEx ☐ Other: _____

Sample Condition Upon Receipt: 4.8
1. CHILLED Y ☑ N ☐ 4. SEALED Y ☐ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐ 6. PRESERVED Y ☐ N ☐

Client: GEOCON Consultants, Inc
Attention: Jim Brake (brake@geoconinc.com)
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: RALEY'S CAPITOL NURSERY
Project #: S9695-06-02
Sampler: (Printed Name) GEMMA REBLANDO (Signature) Gemma R Reblando

Relinquished by: (Signature and Printed Name) GEMMA REBLANDO Gemma R Reblando Date: 5/21/12 Time: 1600
Received by: (Signature and Printed Name) Mong Date: 5/22/12 Time: 827
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: GEMMA REBLANDO 5/21/12
Print Name Date
Gemma R Reblando
Signature

Send Report To:
Attn:
Co: SAME AS ABOVE
Addr:
City: State: Zip:

Bill To:
Attn:
Co: SAME AS ABOVE
Addr:
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

QA/QC: RTNE ☑ CT ☐ SWRCB Logcode ☐ OTHER ☐

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample Description: Sample ID / Location	Date	Time	Circle or Add Analysis(es) Requested: 8081A (Pesticides)	8151 (Herbicides)	VOCs - 8260B (Volatiles) - full suite	8270C (BNA)	6010B (Total Metal)	8015B(M) (DRO and ORO)	8015B(M) (GRO) / 8021B (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SPECIFY APPROPRIATE MATRIX: SOIL	WATER	GROUND WATER	WASTEWATER	CARBON	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	1201905-01	B1-0	5/21/2012	1010	X	X							X					D	1	T	P	C	
	02	B1-2	5/21/2012	1020	X	X							X					D	1	T	P	C	
	03	B2-0	5/21/2012	0958	X	X	X			X	X		X					D	1	T	P	C	
	04	B2-2	5/21/2012	1002	X	X	X			X	X		X					D	1	T	P	C	
	05	B3-0	5/21/2012	1240	X	X							X					D	1	T	M	C	
	06	B3-2	5/21/2012	1245	X	X							X					D	1	T	M	C	
	07	B4-0	5/21/2012	1300	X	X							X					D	1	T	M	C	
	08	B4-2	5/21/2012	1305	X	X							X					D	1	T	M	C	
	09	B5-0	5/21/2012	1028	X	X	X			X	X		X					D	1	T	P	C	
	10	B5-2	5/21/2012	1032	X	X	X			X	X		X					D	1	T	P	C	

- TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs B = Emergency Next Workday C = Critical 2 Workdays D = Urgent 3 Workdays E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives:
H=HCl N=HNO_3 S=H_2SO_4 C=4°C
Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y ☐ N ☐ | 2. HEADSPACE (VOA) Y ☐ N ☐ | 3. CONTAINER INTACT Y ☐ N ☐ | 4. SEALED Y ☐ N ☐ | 5. # OF SPLS MATCH COC Y ☐ N ☐ | 6. PRESERVED Y ☐ N ☐

Client: GEOCON Consultants, Inc
Attention: Jim Brake (brake@geoconinc.com)
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: RALEY'S CAPITOL NURSERY
Project #: S9695-06-02
Sampler: (Printed Name) GEMMA REBLANDO (Signature)

Relinquished by: (Signature and Printed Name) GEMMA REBLANDO Date: 5/21/12 Time: 1600
Received by: (Signature and Printed Name) Date: 5/22/12 Time: 827
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: GEMMA REBLANDO 5/21/12
Print Name Date
Signature

Send Report To: Attn: _____ Co: SAME AS ABOVE Addr: _____ City: State: Zip:

Bill To: Attn: _____ Co: SAME AS ABOVE Addr: _____ City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested

SPECIFY APPROPRIATE MATRIX

QA/QC: RTNE ☑ CT ☐ SWRCB ☐ Logcode_____ OTHER _____

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample ID / Location	Date	Time	8081A (Pesticides)	8151 (Herbicides)	VOCs - 8260B (Volatiles) - full suite	8270C (BNA)	8010B (Total Metals)	8015B(M) (DRO and ORO)	8015B(M) (GRO) / 8021B (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	CARBON	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	120505-11	B6-0	5/21/2012	1040			X			X	X						X		D	1	T P	C	
	12	B6-2	5/21/2012	1050			X			X	X						X		D	1	T P	C	
	13	B7-0	5/21/2012	1055			X			X	X						X		D	1	T M	C	
	14	B7-2	5/21/2012	1100			X			X	X						X		D	1	T M	C	
	15	B8-0	5/21/2012	0925	X	X											X		D	1	T M	C	
	16	B8-2	5/21/2012	0930	X	X											X		D	1	T M	C	
	17	B8-3.5	5/21/2012	0935													X		D	1	T M	C	HOLD
	18	B9-0	5/21/2012	0900	X	X											X		D	1	T M	C	
	19	B9-2	5/21/2012	0910	X	X											X		D	1	T M	C	
	20	B10-0	5/21/2012	1310	X	X											X		D	1	T M	C	

- TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs | B = Emergency Next Workday | C = Critical 2 Workdays | D = Urgent 3 Workdays | E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED Y ☐ N ☐ 4. SEALED Y ☐ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☐ N ☐
3. CONTAINER INTACT Y ☐ N ☐ 6. PRESERVED Y ☐ N ☐

Client: GEOCON Consultants, Inc
Attention: Jim Brake (brake@geoconinc.com)
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: RALEY'S CAPITOL NURSERY
Project #: S9695-06-02
Sampler: (Printed Name) GEMMA REBLANDO (Signature)

Relinquished by: (Signature and Printed Name) GEMMA REBLANDO Date: 5/21/12 Time: 1600
Received by: (Signature and Printed Name) Date: 5/22/12 Time: 827
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: GEMMA REBLANDO 5/21/12
Print Name Date
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Addr: _____
City: State: Zip:

Bill To:
Attn: _____
Co: SAME AS ABOVE
Addr: _____
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8151 (Herbicides) | VOCs - 8260B (Volatiles) - full suite | 8270C (BNA) | 6010B (Total Metal) | 8015B(M) (DRO and ORO) | 8015B(M) (GRO) / 8021B (BTEX) | TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER | CARBON

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample ID / Location	Date	Time	8081A	8151	VOCs	8270C	6010B	8015B(M) DRO	8015B(M) GRO	TITLE 22	SOIL	WATER	GROUND WATER	WASTEWATER	CARBON	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	120905-21	B10-2	5/21/2012	1315	X	X							X					D	1	T M	C	
	22	B11-0	5/21/2012	1155	X	X							X					D	1	T M	C	
	23	B11-2	5/21/2012	1200	X	X							X					D	1	T M	C	
	24	B12-0	5/21/2012	1205	X	X	X			X	X	X	X					D	1	T M	C	
	25	B12-2	5/21/2012	1210	X	X	X			X	X	X	X					D	1	T M	C	
	26	B13-0	5/21/2012	1140	X	X							X					D	1	T M	C	
	27	B13-2	5/21/2012	1145	X	X							X					D	1	T M	C	
	28	B14-0	5/21/2012	1320	X	X							X					D	1	T M	C	
	29	B14-2	5/21/2012	1325	X	X							X					D	1	T M	C	
	30	B14-3.5	5/21/2012	1335									X					D	1	T M	C	HOLD

QA/QC: RTNE ☑ CT ☐ SWRCB ☐ Logcode _____ OTHER _____

- TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs; B = Emergency Next Workday; C = Critical 2 Workdays; D = Urgent 3 Workdays; E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Carmen Aguila

From: Gemma Reblando [reblando@geoconinc.com]
Sent: Tuesday, May 22, 2012 10:56 AM
To: 'Diane Galvan'
Cc: 'Carmen Aguila'
Subject: Raley's Capitol Nursery - Herbicide analysis

Hi Diane - I sent out some soil samples yesterday for Raley's Capitol Nursery (Project No. S9695-06-02). Herbicide 8151 analysis was assigned for 24 soil samples. Please cancel herbicide analysis for these samples.

Thanks,
Gemma

Gemma Reblando | *Project Geologist*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Cell 916.396.8476
http://www.geoconinc.com

Diane Galvan

From: Gemma Reblando [reblando@geoconinc.com]
Sent: Wednesday, May 23, 2012 1:25 PM
To: 'Diane Galvan'
Subject: Raley's Capitol Nursery - VOC analysis

Hi Diane - please cancel VOC analysis for the samples for Raley's Capitol Nursery.

Thanks,
Gemma

Gemma Reblando | *Project Geologist*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Cell 916.396.8476
http://www.geoconinc.com

ADVANCED TECHNOLOGY LABORATORIES

May 31, 2012

ELAP No.: 1838
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003

Jim Brake
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

Re: ATL Work Order Number : 1202001
Client Reference : RALEY S CAPITOL NURSERY, S9695-06-02

Enclosed are the results for sample(s) received on May 26, 2012 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B15-3.5	1202001-01	Soil	5/25/12 11:40	5/26/12 12:34
B15-8.0	1202001-02	Soil	5/25/12 11:50	5/26/12 12:34
B16-13.0	1202001-03	Soil	5/25/12 12:20	5/26/12 12:34
B16-15.0	1202001-04	Soil	5/25/12 12:25	5/26/12 12:34
GW-B15	1202001-05	Groundwater	5/25/12 13:40	5/26/12 12:34

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Client Sample ID B15-3.5

Lab ID: 1202001-01

Gasoline Range Organics by EPA 8015B — **Analyst: DP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
Surrogate: 4-Bromofluorobenzene	*95.6 %*	*69 - 158*			B2E0917	05/31/2012	*05/31/12 13:35*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.9**	1.0	NA	1	B2E0867	05/30/2012	05/30/12 14:32	
Surrogate: p-Terphenyl	*84.2 %*	*39 - 123*			B2E0867	05/30/2012	*05/30/12 14:32*	

BTEX/MTBE by EPA 8021 — **Analyst: DP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
Toluene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
Ethylbenzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
m,p-Xylene	ND	10	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
o-Xylene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:35	
Surrogate: 4-Bromofluorobenzene	*107 %*	*65 - 140*			B2E0917	05/31/2012	*05/31/12 13:35*	

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Client Sample ID B15-8.0

Lab ID: 1202001-02

Gasoline Range Organics by EPA 8015B — **Analyst: DP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
Surrogate: 4-Bromofluorobenzene	*98.8 %*	*69 - 158*			B2E0917	05/31/2012	*05/31/12 13:51*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**3.0**	1.0	NA	1	B2E0867	05/30/2012	05/30/12 13:59	
Surrogate: p-Terphenyl	*69.6 %*	*39 - 123*			B2E0867	05/30/2012	*05/30/12 13:59*	

BTEX/MTBE by EPA 8021 — **Analyst: DP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
Toluene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
Ethylbenzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
m,p-Xylene	ND	10	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
o-Xylene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 13:51	
Surrogate: 4-Bromofluorobenzene	*111 %*	*65 - 140*			B2E0917	05/31/2012	*05/31/12 13:51*	

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Client Sample ID B16-13.0

Lab ID: 1202001-03

Gasoline Range Organics by EPA 8015B — **Analyst: DP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
Surrogate: 4-Bromofluorobenzene	*97.7 %*	*69 - 158*			B2E0917	05/31/2012	*05/31/12 14:06*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**60**	1.0	NA	1	B2E0867	05/30/2012	05/30/12 14:49	
Surrogate: p-Terphenyl	*87.7 %*	*39 - 123*			B2E0867	05/30/2012	*05/30/12 14:49*	

BTEX/MTBE by EPA 8021 — **Analyst: DP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
Toluene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
Ethylbenzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
m,p-Xylene	ND	10	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
o-Xylene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:06	
Surrogate: 4-Bromofluorobenzene	*108 %*	*65 - 140*			B2E0917	05/31/2012	*05/31/12 14:06*	

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Client Sample ID B16-15.0

Lab ID: 1202001-04

Gasoline Range Organics by EPA 8015B — **Analyst: DP**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
Surrogate: 4-Bromofluorobenzene	*99.5 %*	*69 - 158*			B2E0917	05/31/2012	*05/31/12 14:22*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**4.3**	1.0	NA	1	B2E0867	05/30/2012	05/30/12 14:15	
Surrogate: p-Terphenyl	*69.6 %*	*39 - 123*			B2E0867	05/30/2012	*05/30/12 14:15*	

BTEX/MTBE by EPA 8021 — **Analyst: DP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
Toluene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
Ethylbenzene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
m,p-Xylene	ND	10	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
o-Xylene	ND	5.0	NA	1	B2E0917	05/31/2012	05/31/12 14:22	
Surrogate: 4-Bromofluorobenzene	*111 %*	*65 - 140*			B2E0917	05/31/2012	*05/31/12 14:22*	

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Client Sample ID GW-B15

Lab ID: 1202001-05

Gasoline Range Organics by EPA 8015B — **Analyst: BB**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
Surrogate: 4-Bromofluorobenzene	*93.4 %*	*70 - 130*			B2E0866	05/30/2012	*05/30/12 17:37*	

Diesel Range Organics by EPA 8015B — **Analyst: CR**

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**0.13**	0.05	NA	1	B2E0923	05/31/2012	05/31/12 13:14	
ORO	**0.20**	0.05	NA	1	B2E0923	05/31/2012	05/31/12 13:14	
Surrogate: p-Terphenyl	*106 %*	*48 - 124*			B2E0923	05/31/2012	*05/31/12 13:14*	

BTEX/MTBE by EPA 8021 — **Analyst: BB**

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene	ND	0.50	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
Toluene	ND	0.50	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
Ethylbenzene	ND	0.50	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
m,p-Xylene	ND	1.0	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
o-Xylene	ND	0.50	NA	1	B2E0866	05/30/2012	05/30/12 17:37	
Surrogate: 4-Bromofluorobenzene	*89.4 %*	*70 - 130*			B2E0866	05/30/2012	*05/30/12 17:37*	

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova, CA 95742	Reported : 05/31/2012

QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0866 - GCVOAW									
Blank (B2E0866-BLK1)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Gasoline Range Organics	ND	0.05			NR				
Surrogate: 4-Bromofluorobenzene	*0.091*		*0.100*		*91.3*	*70 - 130*			
LCS (B2E0866-BS1)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Gasoline Range Organics	0.95	0.05	1.00		95.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.098*		*0.100*		*98.0*	*70 - 130*			
LCS Dup (B2E0866-BSD1)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Gasoline Range Organics	1.1	0.05	1.00		106	70 - 130	10.6	20	
Surrogate: 4-Bromofluorobenzene	*0.096*		*0.100*		*95.5*	*70 - 130*			
Batch B2E0917 - GCVOAS									
Blank (B2E0917-BLK1)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	*0.095*		*0.100*		*95.4*	*69 - 158*			
LCS (B2E0917-BS1)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Gasoline Range Organics	4.9		5.00		98.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.098*		*0.100*		*97.9*	*69 - 158*			
LCS Dup (B2E0917-BSD1)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Gasoline Range Organics	5.1		5.00		102	70 - 130	2.77	20	
Surrogate: 4-Bromofluorobenzene	*0.10*		*0.100*		*99.8*	*69 - 158*			
Matrix Spike (B2E0917-MS1)		**Source: 1201994-01**		Prepared: 5/31/2012 Analyzed: 5/31/2012					
Gasoline Range Organics	2.4		5.00	0.54	38.0	46 - 135			M1
Surrogate: 4-Bromofluorobenzene	*0.073*		*0.100*		*73.3*	*69 - 158*			
Matrix Spike Dup (B2E0917-MSD1)		**Source: 1201994-01**		Prepared: 5/31/2012 Analyzed: 5/31/2012					
Gasoline Range Organics	2.3		5.00	0.54	35.1	46 - 135	6.12	20	M1
Surrogate: 4-Bromofluorobenzene	*0.076*		*0.100*		*76.0*	*69 - 158*			

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0867 - GCSEMI_DRO_SOIL_LL									
Blank (B2E0867-BLK1)					Prepared: 5/30/2012 Analyzed: 5/30/2012				
DRO	ND	1.0			NR				
Surrogate: p-Terphenyl	*2.3*		*2.67*		*86.3*	*39 - 123*			
LCS (B2E0867-BS1)					Prepared: 5/30/2012 Analyzed: 5/30/2012				
DRO	30	1.0	33.3		90.7	37 - 109			
Surrogate: p-Terphenyl	*2.6*		*2.67*		*96.7*	*39 - 123*			
Matrix Spike (B2E0867-MS1)		**Source: 1201844-14**			Prepared: 5/30/2012 Analyzed: 5/30/2012				
DRO	29	1.0	33.3	2.3	79.3	29 - 107			
Surrogate: p-Terphenyl	*2.5*		*2.67*		*92.7*	*39 - 123*			
Matrix Spike Dup (B2E0867-MSD1)		**Source: 1201844-14**			Prepared: 5/30/2012 Analyzed: 5/30/2012				
DRO	28	1.0	33.3	2.3	76.5	29 - 107	3.31	20	
Surrogate: p-Terphenyl	*2.4*		*2.67*		*91.0*	*39 - 123*			
Batch B2E0923 - GCSEMI_DRO									
Blank (B2E0923-BLK1)					Prepared: 5/31/2012 Analyzed: 5/31/2012				
DRO	ND	0.05			NR				
ORO	ND	0.05			NR				
Surrogate: p-Terphenyl	*0.049*		*0.0800*		*60.7*	*48 - 124*			
LCS (B2E0923-BS1)					Prepared: 5/31/2012 Analyzed: 5/31/2012				
DRO	0.60	0.05	1.00		59.7	45 - 109			
Surrogate: p-Terphenyl	*0.053*		*0.0800*		*66.2*	*48 - 124*			
LCS Dup (B2E0923-BSD1)					Prepared: 5/31/2012 Analyzed: 5/31/2012				
DRO	0.72	0.05	1.00		71.6	45 - 109	18.1	20	
Surrogate: p-Terphenyl	*0.070*		*0.0800*		*87.3*	*48 - 124*			

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

BTEX/MTBE by EPA 8021 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0866 - GCVOAW									
Blank (B2E0866-BLK1)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Benzene	ND	0.50			NR				
Toluene	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
o-Xylene	ND	0.50			NR				
Surrogate: 4-Bromofluorobenzene	*88*		*100*		*87.5*	*70 - 130*			
LCS (B2E0866-BS2)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Benzene	96	0.50	100		95.9	70 - 130			
Toluene	94	0.50	100		93.8	70 - 130			
Ethylbenzene	100	0.50	100		99.8	70 - 130			
m,p-Xylene	200	1.0	200		102	70 - 130			
o-Xylene	100	0.50	100		104	70 - 130			
Surrogate: 4-Bromofluorobenzene	*93*		*100*		*93.4*	*70 - 130*			
LCS Dup (B2E0866-BSD2)				Prepared: 5/30/2012 Analyzed: 5/30/2012					
Benzene	99	0.50	100		98.6	70 - 130	2.75	20	
Toluene	97	0.50	100		96.5	70 - 130	2.87	20	
Ethylbenzene	100	0.50	100		103	70 - 130	2.92	20	
m,p-Xylene	210	1.0	200		105	70 - 130	2.60	20	
o-Xylene	110	0.50	100		107	70 - 130	2.71	20	
Surrogate: 4-Bromofluorobenzene	*94*		*100*		*93.7*	*70 - 130*			
Batch B2E0917 - GCVOAS									
Blank (B2E0917-BLK1)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Benzene	ND	5.0			NR				
Toluene	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
o-Xylene	ND	5.0			NR				
Surrogate: 4-Bromofluorobenzene	*110*		*100*		*107*	*65 - 140*			
LCS (B2E0917-BS2)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Benzene	100		100		100	70 - 130			
Toluene	100		100		104	70 - 130			
Ethylbenzene	100		100		104	70 - 130			
m,p-Xylene	210		200		104	70 - 130			
o-Xylene	110		100		108	70 - 130			
Surrogate: 4-Bromofluorobenzene	*120*		*100*		*116*	*65 - 140*			

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B2E0917 - GCVOAS (continued)									
LCS Dup (B2E0917-BSD2)				Prepared: 5/31/2012 Analyzed: 5/31/2012					
Benzene	100		100		103	70 - 130	2.38	20	
Toluene	110		100		106	70 - 130	1.81	20	
Ethylbenzene	110		100		106	70 - 130	1.45	20	
m,p-Xylene	210		200		105	70 - 130	1.20	20	
o-Xylene	110		100		110	70 - 130	1.48	20	
Surrogate: 4-Bromofluorobenzene	*110*		*100*		*110*	*65 - 140*			
Matrix Spike (B2E0917-MS1)		**Source: 1201994-01**		Prepared: 5/31/2012 Analyzed: 5/31/2012					
Benzene	28		40.8	4.4	59.1	69 - 264			M1
Toluene	100		202	0.13	50.9	44 - 150			
Ethylbenzene	23		76.0	ND	30.6	37 - 161			M1
m,p-Xylene	80		206	0.21	38.4	30 - 149			
o-Xylene	28		73.5	ND	38.3	31 - 166			
Surrogate: 4-Bromofluorobenzene	*80*		*100*		*79.8*	*65 - 140*			
Matrix Spike Dup (B2E0917-MSD1)		**Source: 1201994-01**		Prepared: 5/31/2012 Analyzed: 5/31/2012					
Benzene	27		40.8	4.4	56.0	69 - 264	4.51	20	M1
Toluene	98		202	0.13	48.6	44 - 150	4.56	20	
Ethylbenzene	22		76.0	ND	28.3	37 - 161	7.52	20	M1
m,p-Xylene	75		206	0.21	36.2	30 - 149	5.97	20	
o-Xylene	26		73.5	ND	35.8	31 - 166	6.86	20	
Surrogate: 4-Bromofluorobenzene	*82*		*100*		*81.8*	*65 - 140*			

Geocon Consultants, Inc.	Project Number : RALEY S CAPITOL NURSERY, S9695-(
3160 Gold Valley Drive, Suite 800	Report To : Jim Brake
Rancho Cordova , CA 95742	Reported : 05/31/2012

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: _____
Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: _____

Sample Condition Upon Receipt: 1. CHILLED Y ☑ N ☐ V.6 | 4. SEALED Y ☐ N ☐ | 2. HEADSPACE (VOA) Y ☐ N ☐ | 5. # OF SPLS MATCH COC Y ☐ N ☐ | 3. CONTAINER INTACT Y ☐ N ☐ | 6. PRESERVED Y ☐ N ☐

Client: GEOCON Consultants, Inc
Attention: Jim Brake (brake@geoconinc.com)
Address: 3160 Gold Valley Drive, Suite 800
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: 916.852.9132

Project Name: RALEY'S CAPITOL NURSERY
Project #: S9695-06-02
Sampler: (Printed Name) GEMMA REBLANDO (Signature)

Relinquished by: (Signature and Printed Name) GEMMA REBLANDO Date: 5/25/12 Time: 1600
Received by: (Signature and Printed Name) Date: 5/26/12 Time: 1234
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: GEMMA REBLANDO 5/25/12
Print Name Date
Signature

Send Report To:
Attn: _____
Co: SAME AS ABOVE
Addr: _____
City: State: Zip:

Bill To:
Attn: _____
Co: SAME AS ABOVE
Addr: _____
City: State: Zip:

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides) | 8151 (Herbicides) | VOCs - 8260B (Volatiles) - full suite | 8270C (BNA) | 6010B (Total Metal) | 8015B(M) (DRO) | 8015B(M) (GRO) / 8021B (BTEX) | TITLE 22 / CAM 17 (6010 / 7000)

SPECIFY APPROPRIATE MATRIX: SOIL | WATER | GROUND WATER | WASTEWATER | CARBON

ITEM	LAB USE ONLY: Batch # / Lab No.	Sample ID / Location	Date	Time	8081A	8151	VOCs	8270C	6010B	8015B(M) DRO	8015B(M) GRO/8021B	TITLE 22	SOIL	WATER	GW	WW	CARBON	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	120201-01	B15-3.5	5/25/2012	1140						X	X			X					D	1	T P	C	
	-2	B15-8.0	5/25/2012	1150						X	X			X					D	1	T P	C	
	-3	B16-13.0	5/25/2012	1220						X	X			X					D	1	T P	C	
	-4	B16-15.0	5/25/2012	1225						X	X			X					D	1	T P	C	
	-5	GW-B15	5/25/2012	1340							X				X				D	4	V G	H/C	
	←	GW-B15	5/25/2012	1340						X					X				D	2	L G	C	

QA/QC: RTNE ☑ CT ☐ SWRCB ☐ Logcode _____ OTHER _____

- TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs | B = Emergency Next Workday | C = Critical 2 Workdays | D = Urgent 3 Workdays | E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl $N=HNO_3$ $S=H_2SO_4$ C=4°C $Z=Zn(AC)_2$ O=NaOH $T=Na_2S_2O_3$

Diane Galvan

From: Jim Brake [brake@geoconinc.com]
Sent: Thursday, May 31, 2012 11:08 AM
To: Diane Galvan
Subject: RE: Capital Nursery

Well that was a mistake in the COC that I didn't catch. I asked Gemma to put down 48-hr turnaround. If later today is possible I'd really appreciate it.
Thanks,
Jim

Jim Brake, PG | *Senior Geologist/Associate*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Cell 916.870.1180
http://www.geoconinc.com

From: Diane Galvan [mailto:Diane@atlglobal.com]
Sent: Thursday, May 31, 2012 11:02 AM
To: brake@geoconinc.com
Cc: 'Gemma Reblando'
Subject: RE: Capital Nursery

Here is a copy of the COC we received.

From: Jim Brake [mailto:brake@geoconinc.com]
Sent: Thursday, May 31, 2012 10:59 AM
To: Diane Galvan
Cc: 'Gemma Reblando'
Subject: RE: Capital Nursery

I thought we asked for 48-hr turn. If you had them Tues AM then results should be available this AM.

Jim Brake, PG | *Senior Geologist/Associate*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Cell 916.870.1180
http://www.geoconinc.com

From: Diane Galvan [mailto:Diane@atlglobal.com]
Sent: Thursday, May 31, 2012 9:55 AM
To: brake@geoconinc.com
Subject: RE: Capital Nursery

Hi Jim,

These are scheduled to be done tomorrow. I'll check with the supervisors to see if they can complete them today.

Diane

From: Jim Brake [brake@geoconinc.com]
Sent: Thursday, May 31, 2012 8:30 AM
To: Diane Galvan
Subject: Capital Nursery

Hi Diane. Will we be getting results today for the Capital Nursery samples that we sent to you last Friday?
Thanks,
Jim

Jim Brake, PG | *Senior Geologist/Associate*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Cell 916.870.1180
http://www.geoconinc.com

Forensic Analytical

ENVIRONMENTAL HEALTH CONSULTANTS

Pre-Demolition Asbestos Survey Report

4700 Freeport Blvd
Sacramento, CA

October 25, 2012

Prepared for:

Mr. Michael Helzer
Director of Facilities
Raley's
500 West Capitol Avenue
West Sacramento CA 95605
mhelzer@raleys.com

Prepared by:

Jonathan Curtis
Forensic Analytical Consulting Services, Inc
7625 Sunrise Blvd., Suite 104
Citrus Heights, CA 95610
(916) 726-1303
jcurtis@forensicanalytical.com

FACS Project # PJ17924

TABLE OF CONTENTS

Executive Summary

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Raley's to perform a pre-demolition asbestos survey of the plant nursery located at 4700 Freeport Boulevard in Sacramento, California. The intent of the survey was to identify, sample, and analyze all suspect asbestos containing materials associated with the buildings. This survey included suspect asbestos-containing building materials that will be disturbed during the building demolition. The survey was performed between October 4th and October 10th, 2012.

The following materials were identified as asbestos containing materials:

Old Cashier's Office (In the Octagon) [Bldg 3]
- 9" Green floor tiles

Admin Office [Bldg 6]
- 9" Gray floor tile
- Black floor tile mastic
- Black roof mastic

Landscape Office [Bldg 7]
- Spray Applied Acoustical Material
- Wall Texture
- Taping Mud
- Base cove mastic
- 12" Brown Floor Tile

Utility Building [Bldg 31]
- Roof Mastics

Greenhouse Nursery [Bldg 5]
- Transite panels

Garden Shop [Bldg 4]
- Black floor tile mastic
- 9" White floor tile
- Black roof mastic

"Octagon" [Bldg 22]
- Rolled composition roofing with felt layers
- Black roof mastic

Greenhouse Office [Bldg 29]
- Resilient Sheet Flooring

The following materials were identified as having less than 1% asbestos using the point count method:

Admin Office [Bldg 6]
- Gypsum wallboard and taping mud

Garden Shop [Bldg 4]
- Gypsum wallboard and taping mud

The following has been formatted to meet the reporting requirements of the Sacramento Metropolitan Air Quality Management District (SMAQMD).

FACS recommends that the results of this report be incorporated into any renovation/demolition plans for this building.

*F = Friable or regulated (asbestos-containing that can be crumbled, pulverized or reduced to powder by hand pressure);
*1 = Category 1 (asbestos-containing packings, gaskets, resilient floor coverings and asphalt roofing products);
*2 = Category 2 (asbestos-containing material excluding Category 1 that when dry and in its present form cannot be crumbled, pulverized or reduced to powder by hand pressure).

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT
777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (916) 874-4800

ASBESTOS SURVEY

(See Instructions)

1. Building/Area Description

Plant Nursery includes Old Cashier's Office [Bldg 3], Garden Shop [Bldg 4], Greenhouse Nursery [Bldg 5], Admin Office [Bldg 6], Landscape Office [Bldg 7], Octagon [Bldg 22], Greenhouse Office [Bldg. 29], Utility Bldg. [Bldg.31]

Address	City	# of Structures
4700 Freeport Blvd	Sacramento	8

2. Owner Information

Name			
Raley's			
Address	**City/State**		**Zip**
500 West Capital Avenue	West Sacramento, CA		95605
Contact	**Phone**	**Fax**	
Mike Helzer	916-373-6263	(916) 372-5374	

3. Consultant Information

Survey Date(s): October 4-10, 2012

Company Name			
Forensic Analytical Consulting Services, Inc			
Name		**OSHA #**	
Jonathan Curtis		04-3562	
Address	**City/State**	**Zip**	
7625 Sunrise Blvd., Ste 104	Citrus Heights, CA	95610	
Phone	**Fax**	**Signature**	
(916) 726-1303	(916) 726-3747		

4. Client Information (If different than owner)

☐ General Contractor ☐ Insurance Company
☐ Property Manager ☐ Other

Name			
SAME			
Address	**City/State**	**Zip**	
Contact	**Phone**	**Fax**	

5. Have all of the suspect materials that will be disturbed been sampled?

☒ Yes ☐ No

If no, explain why: N/A

6. Summary of Total Asbestos Containing Material (ACM) Findings

Regulated Asbestos Containing Material (Includes materials subject to known mechanical removal and fire damaged materials)			Category II		Category I	
Square Ft.	Linear Ft.	Cubic Ft.	Square Ft.	Linear Ft.	Square Ft.	Linear Ft.
3,020	N/A	N/A	6299	N/A	3,340	N/A

To receive future SMAQMD Rule updates and changes affecting your industry (check one box):

☐ Please send e-mail notices to _____ ☐ I will sign up myself at www.airquality.org/listserve/ to receive e-mailed notices.

☐ I am already subscribed. ☐ I want the District to mail notices to the address on this application: ☐ Owner ☐ Consultant

Asbestos Survey (7/10)

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT
777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (916) 874-4800

ASBESTOS SURVEY

(See Instructions)

1. Building/Area Description

Plant Nursery (Bldgs 1-2, 8-21, 23-28, 30 and 32, Lath Houses 1-8) [See attached drawing]

Address	City	# of Structures
4700 Freeport Blvd	Sacramento	32

2. Owner Information

Name			
Raley's			
Address	**City/State**	**Zip**	
500 West Capital Avenue	West Sacramento, CA	95605	
Contact	**Phone**	**Fax**	
Mike Helzer	916-373-6263	(916) 372-5374	

3. Consultant Information

Survey Date(s): October 4-10, 2012

Company Name			
Forensic Analytical Consulting Services, Inc			
Name		**OSHA #**	
Jonathan Curtis		04-3562	
Address	**City/State**	**Zip**	
7625 Sunrise Blvd., Ste 104	Citrus Heights, CA	95610	
Phone	**Fax**	**Signature**	
(916) 726-1303	(916) 726-3747		

4. Client Information (If different than owner)

☐ General Contractor ☐ Insurance Company
☐ Property Manager ☐ Other _____

Name		
SAME		
Address	**City/State**	**Zip**
Contact	**Phone**	**Fax**

5. Have all of the suspect materials that will be disturbed been sampled?

☒ Yes ☐ No

If no, explain why: N/A

6. Summary of Total Asbestos Containing Material (ACM) Findings

Regulated Asbestos Containing Material (Includes materials subject to known mechanical removal and fire damaged materials)			Category II		Category I	
Square Ft.	Linear Ft.	Cubic Ft.	Square Ft.	Linear Ft.	Square Ft.	Linear Ft.
N/A	N/A	N/A	N/A	N/A	N/A	N/A

To receive future SMAQMD Rule updates and changes affecting your industry (check one box):

☐ Please send e-mail notices to _____ ☐ I will sign up myself at www.airquality.org/listserve/ to receive e-mailed notices.

☐ I am already subscribed. ☐ I want the District to mail notices to the address on this application: ☐ Owner ☐ Consultant

Asbestos Survey (7/10)

ATTACHMENT I
FINDINGS AND RECOMMENDATIONS

Asbestos-containing materials found in this survey included the following:

Old Cashier's Office (In the Octagon) [Bldg 3]
- 9" Green floor tiles

Garden Shop [Bldg 4]
- Black floor tile mastic
- 9" White floor tile
- Black roof mastic

Landscape Office [Bldg 7]
- Spray Applied Acoustical Material
- Wall Texture
- Taping Mud
- Base cove mastic
- 12" Brown Floor Tile

Utility Building [Bldg 31]
- Roof Mastics

Greenhouse Nursery [Bldg 5]
- Transite panels

Admin Office [Bldg 6]
- 9" Gray floor tile
- Black floor tile mastic
- Black roof mastic

"Octagon" [Bldg 22]
- Rolled composition roofing with felt layers
- Black roof mastic

Greenhouse Office [Bldg 29]
- Resilient Sheet Flooring

The following materials were identified as having less than 1% asbestos using the point count method:

Admin Office [Bldg 6]
- Gypsum wallboard and taping mud

Garden Shop [Bldg 4]
- Gypsum wallboard and taping mud

Spray Applied Acoustical Ceiling Material, Wall Texture, Sheet Flooring Backing and Taping Mud (In Building 7 it wasn't point counted due to having wall texture on it) are regulated asbestos-containing materials (RACM) and therefore must be removed prior to demolition.

The floor tile, roof mastics, and roofing materials are Category 1 materials. If Category 1 materials will be subjected to cutting, grinding, sanding, drilling or abrading during demolition or renovation activities then they must be removed prior to the demolition or renovation.

The black floor tile mastics, base cove mastics, and cementitious wall panels are Category 2 materials. If Category 2 materials have a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act upon them during demolition or renovation, then they must be removed prior to the demolition or renovation.

The wallboard/joint compound in Building 6 is not an asbestos containing material as defined by the EPA and thus is not required to be removed prior to demolition. OSHA requires that worker be protected from exposure to asbestos even when materials being disturbed contain less than 1% asbestos by volume.

The quantities presented are the best estimates that could be derived during the inspection. They are provided for the owner to obtain bids as accurate as possible from abatement contractors. We recommend that contractors verify quantities prior to providing the owner with abatement bids.

Major renovations and/or demolition of the structures involved in this inspection must be permitted and conducted in compliance with Federal NESHAP and SMAQMD Rule 902.

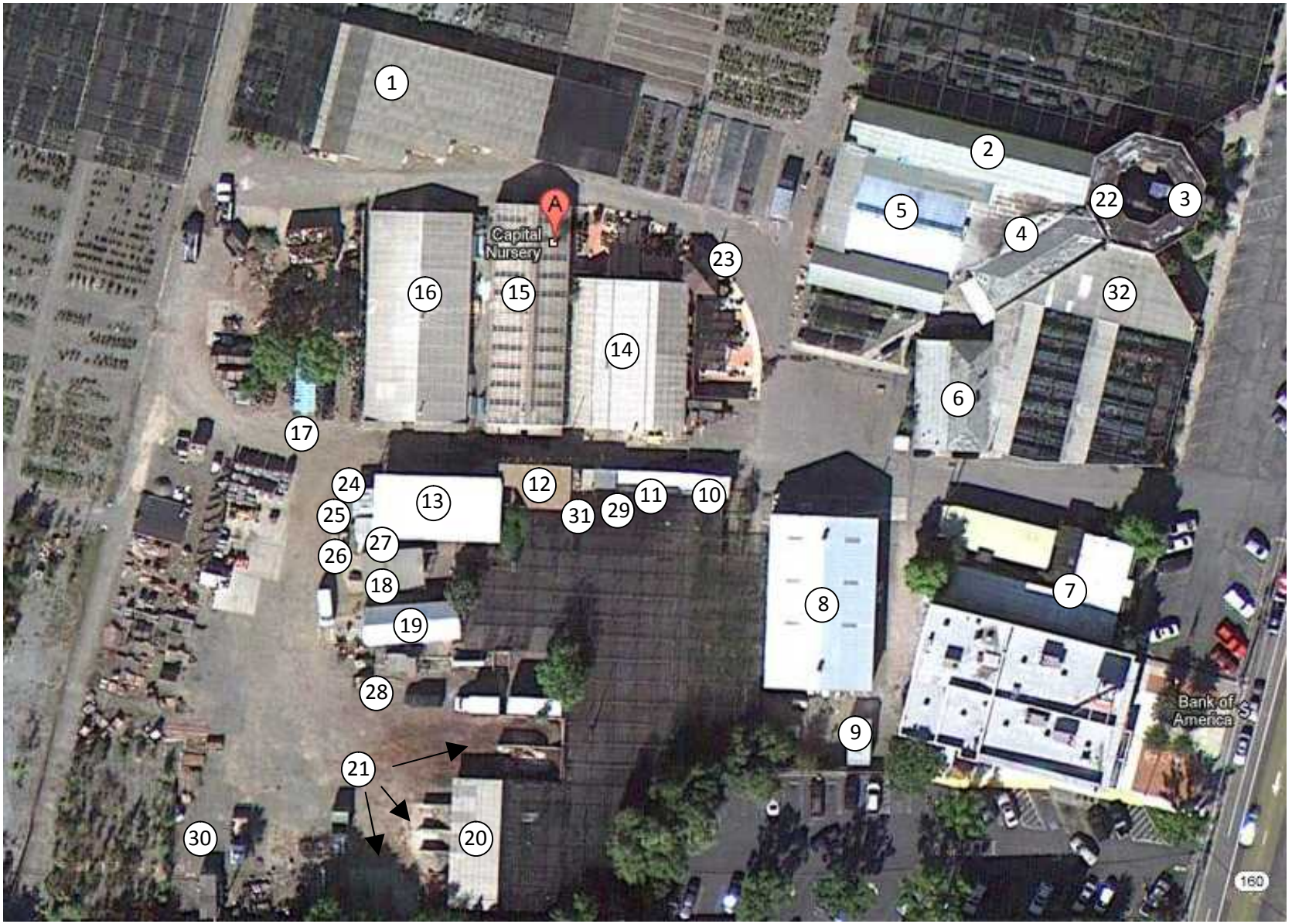
Any suspect materials not included in this inspection must be considered as presumed asbestos-containing materials until such time as they are tested and proven not to contain asbestos.

ATTACHMENT II

SAMPLE LOCATION DRAWINGS

NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

Inner Area


1
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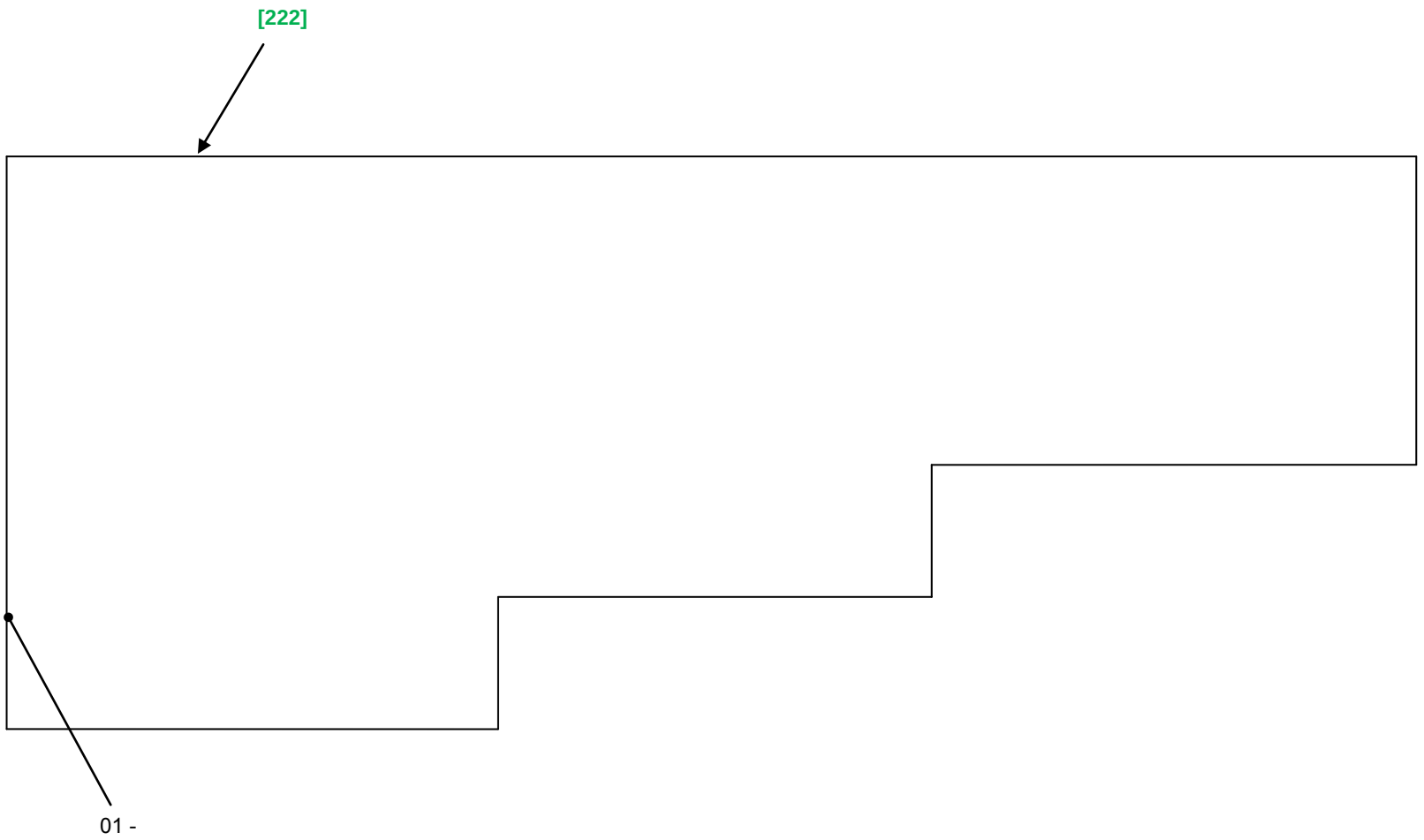
A
Capital Nursery
Bank of America
160

List of Buildings

1. North Greenhouse
2. Breezeway
3. Old Cashier's Office
4. Garden Shop (and the garden cashier's office)
5. Greenhouse Nursery
6. Admin Office
7. Landscape Office
8. Warehouse
9. Old Bulb Storage
10. Inventory Control Room
11. Old Employee Break Room and Changing Room
12. Employee Lunch Room
13. Repotting Shed
14. SE Greenhouse
15. Central South Greenhouse
16. SW Greenhouse
17. (Unknown name shed)
18. Hydraulic lift shed
19. (Unknown name shed)
20. Lawn mower shed
21. Compost/Bark/Soil/Aggregate Stations
22. Octagon
23. Gazebo
24. North Tool Shed
25. South Tool Shed
26. Gas Shed
27. Oil Shed
28. Fertilizer Mixing Shed
29. Greenhouse Office
30. Pipe Shed
31. Utility Room
32. Roof north of Lath Structure 8

Plus the lath structures

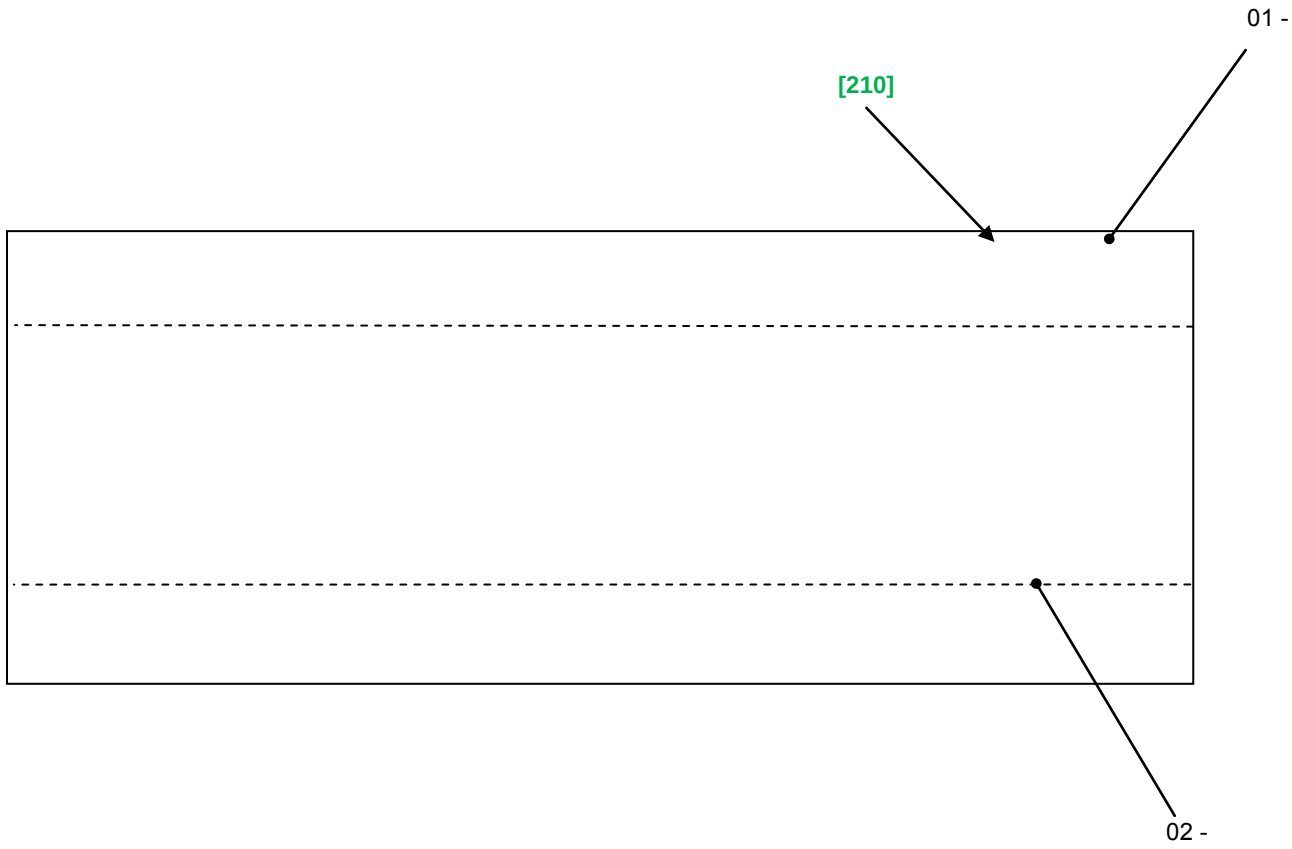


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #1 (North Greenhouse)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

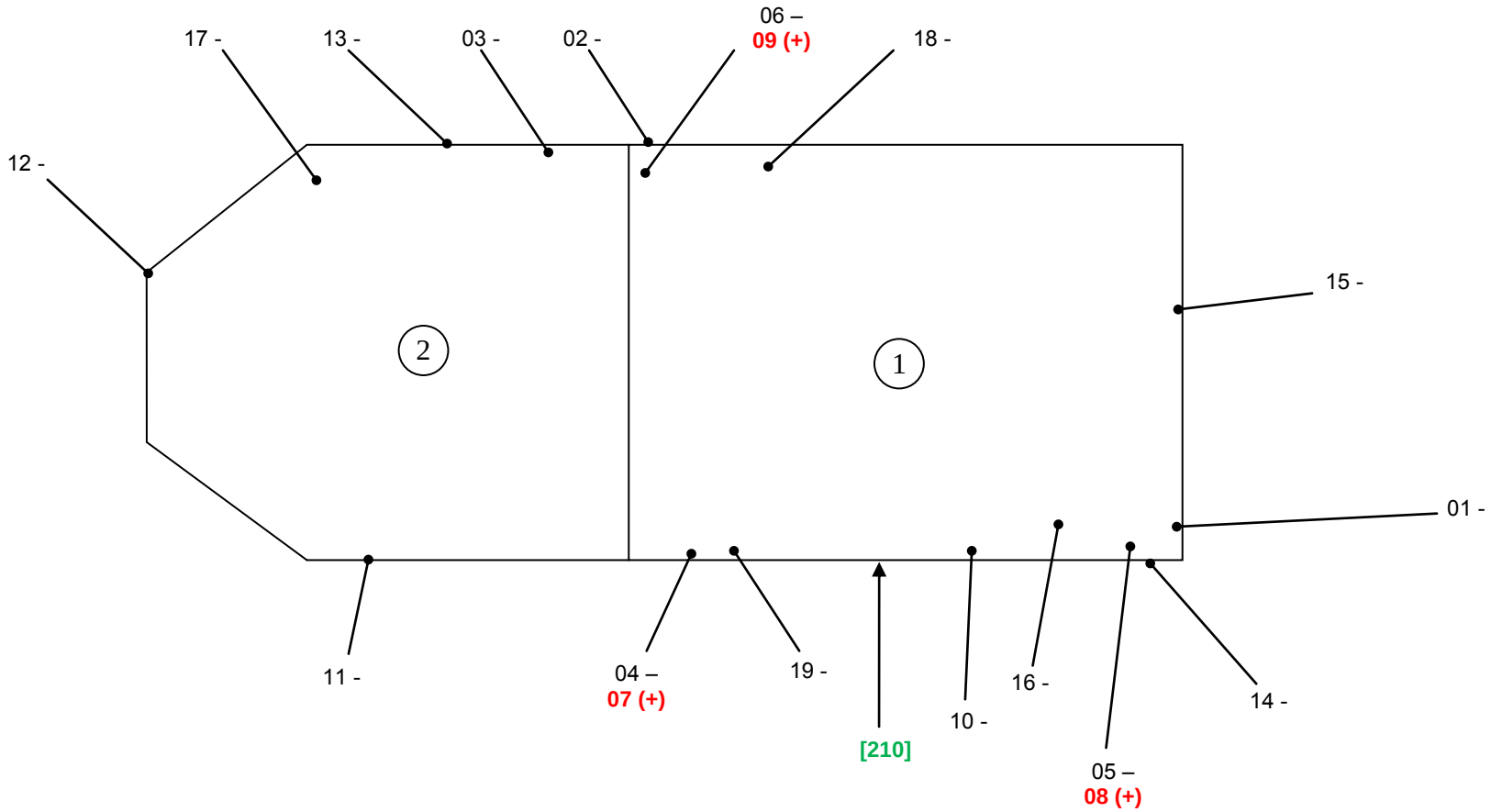


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #2 (Breezeway)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N



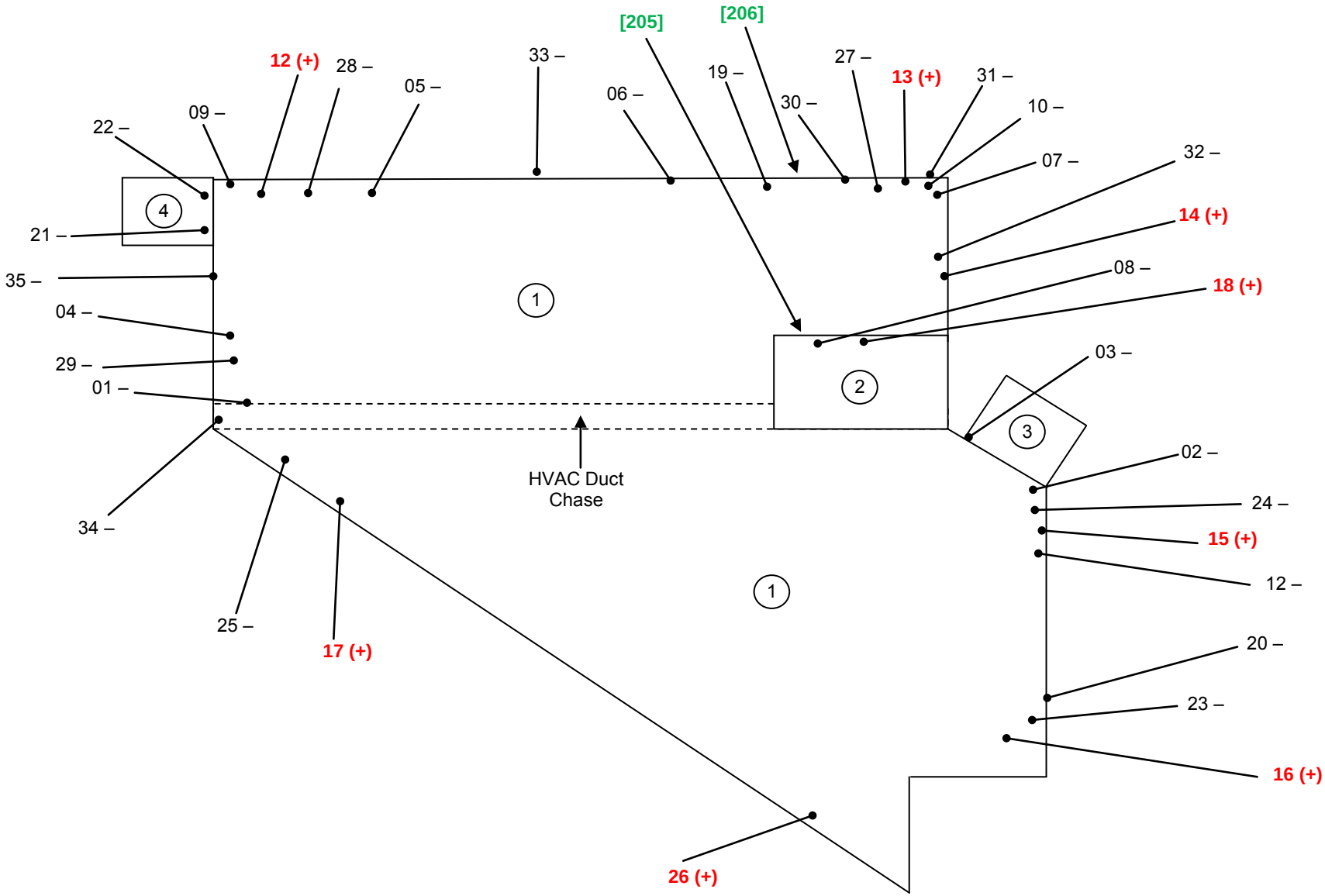
NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #3 (Old Cashier's Office)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

(1) Room Number

N



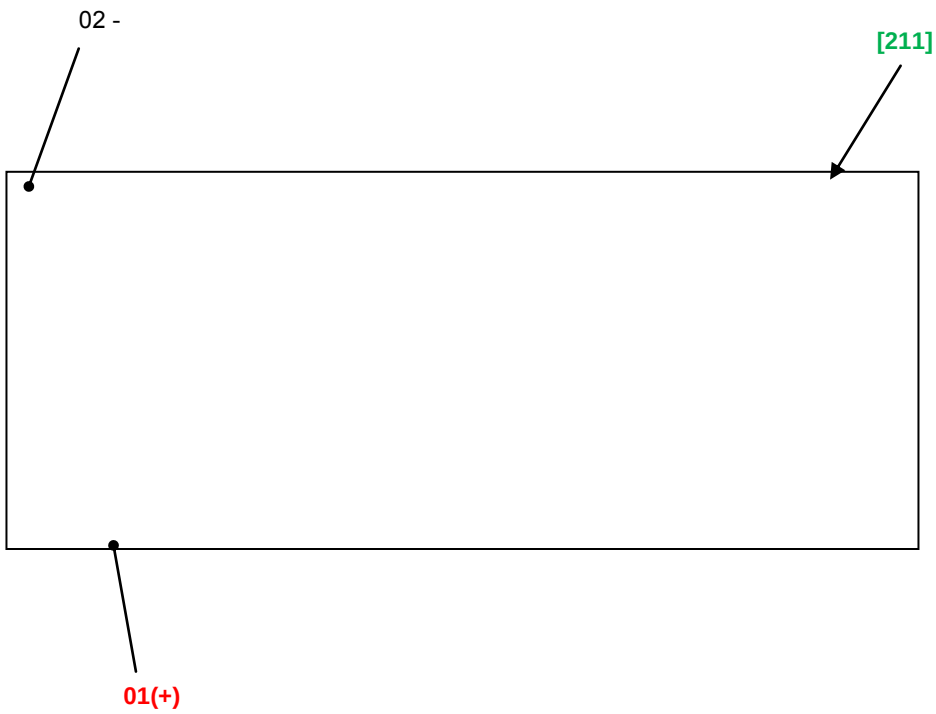
NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #4 (Garden Shop)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

(1) Room Number

N

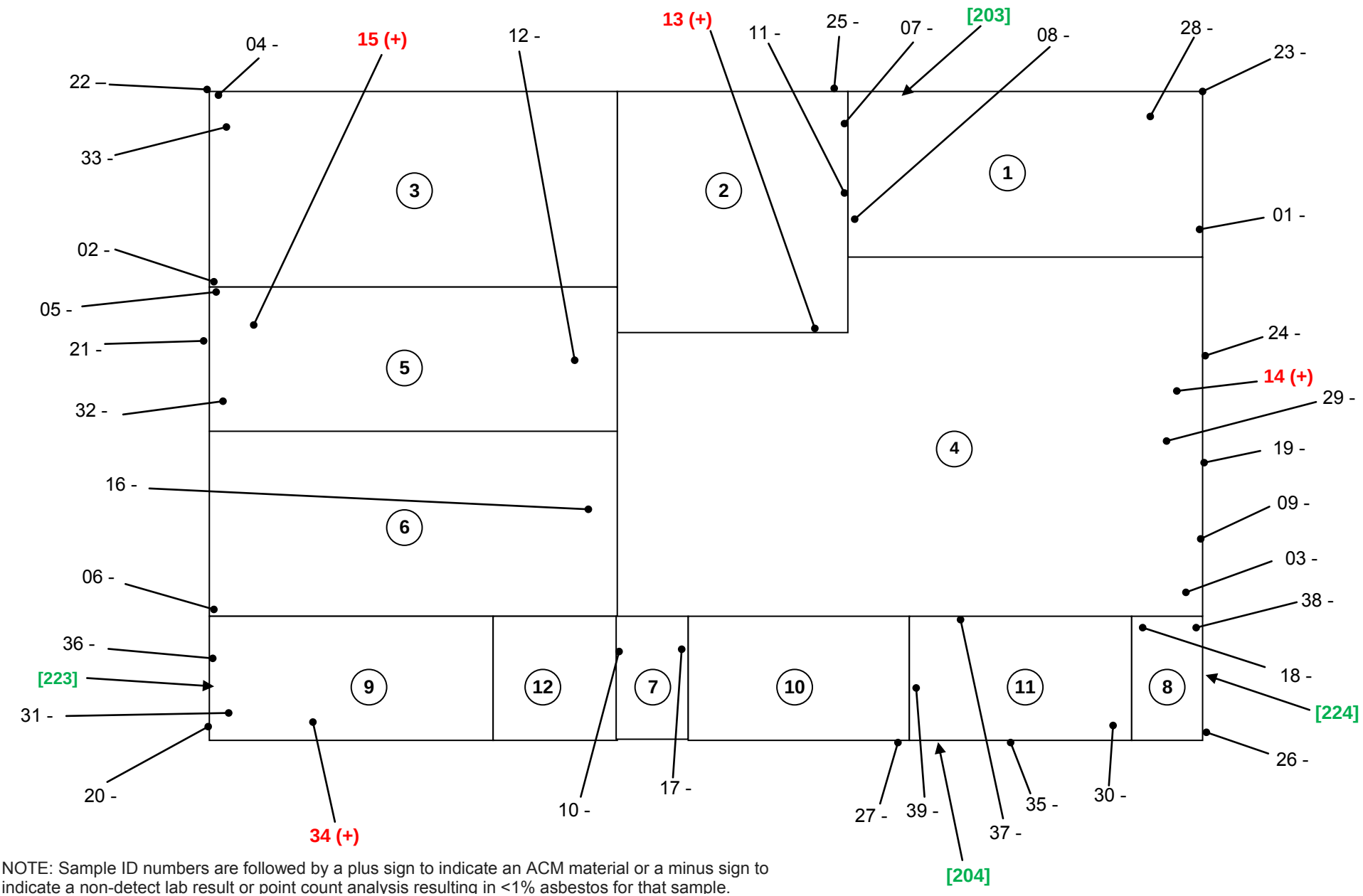


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #5 (Greenhouse Nursery)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N



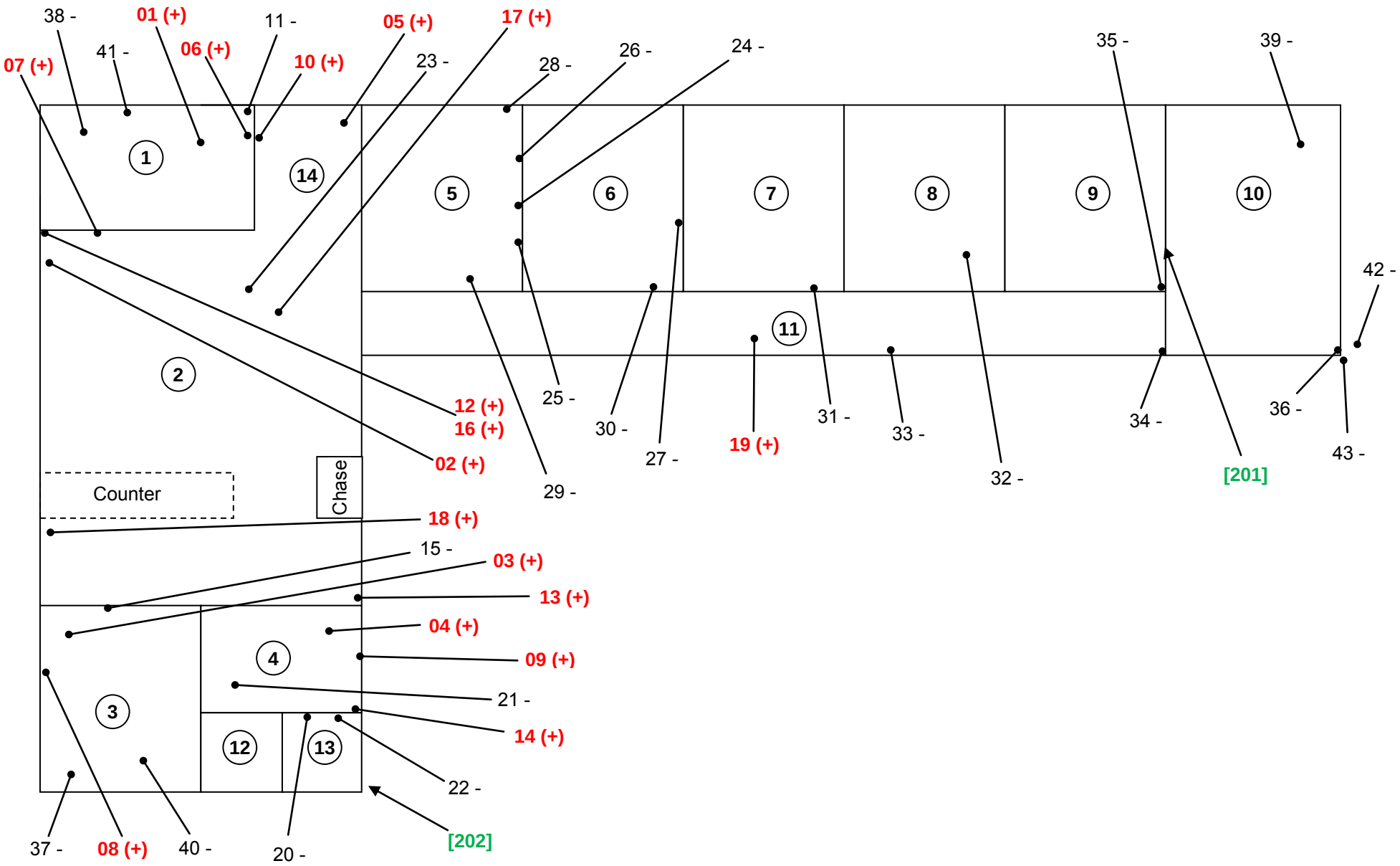
NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #6 (Administration Office)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

1 Room Number

N



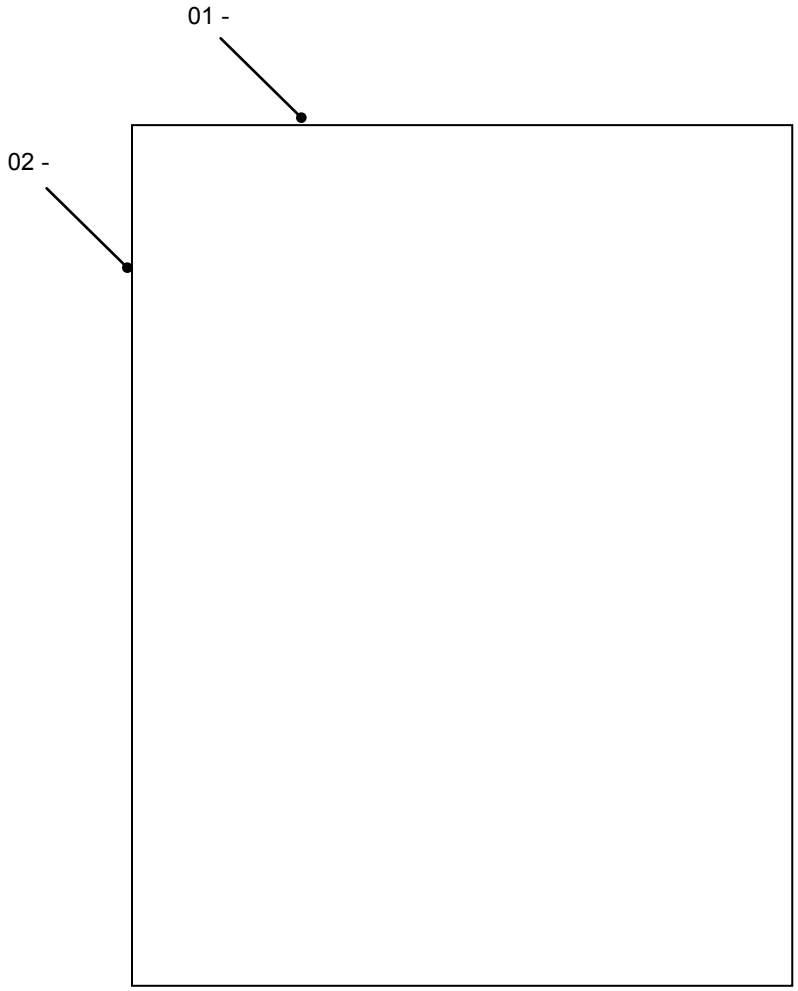
NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #7 (Landscape Office)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

(1) Room Number

N

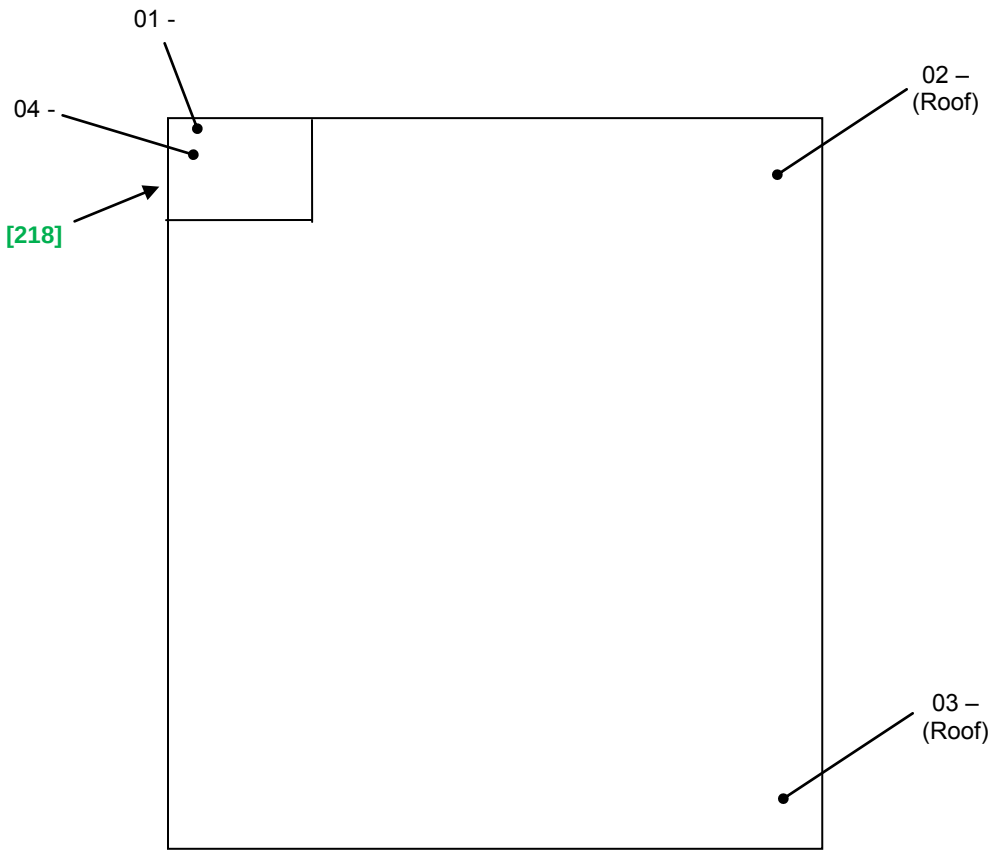


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #8 (Warehouse)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: **[200]**
NOT TO SCALE

N

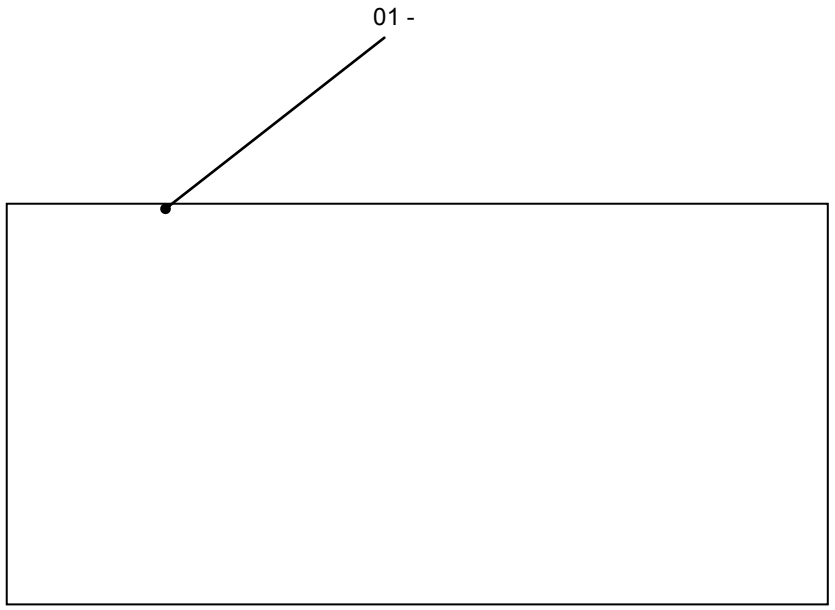


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #9 (Old Bulb Storage)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: **[200]**
NOT TO SCALE

N

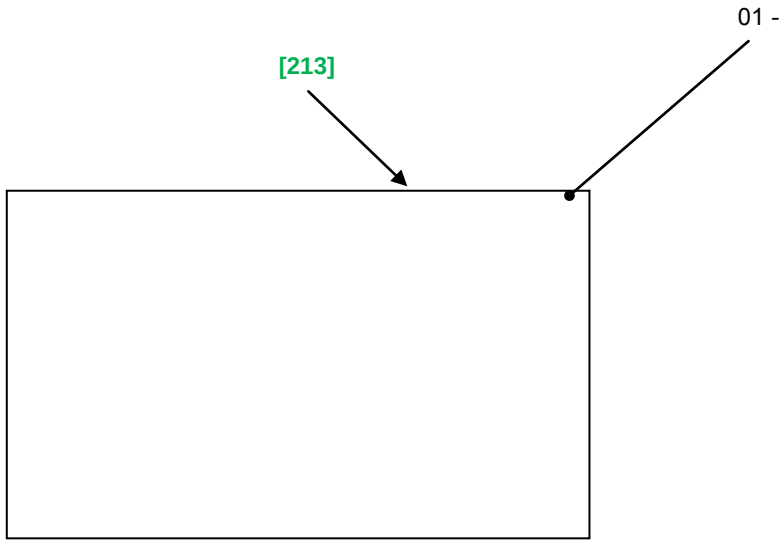


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #10 (Inventory Control Room)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

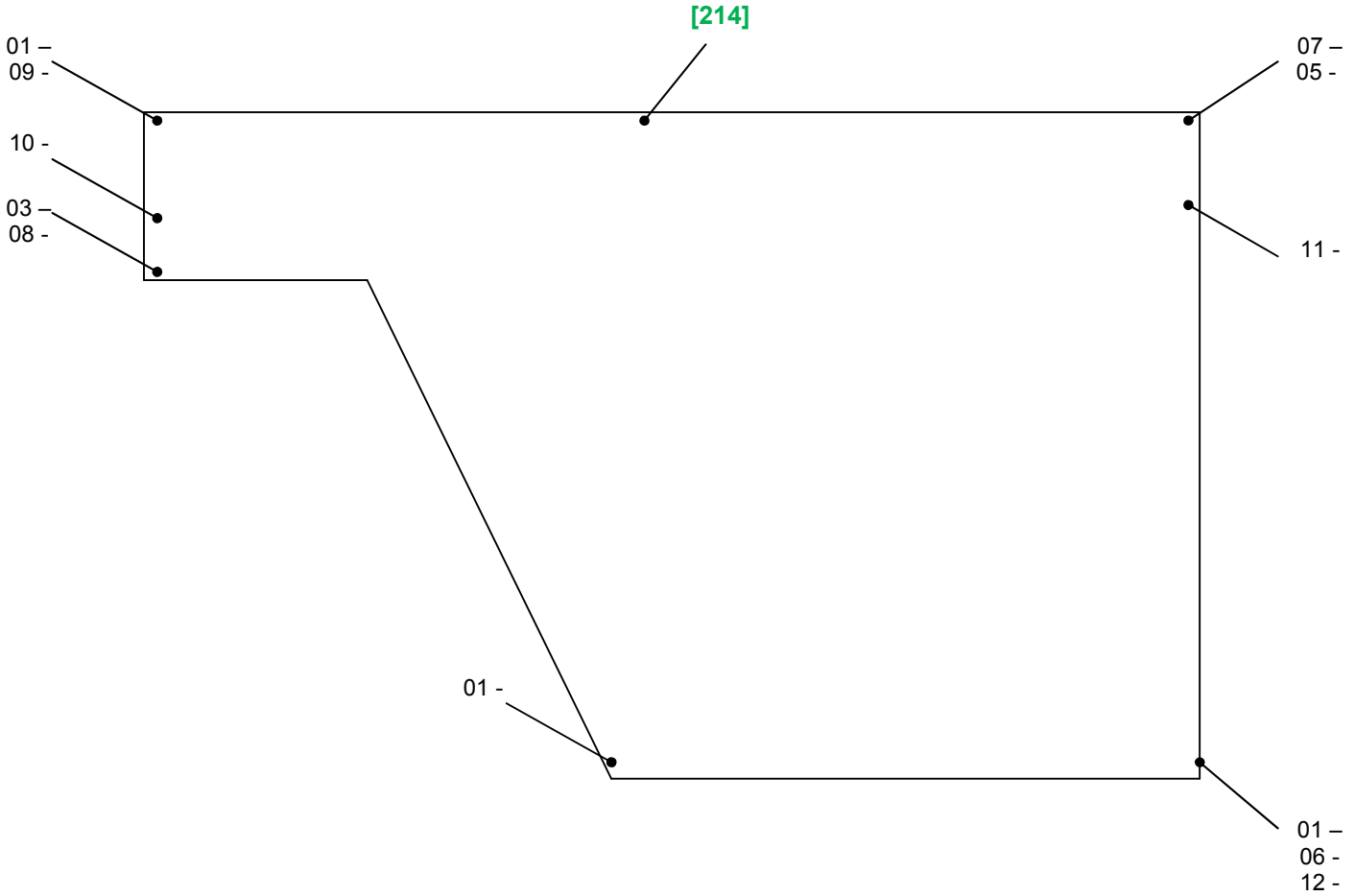


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building # 11 (Old Employee Break Room)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

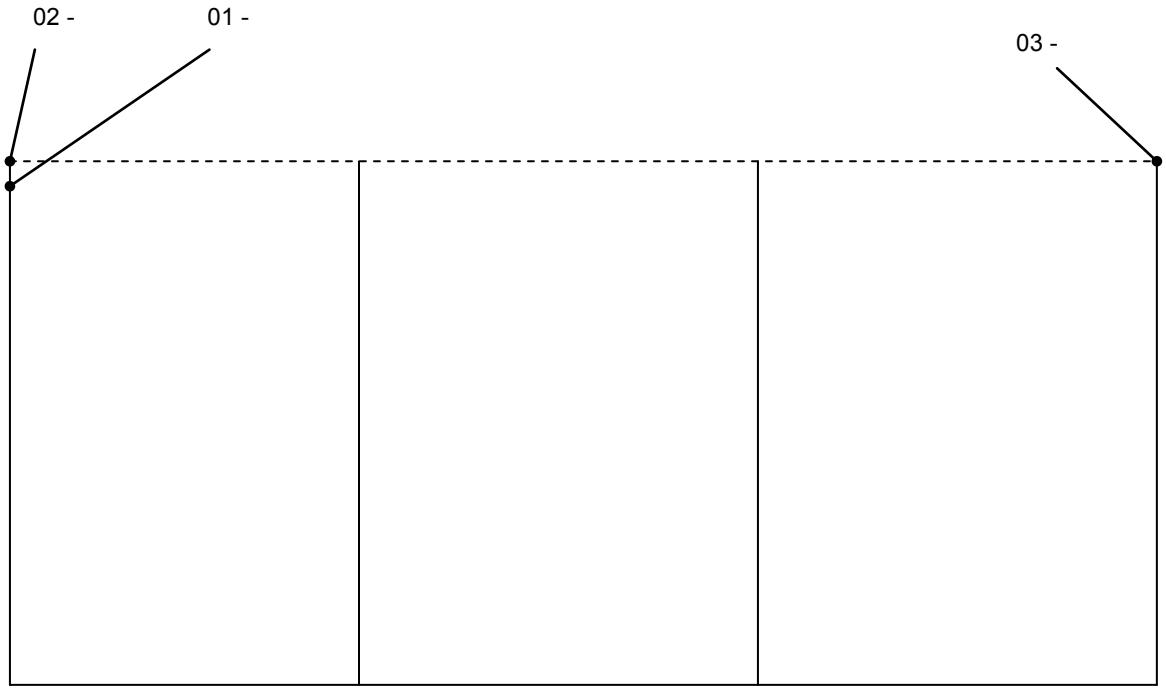


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #12 (Employee Lunch Room)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

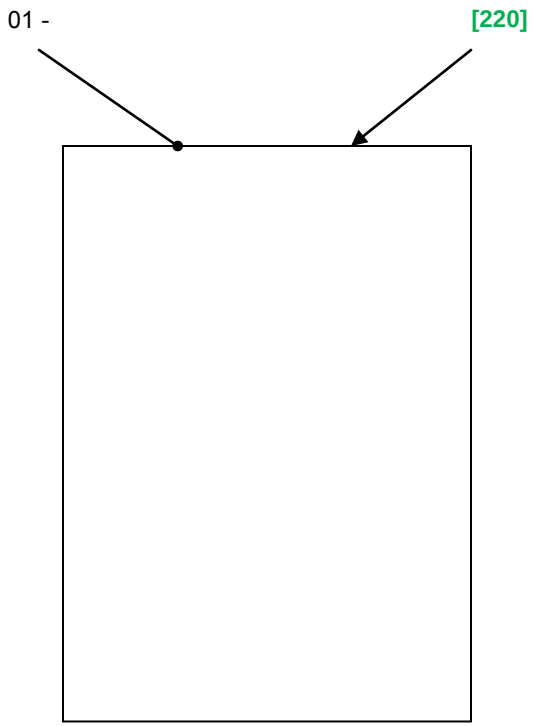
LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING Building #13 (Repotting Shed) Raley's – 4700 Freeport Blvd., Sacramento, CA FACS # PJ17924 October 24, 2012	LEGEND Asbestos Bulk Sample Location: 01 - ⟶ NOT TO SCALE	N

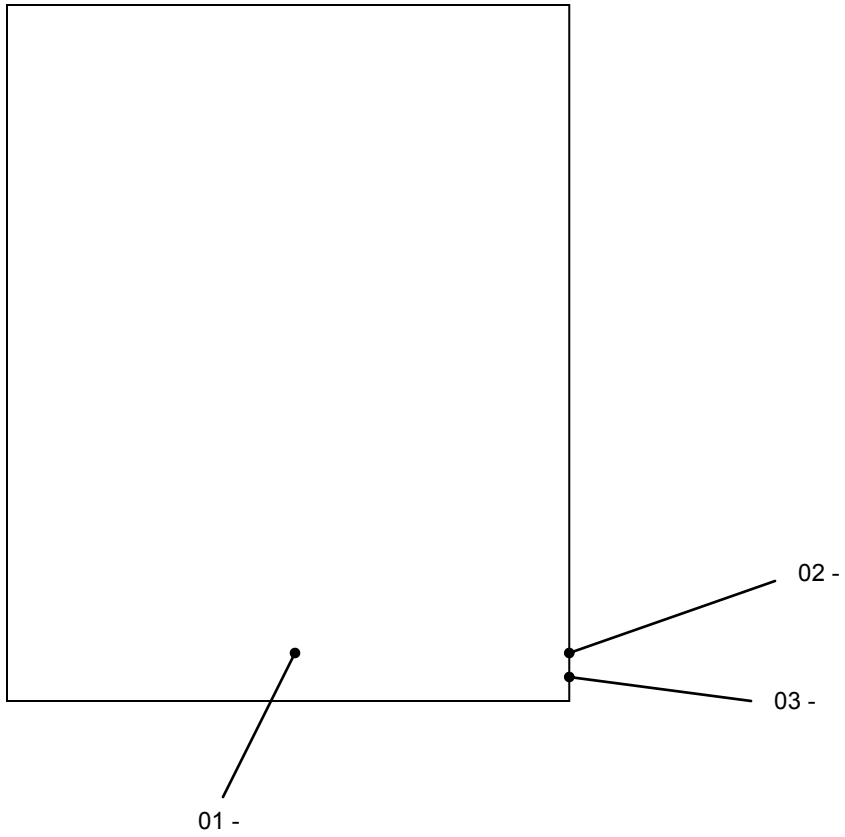


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #14 (Southeast Greenhouse)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

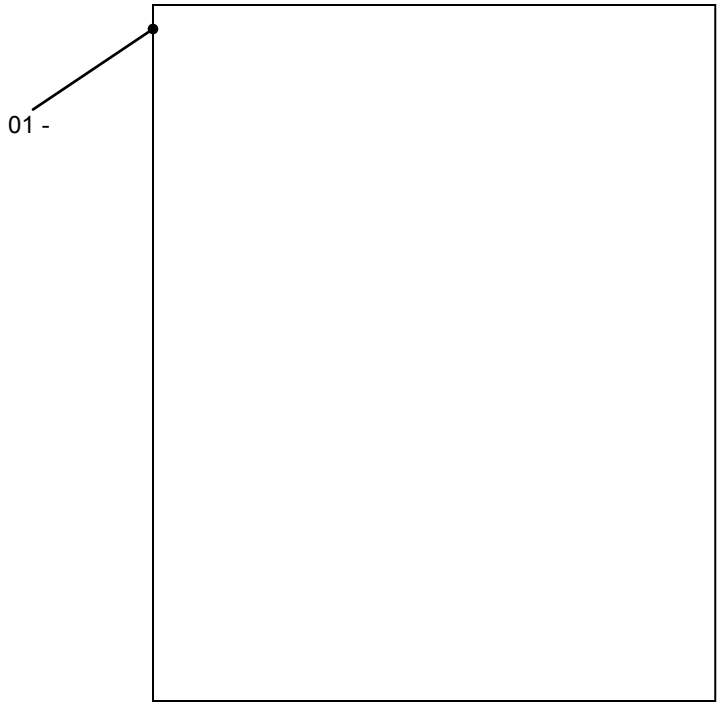


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #15 (Central South Greenhouse)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

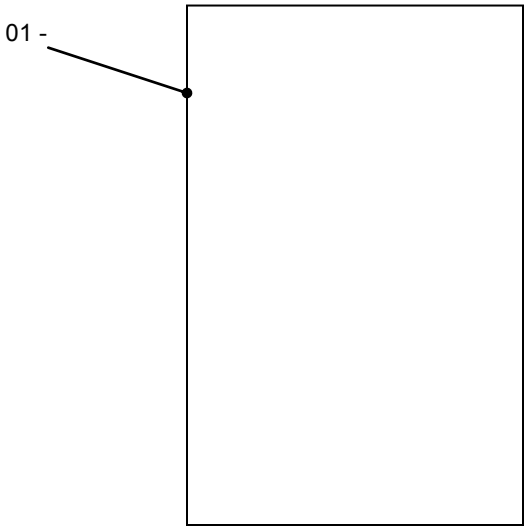


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #16 (Southwest Greenhouse)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

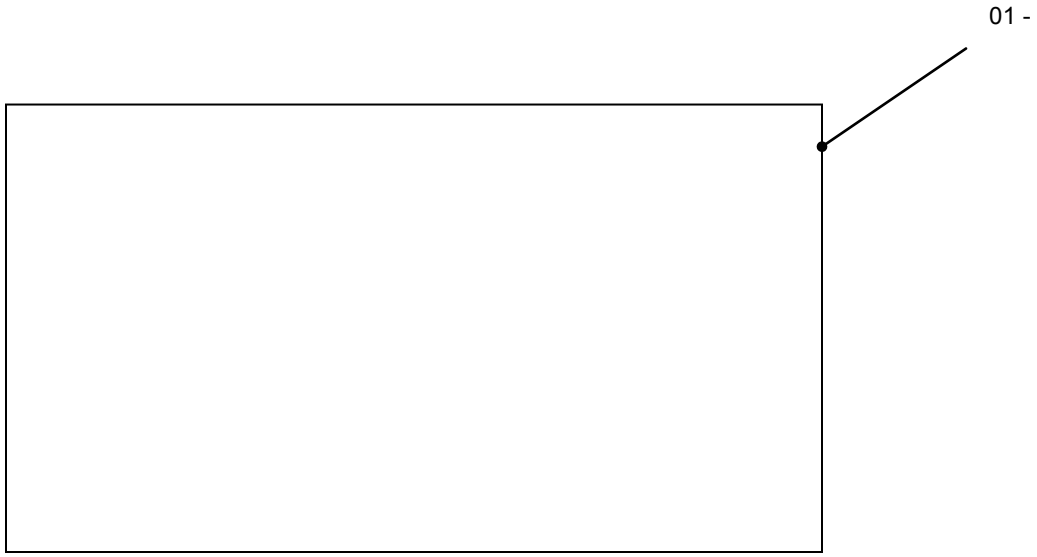


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #17 (Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #18 (Hydraulic Lift Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

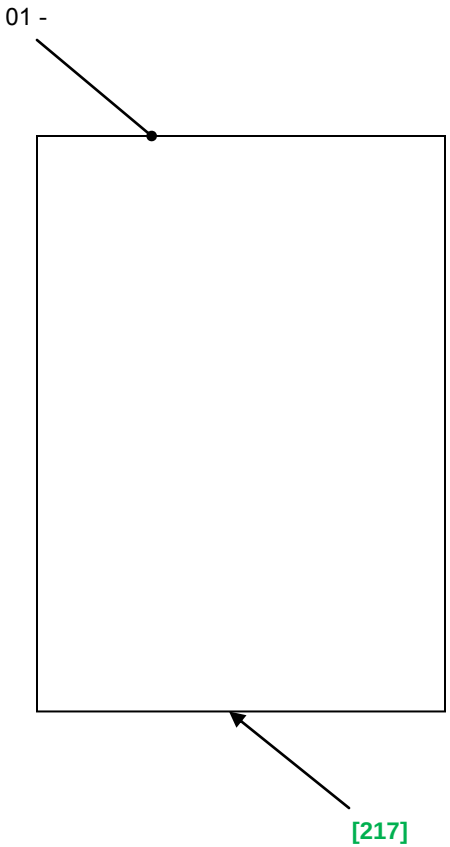
N

NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #19 (Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

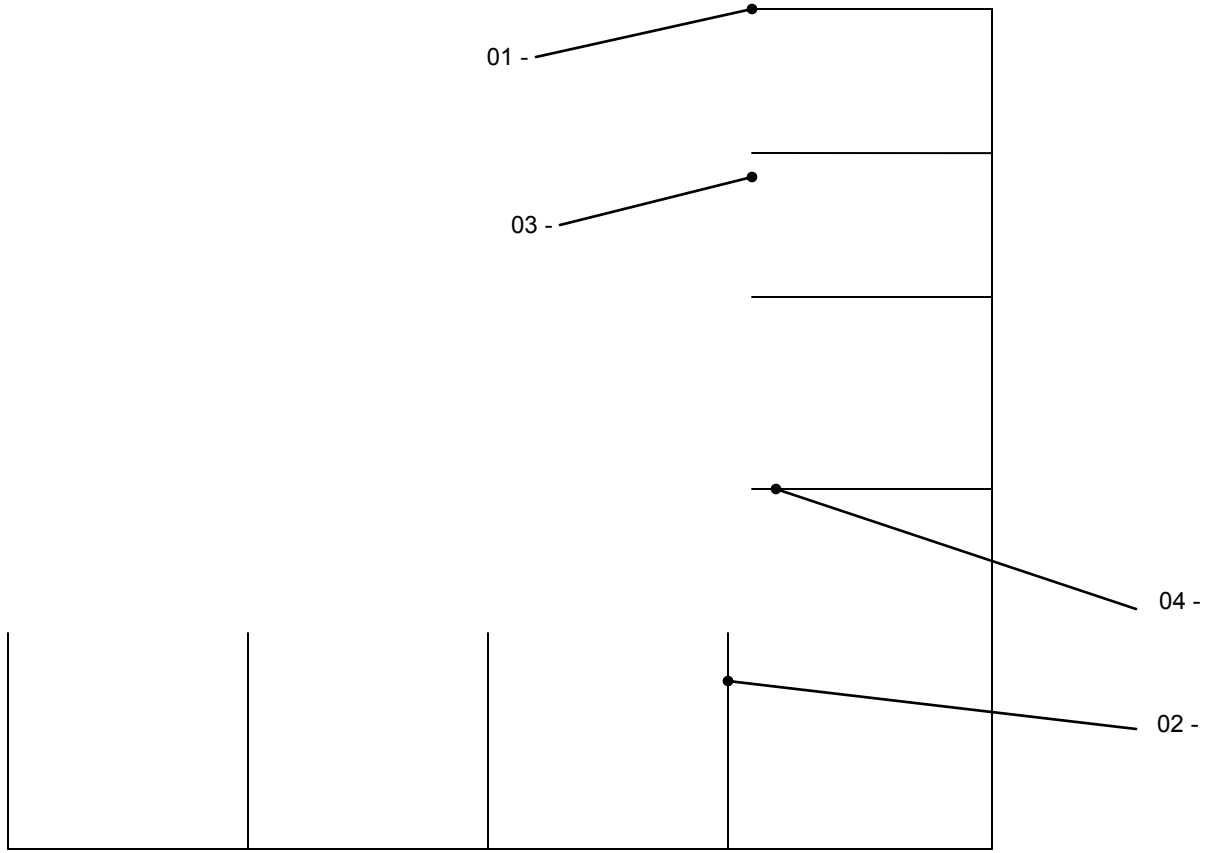


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #20 (Lawnmower Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

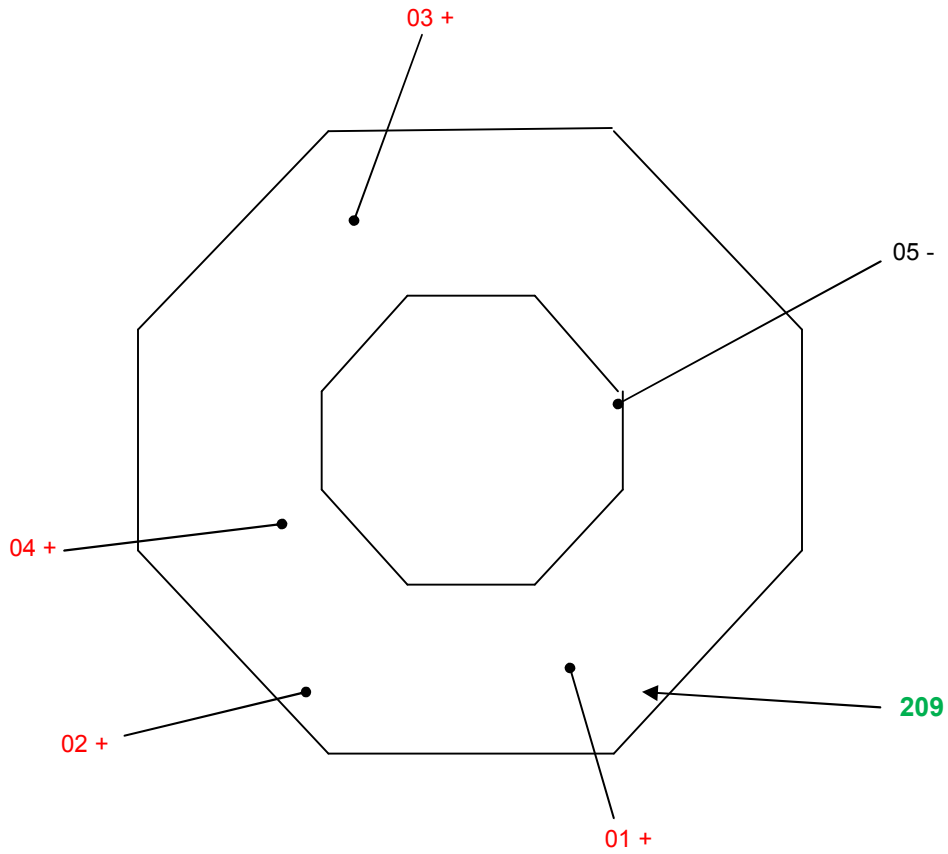


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #21 (Compost/bark/Soil/Aggregate Stations)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

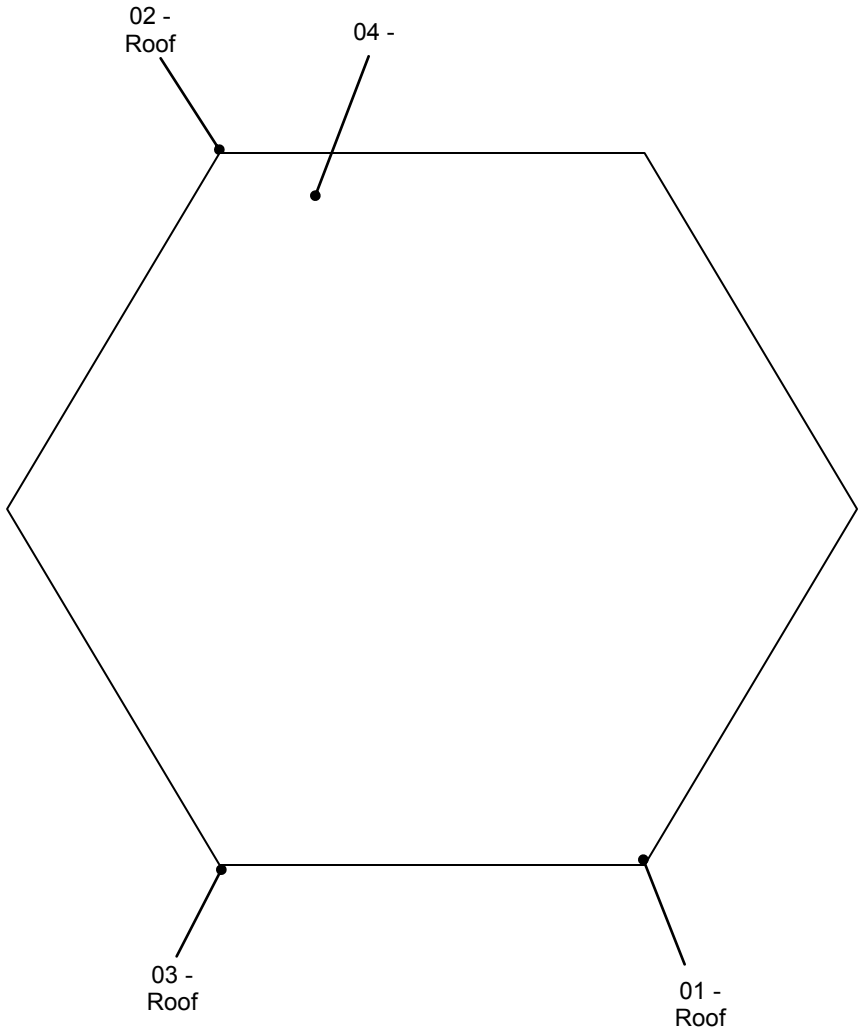


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #22 (Octagon)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

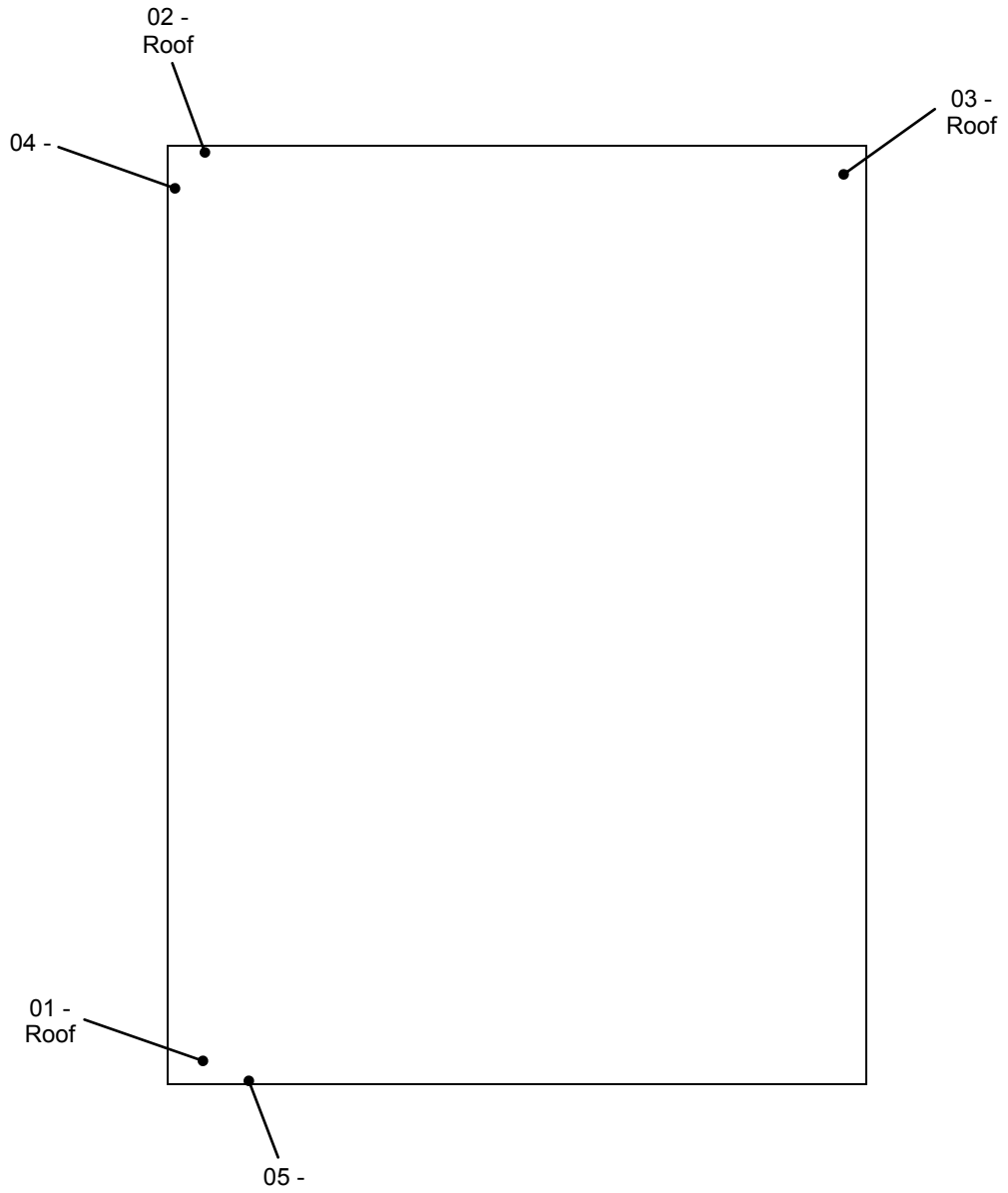
LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING Building #23 (Gazebo) Raley's – 4700 Freeport Blvd., Sacramento, CA FACS # PJ17924 October 24, 2012	LEGEND Asbestos Bulk Sample Location: 01 - ● NOT TO SCALE	N

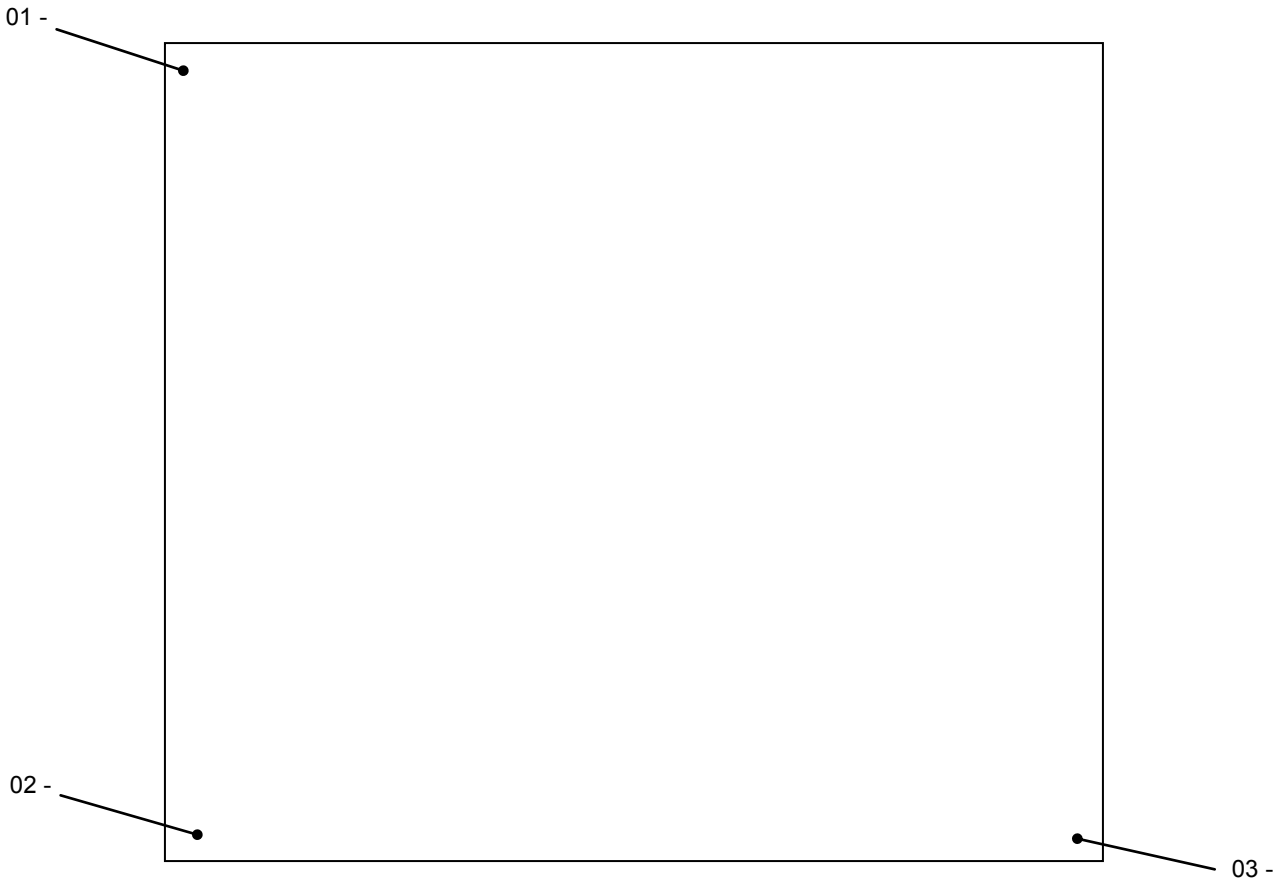


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #24 (North Tool Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

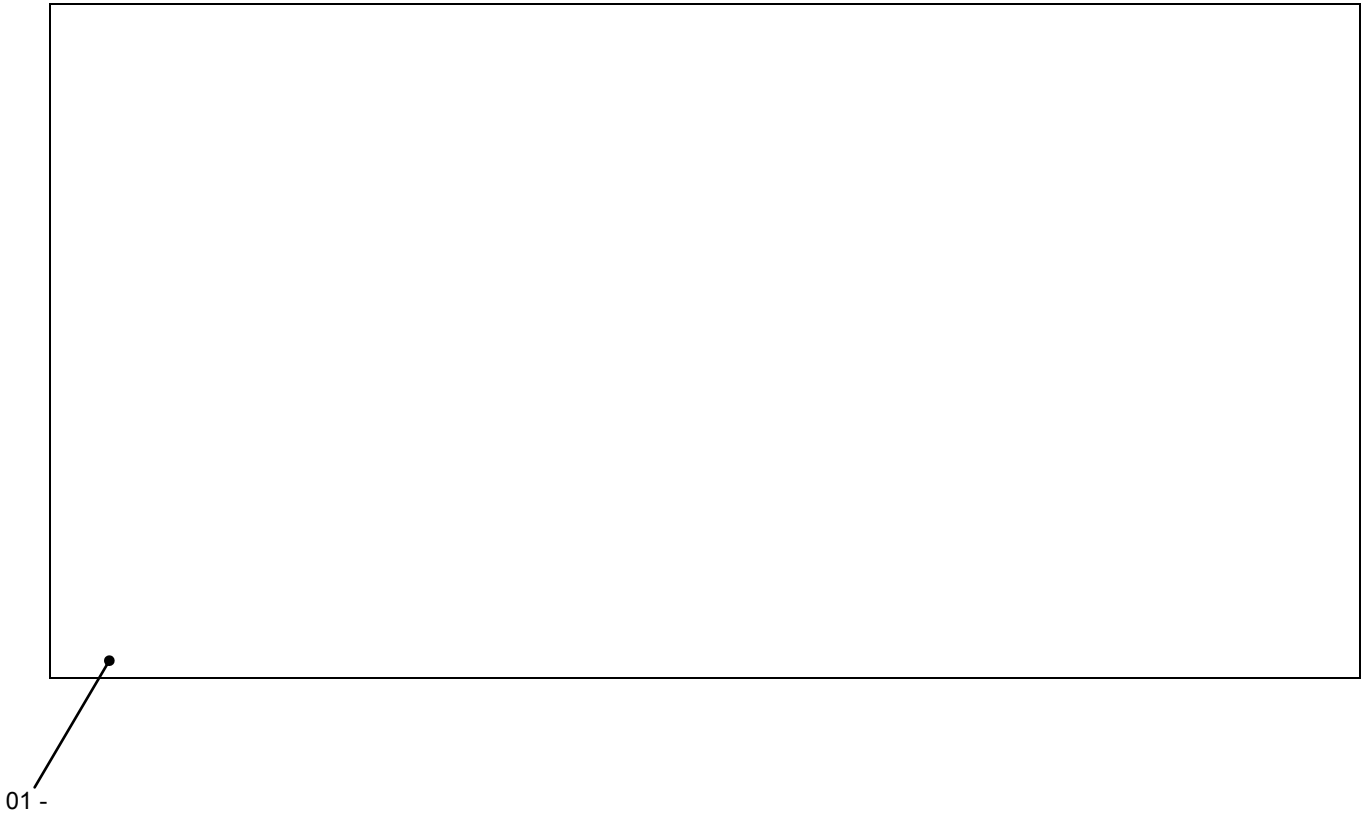


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #25 (South Tool Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

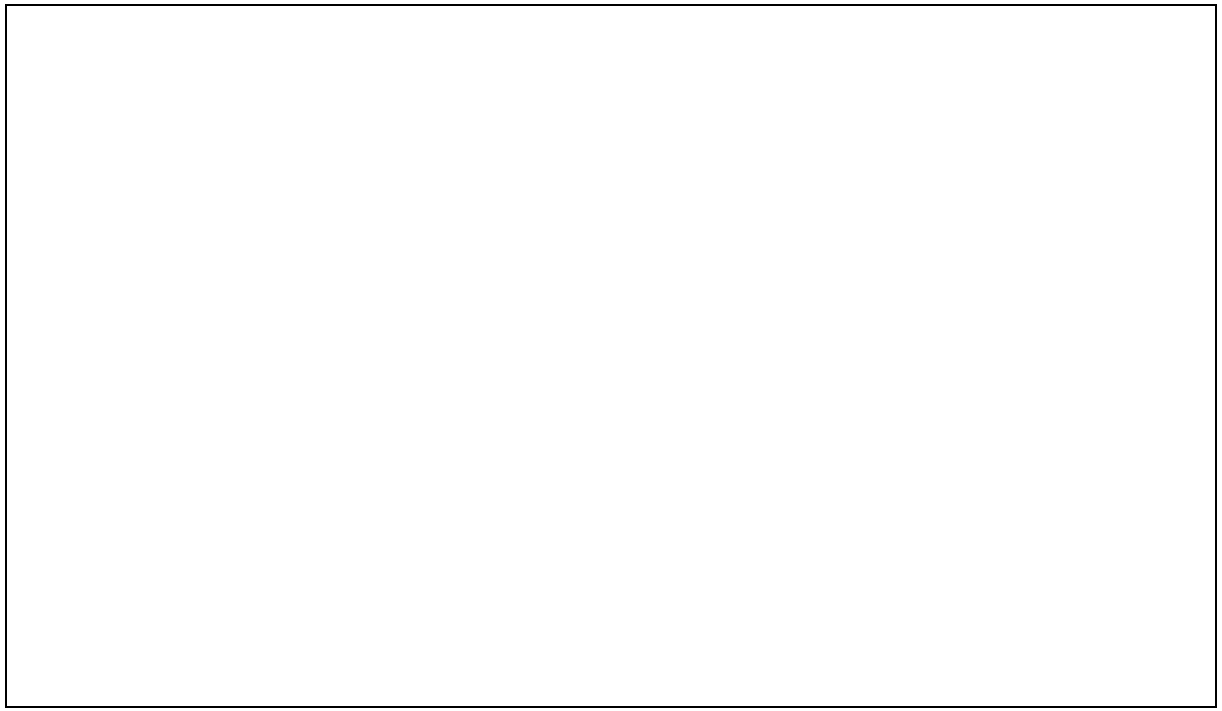
N



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING Building #26 (Gas Shed) Raley's – 4700 Freeport Blvd., Sacramento, CA FACS # PJ17924 October 24, 2012	LEGEND Asbestos Bulk Sample Location: 01 - ⟶ NOT TO SCALE	N

No suspect materials identified



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #27 (Oil Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: **[200]**
NOT TO SCALE

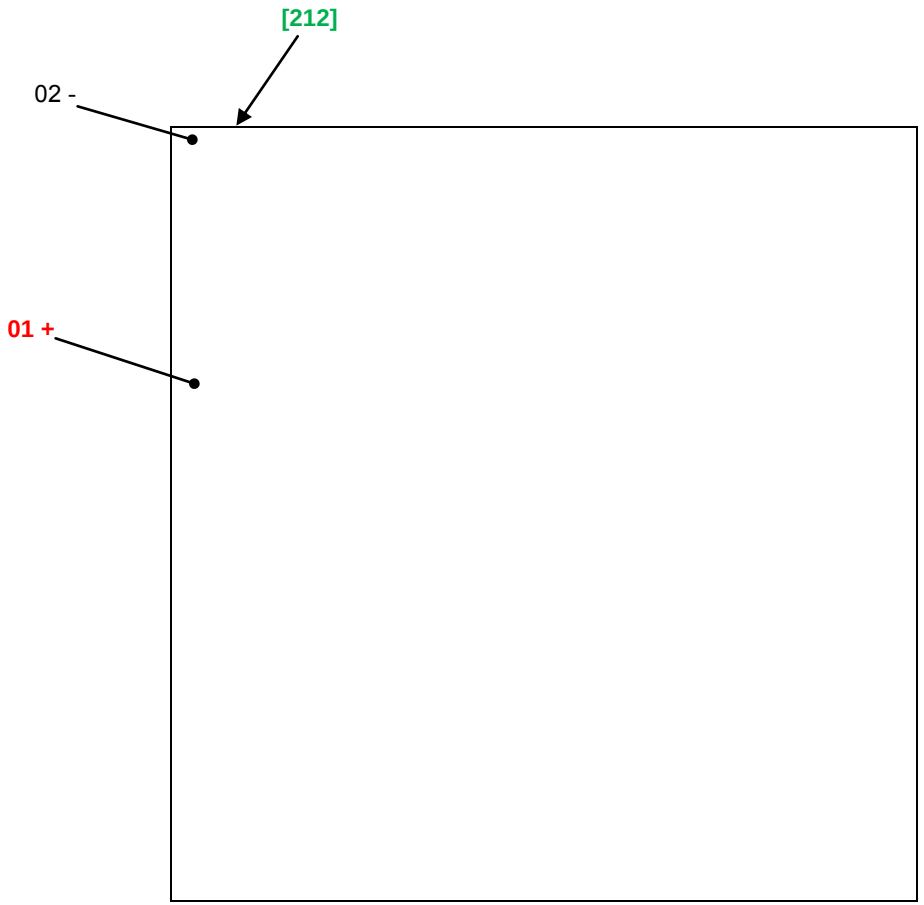
N

NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #28 (Fertilizer Mixing Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

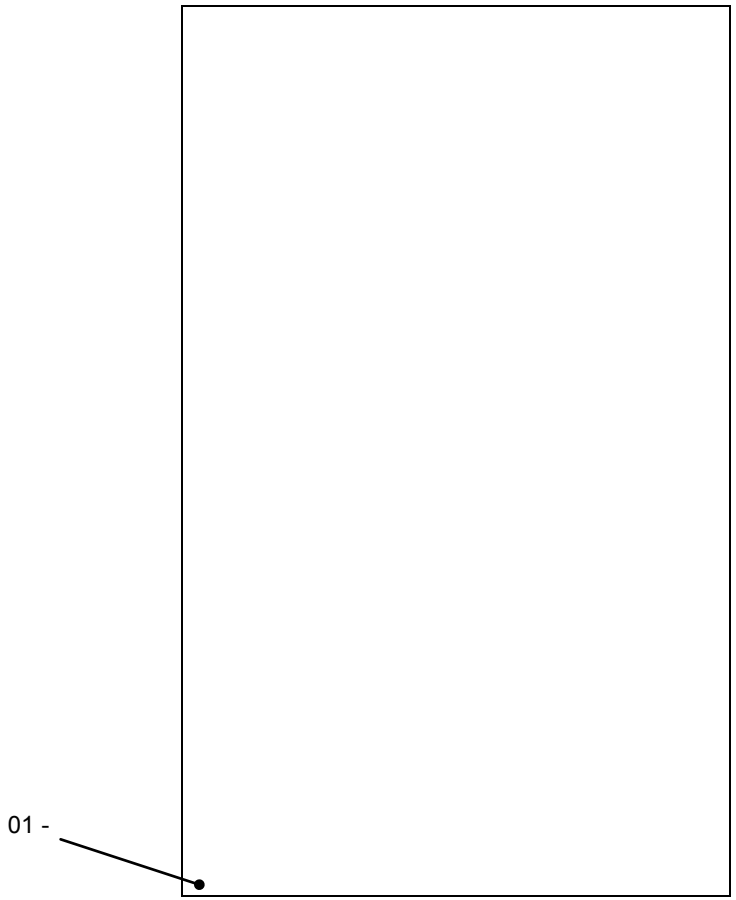


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #29 (Greenhouse Office)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

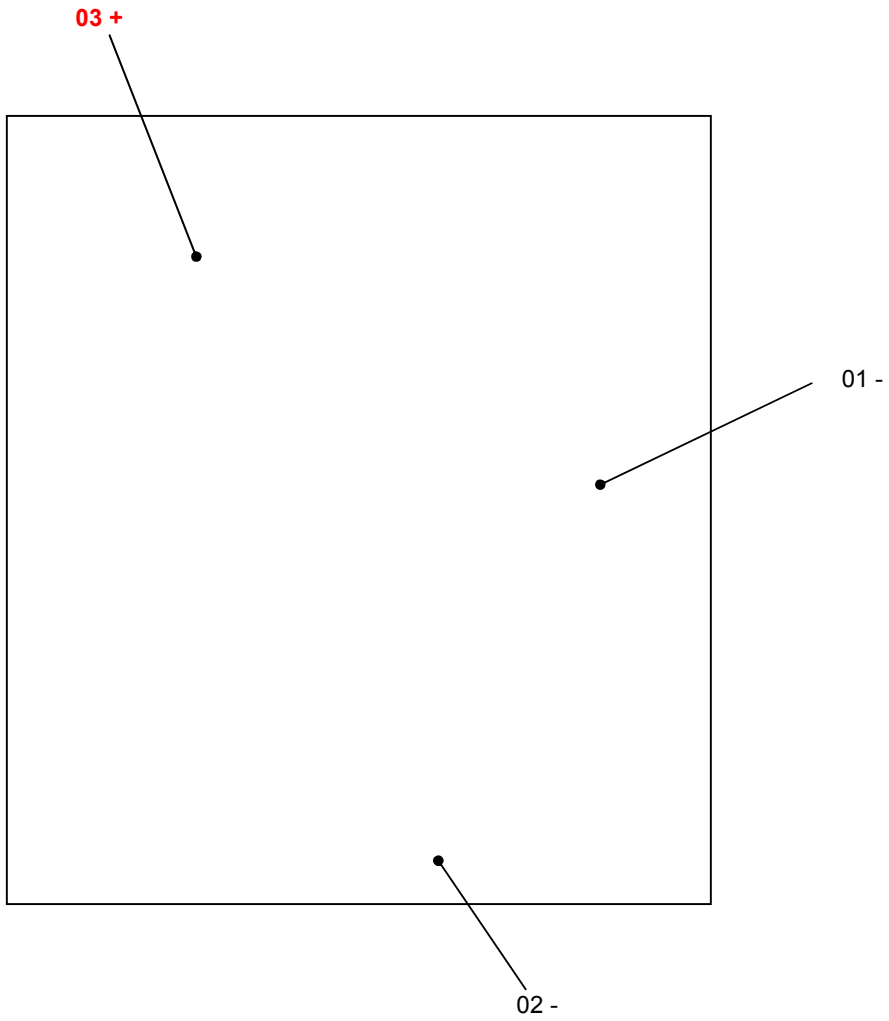


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #30 (Pipe Shed)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N

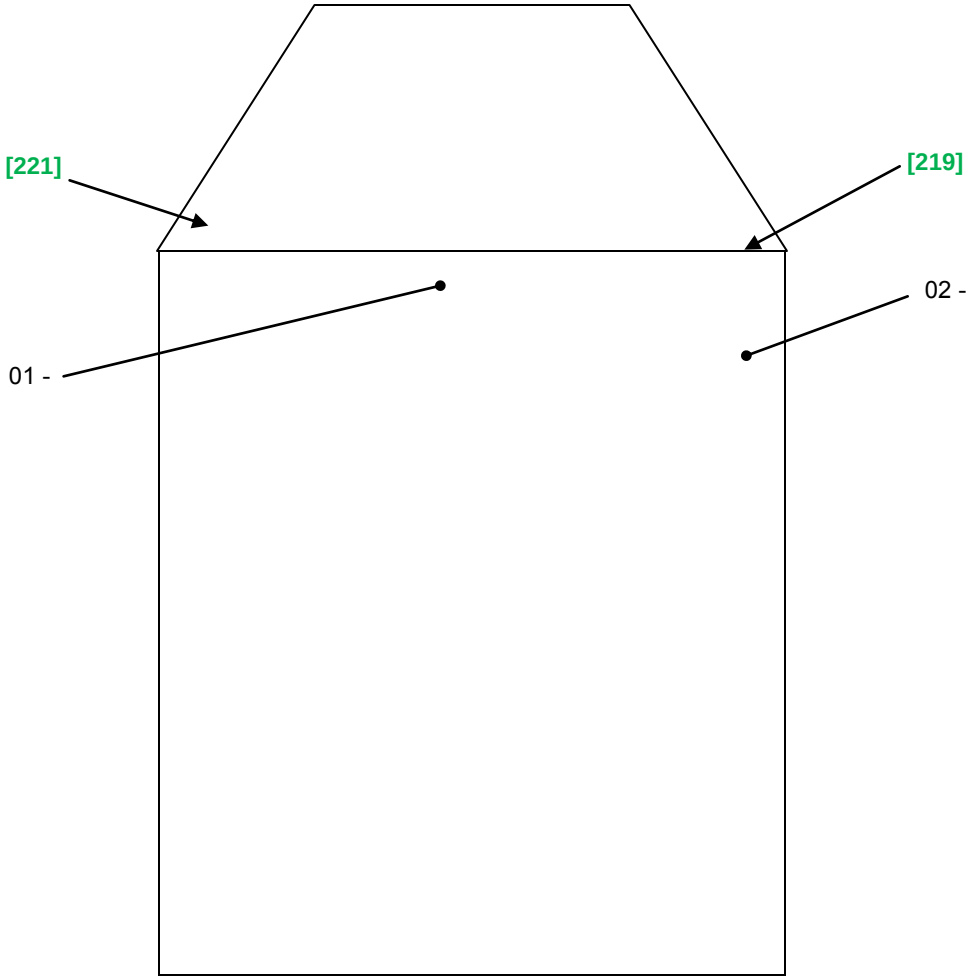


NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #31 (Utility Room)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
NOT TO SCALE

N



NOTE: Sample ID numbers are followed by a plus sign to indicate an ACM material or a minus sign to indicate a non-detect lab result or point count analysis resulting in <1% asbestos for that sample.

SAMPLE LOCATION DRAWING
Building #32 (Roof north of Lath Structure 8)
Raley's – 4700 Freeport Blvd., Sacramento, CA
FACS # PJ17924
October 24, 2012

LEGEND
Asbestos Bulk Sample Location: 01 -
Paint Chip Sample Location: [200]
NOT TO SCALE

N

Lath Houses (Screened Areas)

7. Will Call

ATTACHMENT III

SAMPLE RESULTS

Building 01 (North Greenhouse)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-1-101-01	Concrete	Foundation	ND	N/A	--

Total ACM by Category for Building 01: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 02 (Breezeway)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-2-101-01	Concrete	Slab	ND	N/A	--
17924-2-102-02	Brick Mortar	Slab	ND	N/A	--

Total ACM by Category for Building 02: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 03 (Old Cashier's Office)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-3-101-01, 02, 03	Plaster	Rooms #1 & 2	ND	N/A	--
17924-3-102-04, 05, 06	12" Blue floor tile with tan mastic	Room #1	ND	N/A	--
17924-3-103-07, 08, 09	**9" Green floor tiles with black mastic**	**Room #1**	**Tile - 5%** Mastic – ND	**Tile – 1** Mastic – N/A	**110 SF**
17924-3-104-10	Beige cove base mastic	Room #1 & 2	ND	N/A	--
17924-3-105-11, 12, 13	Stucco	Exterior	ND	N/A	--
17924-3-106-14	Grey Brick Mortar	Exterior	ND	N/A	--
17924-3-107-15	Window Glazing	Exterior	ND	N/A	--
17924-3-108-16, 17, 18	Composition roofing shingles with felt paper	Roof	ND	N/A	--
17924-3-109-19	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 03: Cat 1 = 110SF; Cat 2 = N/A; RACM = N/A

Building 04 (Garden Shop)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-4-100-01, 02, 03	**Wallboard/Joint compound**	**Rooms – 1 & 3**	**<1%* (composite)**	**N/A**	**1800 SF**
17924-4-101-04, 05, 06, 07 ,08	Plaster	Rooms – 1 & 2	ND	N/A	--
17924-4-102-09, 10, 11	12" Beige floor tiles with yellow mastic	Room – 1	Tile – ND Mastic – ND	Tile – N/A Mastic – N/A	--
17924-4-103-12, 13, 14	Grey floor tiles with **black mastic** (Under 12" beige floor tiles)	**Room – 1 – South Area**	Tile – ND **Mastic – 2%**	Tile – N/A **Mastic - 2**	**1400 SF**
17924-4-104-15, 16, 17	White floor tiles with **black mastic** (Under 12" beige floor tiles)	**Room – 1 – North Area**	Tile – ND **Mastic – 5%**	Tile – N/A **Mastic – 2**	**1300 SF**
17924-4-105-18	**9" White floor tile with black mastic**	**Room – 2**	**Tile – 2%** **Mastic – 5%**	**Tile – 1** **Mastic – 2**	**60 SF** **60 SF**
17924-4-106-19	White cove base mastic	Room – 1	ND	N/A	--
17924-4-107-20	Grey & White cove base mastic	Room – 1	ND	N/A	--
17924-4-108-21	12" spline ceiling tiles	Room – 4	ND	N/A	--
17924-4-109-22	Brown RSF – under carpet	Room – 4	ND	N/A	--
17924-4-110-23, 24, 25	Rolled composition roofing over fiberboard	North flat roof	ND	N/A	--
17924-4-111-26	**Black roof mastic (flashing)**	**North flat roof**	**10%**	**1**	**50 SF**
17924-4-112-27, 28, 29	Composition roofing shingles	South pitched roof	ND	N/A	--
17924-4-113-30	Black roof mastic (flashing)	South pitched roof	ND	N/A	--
17924-4-114-31, 32, 33, 34, 35	Stucco	Exterior	ND	N/A	--

Total ACM by Category for Building 04: Cat 1 = 110 SF; Cat 2 = 2760 SF; RACM = N/A
* - by point count analysis

Building 05 (Greenhouse Nursery)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-5-101-01	**Transite panels**	**Exterior wall skirt**	**20%**	**2**	**163 SF**
17924-5-102-02	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 05: Cat 1 = N/A; Cat 2 = 163 SF; RACM = N/A

Building 06 (Administration Office)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-6-101-01, 02, 03	12" Spline ceiling tiles	Throughout – except restrooms	ND	N/A	--
17924-6-102-04, 05, 06	**Wallboard/Joint compound**	**Rooms – 3, 5, 6**	**<1%* (composite)**	**N/A**	**820 SF**
17924-6-103-07	Wall paper	Room – 2	ND	N/A	--
17924-6-104-08, 09, 10	Plaster	Rooms – 1, 2, 4, 7, 8	ND	N/A	--
17924-6-105-11	Black mastic under fiberglass wall panels	Room – 2	ND	N/A	--
17924-6-106-12	Beige resilient sheet flooring	Rooms – 4, 5	ND	N/A	--
17924-6-107-13, 14, 15	**9" Grey floor tile with black mastic under all other floorings**	**Rooms – 1, 2, 3, 4, 5, 6**	**Tile – 5% Mastic – 5%**	**Tile – 1 Mastic – 2**	**1440 SF 1440 SF**
17924-6-108-16	12" Brown floor tile with tan mastic	Room – 6	ND	N/A	--
17924-6-109-17	Grey resilient sheet flooring with brown mastic	Room – 7	ND	N/A	--
17924-6-110-18	Grey resilient sheet flooring with tan mastic	Room – 8	ND	N/A	--
17924-6-111-19	Gray window glazing	Exterior – East side	ND	N/A	--
17924-6-112-20, 21, 22	Stucco	Exterior – West addition	ND	N/A	--
17924-6-113-23, 24, 25, 26, 27	Stucco	Exterior – Original building Interior – West wall – rooms – 3, 5, 6, 12	ND	N/A	--
17924-6-114-28, 29, 30	Composition roofing shingles	Roof – East side – Original building	ND	N/A	--
17924-6-115-31, 32, 33	Rolled composition roofing	Roof – West side – addition	ND	N/A	--
17924-6-116-34	**Black roof mastic**	**Roof – Penetrations and flashings – West addition**	**10%**	**1**	**10 SF**
17924-6-117-35	Concrete	Slab	ND	N/A	--
17924-6-118-36	Beige wall panel adhesive	Room – 9	ND	N/A	--
17924-6-119-37	Tan wall panel adhesive	Room – 11	ND	N/A	--
17924-6-120-38, 39	Plaster	Room s- 8, 11	ND	N/A	--

Total ACM by Category for Building 06: Cat 1 = 1450 SF; Cat 2 = 1440 SF; RACM = N/A
* - by point count analysis

Building 07 (Landscape Office)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-7-100-01, 02, 03, 04, 05	**Spray applied acoustical material**	**Rooms – 1, 2, 3, 4, 14**	**5%**	**F**	**1070 SF**
17924-7-101-06, 07, 08, 09, 10	**Orange peel wall texture**	**Rooms – 1, 2, 3, 4, 14**	**2%**	**F**	**1900 SF**
17924-7-102-11	Wallpaper with adhesive	Room – 14	ND	N/A	--
17924-7-103-12, 13, 14	**Wallboard w/ joint compound**	**Rooms – 1, 2, 3, 4, 14**	WB – ND **JC – 2%**	WB – N/A **JC – 2**	**1900 SF**
17924-7-104-15	Fiberboard wall panel	Room – 3	ND	N/A	--
17924-7-105-16	**Brown baseboard mastic**	**Rooms – 2, 3, 4, 14**	**Trace**	**2**	**36 SF**
17924-7-106-17, 18, 19	**12" Brown floor tile with yellow mastic**	**Room – 2 &11**	**Tile – 2%** Mastic – ND	**Tile – 1** Mastic – N/A	**430 SF**
17924-7-107-20	12" Press-on floor tile with clear mastic	Room – 12, 13	ND	N/A	--
17924-7-108-21	Grey floor backing with yellow mastic	Room – 4	ND	N/A	--
17924-7-109-22	Brown baseboard mastic	Rooms – 12, 13	ND	N/A	--
17924-7-110-23	Yellow carpet adhesive	Rooms – 2, 3, 5, 6, 7, 8, 9	ND	N/A	--
17924-7-111-24	Brown wallpaper on fiberboard	Rooms – 5, 6, 7, 8	ND	N/A	--
17924-7-112-25, 26, 27	Joint compound only – on fiberboard	Rooms – 5, 6, 7, 8	ND	N/A	--
17924-7-113-28	Rust wallpaper on fiberboard	Rooms – 5, 6, 7, 8	ND	N/A	--
17924-7-114-29, 30, 31, 32, 33	Wall texture – Skip trowel	Rooms – 5, 6, 7, 8, 9, 10, 11	ND	N/A	--
17924-7-115-34, 35, 36	Wallboard with joint compound	Rooms – 5, 6, 7, 8, 9, 10, 11	ND	N/A	--
17924-7-116-37, 38, 39	Rolled composition roofing over fiberboard on wood	Roof	ND	N/A	--
17924-7-117-40	Black penetration mastic	Roof	ND	N/A	--
17924-7-118-41	Grey/black flashing mastic	Roof	ND	N/A	--
17924-7-119-42	Grey HVAC duct paper	Exterior	ND	N/A	--
17924-7-120-43	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 07: Cat 1 = 430 SF; Cat 2 = 1936 SF; RACM = 2970 SF

Building 08 (Warehouse)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-8-101-01	Concrete	Slab	ND	N/A	--
17924-8-102-02	Window glazing	Exterior	ND	N/A	--

Total ACM by Category for Building 08: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 09 (Old Bulb Storage)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-9-101-01	Concrete	Slab	ND	N/A	--
17924-8-102-02, 03, 04	Composite roofing shingles	Roof	ND	N/A	--

Total ACM by Category for Building 09: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 10 (Inventory Control Room)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-10-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 10: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 11 (Old Employee Break Room)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-11-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 11: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 12 (Employee Lunch Room)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-12-101-01, 02, 03, 04, 05	Wall texture – skip trowel	Throughout	ND	N/A	--
17924-12-102-06, 07, 08	Wallboard with Joint compound	Throughout	ND	N/A	--
17924-12-103-09	Tan baseboard mastic	Throughout	ND	N/A	--
17924-12-104-10	Concrete	Slab	ND	N/A	--
17924-12-105-11, 12, 13	Composition roofing shingles	Roof	ND	N/A	--

Total ACM by Category for Building 12: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 13 (Repotting Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-13-101-01	Concrete blocks	Throughout	ND	N/A	--
17924-13-102-02	Mortar for concrete blocks	Throughout	ND	N/A	--
17924-13-103-03	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 13: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 14 (Southeast Greenhouse)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-14-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 14: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 15 (Central South Greenhouse)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-15-101-01	Concrete	Walkway	ND	N/A	--
17924-15-102-02	Concrete block wall (skirt)	Exterior walls	ND	N/A	--
17924-15-103-03	Concrete block wall mortar (skirt)	Exterior walls	ND	N/A	--

Total ACM by Category for Building 15: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 16 (Southwest Greenhouse)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-16-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 16: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 17 (Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-17-101-01	Concrete – pier blocks	Foundation	ND	N/A	--

Total ACM by Category for Building 17: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 18 (Hydraulic Lift Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-18-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 18: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 19 (Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-19-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 19: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 20 (Lawn Mower Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-20-101-01	Concrete	Piers	ND	N/A	--

Total ACM by Category for Building 20: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 21 (Compost/Bark/Soil/Aggregate Stations)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-21-101-01	Concrete block wall	Exterior	ND	N/A	--
17924-21-102-02	Concrete block wall mortar	Exterior	ND	N/A	--
17924-21-103-03	Concrete	Slab	ND	N/A	--
17924-21-103-04	Concrete adhesive (beige)	Exterior (wall)	ND	N/A	--

Total ACM by Category for Building 21: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 22 (Octagon)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-22-101-01, 02, 03	**Rolled composition roofing with felt paper**	**Roof**	**40%**	**1**	**1200 SF**
17924-22-102-04	**Black mastic**	**Roof**	**5%**	**1**	**30 SF**
17924-22-103-05	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 22: Cat 1 = 1230 SF; Cat 2 = N/A; RACM = N/A

Building 23 (Gazebo)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-23-101-01, 02, 03	Roof Felt	Roof	ND	N/A	--
17924-23-102-04	Cement	Foundation	ND	N/A	--

Total ACM by Category for Building 23: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 24 (North Tool Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-24-101-01, 02, 03	Black rolled roofing	Roof	ND	N/A	--
17924-24-102-04	Cement	Slab	ND	N/A	--
17924-24-103-05	Roof Mastic	Roof	ND	N/A	--

Total ACM by Category for Building 24: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 25 (South Tool Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-25-101-01, 02, 03	Rolled Roofing	Roof	ND	N/A	--

Total ACM by Category for Building 25: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 26 (Gas Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-26-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 26: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 27 (Oil Shed)

No suspect materials identified. This shed shared a wall with the repotting shed.
Total ACM by Category for Building 27: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 28 (Fertilizer Mixing Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-28-101-01	Concrete	Slab	ND	N/A	--
17924-28-102-02, 03, 04	Rolled roofing	Roof (Under fiberglass roof panels)	ND	N/A	--

Total ACM by Category for Building 28: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 29 (Greenhouse Office)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-29-101-01	**Brown sheet flooring with paper backing**	**Floor**	Flooring – ND **Backing – 70%**	N/A **RACM**	**50 sf**
17924-29-102-02	Brown cove base mastic	Walls at the floor	ND	N/A	--

Total ACM by Category for Building 29: Cat 1 = N/A; Cat 2 = N/A; RACM = 50 SF

Building 30 (Pipe Shed)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-30-101-01	Concrete	Slab	ND	N/A	--

Total ACM by Category for Building 30: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Building 31 (Utility Room)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-31-101-01	12” OD pipe insulation	Debris, Utility Room	ND	N/A	--
17924-31-102-02	Concrete	Slab	ND	N/A	--
17924-31-103-03	**Roof Mastic**	**Roof Penetrations**	**5%**	**1**	**10 sf**

Total ACM by Category for Building 31: Cat 1 = 10SF; Cat 2 = N/A; RACM = N/A

Building 32 (Roof adjacent to Lath Structure 8)

Sample ID	Suspect Material	Material Location	Asbestos Content	EPA Category*	Quantity
17924-32-101-01	Concrete	Walkway	ND	N/A	--
17924-32-102-02	Asphalt	Walkway	ND	N/A	--

Total ACM by Category for Building 32: Cat 1 = N/A; Cat 2 = N/A; RACM = N/A

Lath Houses 1-8 (Shade structures for plants)

No suspect materials were identified. Please see location drawing on the following page.

ATTACHMENT IV

LAB RESULTS AND CHAIN-OF-CUSTODY DOCUMENTS

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169239
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/15/12
First Reported: 10/15/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/08/2012

FALI Job ID: SAC02
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-1-101-01	11306276						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 1

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/8/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLDG # 1	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924 - 1 - 101 - 01	CONCRETE	BLDG #1 NORTH GREEN HOUSE CONCRETE FOUNDATION (GREEN HOUSE REMOVED)	N/o	G	32 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlin Chinn	*Date & Time:* 10/8/12	*Received by:* Nelia Lopez FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169235
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #2

Date(s) Collected: 10/08/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-2-101-01	11306262						
Layer: Beige Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-2-102-02	11306263						
Layer: White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/8/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bulk # 2	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-2-101-01	CONCRETE	BULK #2 - BREEZEWAY N/E SLAB	N	G	2400 SF
↓ 102-02	BULK MORTAR	↓ S/E	↓	↓	240 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calvin Lujan	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 10:30am Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169057
Date Received: 10/08/12
Date Analyzed: 10/11/12
Date Printed: 10/12/12
First Reported: 10/11/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 19
Total Samples Analyzed: 19

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-3-101-01	11304983						
Layer: Light Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-101-02	11304984						
Layer: Light Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-101-03	11304985						
Layer: Light Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-102-04	11304986						
Layer: Blue Tile			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-102-05	11304987						
Layer: Blue Tile			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-102-06	11304988						
Layer: Blue Tile			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169057

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/12/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-3-103-07	11304989						
Layer: Green Tile		Chrysotile	**5 %**				
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (5%)**					
17924-3-103-08	11304990						
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
Comment: Additional layers were present, but only this layer was analyzed by client request.							
17924-3-103-09	11304991						
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
Comment: Additional layers were present, but only this layer was analyzed by client request.							
17924-3-104-10	11304992						
Layer: Beige Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-105-11	11304993						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-105-12	11304994						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-105-13	11304995						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-106-14	11304996						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-3-107-15	11304997						
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B169057

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/12/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-3-108-16	11304998						
Layer: White Roof Shingle			**ND**				
Layer: Grey Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
17924-3-108-17	11304999						
Layer: White Roof Shingle			**ND**				
Layer: Grey Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
17924-3-108-18	11305000						
Layer: White Roof Shingle			**ND**				
Layer: Grey Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
17924-3-109-19	11305001						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CALIN MINEA PM: Jonathan Curtis	Date: 10/5/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLDG # 3	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-3-101-01	PLASTER (GRAY)	Room #1	N	G	500 SF
-02		Room #1	↓	↓	-
↓03		Room #2	↓	↓	-
102-04	12X12" FT BLUE & MASTIC (BEIGE)	Room #1	N	F	110 SF
-05	↓	↓	↓	↓	↓
↓-06	↓	↓	↓	↓	↓
103-07	9X9" FT GREEN & MASTIC (BLACK)	Room #1	N	F	110 SF
-08	↓	↓	↓	↓	↓
↓-09	↓	↓	↓	↓	↓
104-10	3" COVE BASE GLUE (BEIGE)	Room #1	N	G	30 LF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Minea	*Date & Time:* 10/5/12	*Received by:* Nellie Beaty FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CALIN MIREA PM: Jonathan Curtis	Date: 10/5/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions: E-mail results to sac@forensicanalytical.com	
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLDG. #3	Turnaround Time: 1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐	Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis: ☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive	

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-3-105-1	EXT. STUCCO (GRAY)	BLDG. EXTERIOR S.	N	G	440 SF
-12	↓	W.	↓	↓	—
-13	↓	N.	↓	↓	—
106-14	BRICK MORTAR (GRAY)	BLDG EXTERIOR S/E	N	G	100 SF
107-15	WINDOW CAULKING (GRAY)	EXT. WINDOW E CENTER	↓	P	20 SF
108-16	ROOF COMP - SHINGLE SHEET ROOF (Bldg)	S/E	N	G	400 S.F.
-17	↓	N/W	↓	↓	—
-18	↓	N/E	↓	↓	—
109-19	CONCRETE	SLAB S. CENTER	N	G	200 S.F.

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea 10/5/12	*Date & Time:* 10/5/12	*Received by:* FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Amended Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169218
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/19/12
First Reported: 10/19/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #4

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 35
Total Samples Analyzed: 31

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-100-01	11306197						
Layer: White Drywall			**ND**				
Layer: Off-White Tape			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-4-100-02	11306198						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Off-White Tape			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-4-100-03	11306199						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Off-White Tape			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-4-101-04	11306200						
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-101-05	11306201						
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169218

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-101-06	11306202						
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-101-07	11306203						
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-101-08	11306204						
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-102-09	11306205						
Layer: Off-White Tile			**ND**				
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-102-10	11306206						
Layer: Off-White Tile			**ND**				
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-102-11	11306207						
Layer: Off-White Tile			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-103-12	11306208						
Layer: Tan Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic		Chrysotile	**2 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17924-4-103-13	11306209						
Comment: Sample not analyzed due to prior positive result in series.							
17924-4-103-14	11306210						
Comment: Sample not analyzed due to prior positive result in series.							

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169218

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-104-15	11306211						
Layer: Tan Mastic			**ND**				
Layer: White Tile			**ND**				
Layer: Black Mastic		Chrysotile	**5 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17924-4-104-16	11306212						
Comment: Sample not analyzed due to prior positive result in series.							
17924-4-104-17	11306213						
Comment: Sample not analyzed due to prior positive result in series.							
17924-4-105-18	11306214						
Layer: White Tile		Chrysotile	**2 %**				
Layer: Black Mastic		Chrysotile	**5 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (2%)**					
17924-4-106-19	11306215						
Layer: White Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-107-20	11306216						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: White Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-108-21	11306217						
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-4-109-22	11306218						
Layer: Brown Sheet Flooring			**ND**				
Layer: Tan Foam			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Fibrous Glass (5 %)		**Asbestos (ND)**					

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Report Number: B169218

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-110-23	11306219						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-4-110-24	11306220						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-4-110-25	11306221						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							

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Report Number: B169218
Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-111-26	11306222						
Layer: Black Mastic		Chrysotile	**10 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (10%)**					
17924-4-112-27	11306223						
Layer: Black Roof Shingle			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (35 %)		**Asbestos (ND)**					
17924-4-112-28	11306224						
Layer: Green Roof Shingle			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (35 %)		**Asbestos (ND)**					
17924-4-112-29	11306225						
Layer: Green Roof Shingle			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (35 %)		**Asbestos (ND)**					
17924-4-113-30	11306226						
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (15 %) Synthetic (5 %)		**Asbestos (ND)**					
17924-4-114-31	11306227						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-114-32	11306228						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-114-33	11306229						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B169218

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-4-114-34	11306230						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-4-114-35	11306231						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004921
Date Received: 10/11/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #4
PLM Report Number: B169218

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-4-100-01	11306197	**Composite of ALL Layers** White Drywall Off-White Tape Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-421

Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004921
Date Received: 10/11/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #4
PLM Report Number: B169218

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-4-100-02	11306198	**Composite of ALL Layers** White Drywall Off-White Joint Compound Off-White Tape Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-421

Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004921
Date Received: 10/11/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #4
PLM Report Number: B169218

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-4-100-03	11306199	**Composite of ALL Layers** White Drywall Off-White Joint Compound Off-White Tape Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

Note: Point count results are reported to the nearest percent per EPA method.

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-421

Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** Bldg. #4 **Sacramento CA 95822**	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-4-100-01	WB/JC	Room 1 S/E	N	G	18005F
-02		Room 1 S/W			—
-03		Room 3 N/E			—
-101-04	PLASTER	Room 1 S. AREA N/E	Y	G	23335F
05		Room 1 S/E			—
06		Room 1 S/W			—
07		Room 1 N/W			—
08		Room 2 S/E			—
102-09	12x12 VFT Beige & Yellow Mastic	Room 1 S/E (South Area)	N	G	3860
-10		S/W (South Area)			—

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlos Mireles	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 10:30am FIC Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLAC #4	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-4-102-11	12x12" VAT BEIGE → YELLOW MASTIC	Room 1 N. AREA	N	G	—
103-12	FLOOR TILE GRAY & Black MASTIC	Room 1 SOUTH AREA S/E	N	G	1400 SF
-13	UNDER 12x12" VAT BEIGE (102)	S/W	↓	↓	—
-14	↓	N/W	↓	↓	—
104-15	FLOOR TILE WHITE W/	Room 1 NORTH AREA S/W	N	G	1300 SF
16	Black MASTIC UNDER FT (102)	N/W	↓	↓	—
17	↓	N/E	↓	↓	—
105-18	9x9" FT & Black MASTIC	Room #2 S. CENTER	N	G	60 SF
106-19	BBM 3" WHITE	Room 1 S. AREA S/W	N	G	160 LF
107-20	BBM - 4" GRAY	Room 1 N. AREA N/W	N	G	130 LF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Clifton	*Date & Time:* 10/8/12	*Received by:* Signature	*Date & Time:* 10/9/12 1030 - CR Condition Acceptable ☐ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/8/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bldg #4	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-4 (08-21	12"x12" CT BROWN W/WHITE PAINT	Room #4 CEILING	N	P	70 SF.
4-109-22	RSF BROWN-MOTTLED PATTERN	Room #4 - UNDER CARPET	N	G	70 SF
4-110-23	ROLLED ROOF BLACK & FIBER BOARD INS. BROWN	ROOF NORTH SIDE - FLAT ROOF N/W	N	G	1500SF
24	↓	S/W	↓	↓	—
25	↓	N/E	↓	↓	—
111-26	ROOF MASTIC BLACK	ROOF FLASHINGS - NORTH SIDE N/W	N	G	50SF
112-27	ROOF COMPOSITION SHINGLES	ROOF SOUTH SIDE - PITCH ROOF S/W	N	P	1800SF
28	↓	S/E	↓	↓	—
29	↓	N/E	↓	↓	—
113-30	ROOF MASTIC BLACK	ROOF FLASHINGS SOUTH SIDE S/E	N	P	30 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: CHRIS CHILDERS	*Date & Time:* 10/8/12	*Received by:*	*Date & Time:* 10/9/12 1030 FK Condition Acceptable ☐ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BLK #4	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: STOP @ FIRST POSITIVE

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-4-114-31	STUCCO	BLDG. EXTERIOR — WALLS S/W	Y	G	20005F
32		W. CENTER			—
33		N. CENTER			—
34		N/E			—
35		E. CENTER			—

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: [signature]	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 1030 am FK Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169219
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #5

Date(s) Collected: 10/08/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-5-101-01	11306232						
Layer: Grey Semi-Fibrous Material		Chrysotile	**20 %**				
Total Composite Values of Fibrous Components:		**Asbestos (20%)**					
17924-5-102-02	11306233						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/11
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLOCK 5	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** FACS Job #: **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-5-101-01	TRANSITE PANEL	BLDG #5 GREEN HOUSE NURSERY S/W	N	G	163 SF
↓		WALL SKIRT ↓			
↓ 102-02	CONCRETE	SLAB N/W	Y	G	180 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlos Linares	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 1030 Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169045
Date Received: 10/08/12
Date Analyzed: 10/10/12
Date Printed: 10/19/12
First Reported: 10/19/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/04/2012

FALI Job ID: SAC02
Total Samples Submitted: 39
Total Samples Analyzed: 37

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-101-01	11304846						
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-6-101-02	11304847						
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-6-101-03	11304848						
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-6-102-04	11304849						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Fibrous Material			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-6-102-05	11304850						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Fibrous Material			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169045
Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-102-06	11304851						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Fibrous Material			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-6-103-07	11304852						
Layer: White Woven Material			**ND**				
Layer: Off-White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Fibrous Glass (80 %)		**Asbestos (ND)**					
17924-6-104-08	11304853						
Layer: Grey Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-104-09	11304854						
Layer: Grey Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-104-10	11304855						
Layer: Grey Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-105-11	11304856						
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-106-12	11304857						
Layer: Tan Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)		**Asbestos (ND)**					

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Report Number: B169045

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-107-13	11304858						
Layer: Beige Tile		Chrysotile	**2 %**				
Layer: Black Mastic		Chrysotile	**2 %**				
Total Composite Values of Fibrous Components: **Asbestos (2%)**							
Cellulose (Trace)							
17924-6-107-14	11304859						
Comment: Sample not analyzed due to prior positive result in series.							
17924-6-107-15	11304860						
Comment: Sample not analyzed due to prior positive result in series.							
17924-6-108-16	11304861						
Layer: Light Brown Tile			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (Trace)							
17924-6-109-17	11304862						
Layer: White Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)							
17924-6-110-18	11304863						
Layer: White Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)							
17924-6-111-19	11304864						
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (Trace)							
17924-6-112-20	11304865						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (Trace)							
17924-6-112-21	11304866						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (Trace)							

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Report Number: B169045

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-112-22	11304867						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-113-23	11304868						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-113-24	11304869						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-113-25	11304870						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-113-26	11304871						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-113-27	11304872						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-114-28	11304873						
Layer: Grey Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (50 %)		**Asbestos (ND)**					
17924-6-114-29	11304874						
Layer: Green Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (55 %) Fibrous Glass (10 %)		**Asbestos (ND)**					

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Report Number: B169045
Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-114-30	11304875						
Layer: Green Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (55 %) Fibrous Glass (10 %)		**Asbestos (ND)**					
17924-6-115-31	11304876						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (7 %) Fibrous Glass (45 %)		**Asbestos (ND)**					
17924-6-115-32	11304877						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (7 %) Fibrous Glass (45 %)		**Asbestos (ND)**					
17924-6-115-33	11304878						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (7 %) Fibrous Glass (45 %)		**Asbestos (ND)**					
17924-6-116-34	11304879						
Layer: Black Mastic		Chrysotile	**10 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (10%)**					
17924-6-117-35	11304880						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-118-36	11304881						
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-119-37	11304882						
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-6-104-38	11304883						
Layer: Beige Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B169045

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/19/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-6-104-39	11304884						
Layer: Grey Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004922
Date Received: 10/08/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

PLM Report Number: B169045

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-6-102-04	11304849	**Composite of ALL Layers** White Drywall Off-White Joint Compound White Fibrous Material Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-421

Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004922
Date Received: 10/08/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

PLM Report Number: B169045

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-6-102-05	11304850	**Composite of ALL Layers** White Drywall Off-White Joint Compound White Fibrous Material Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

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Bulk Asbestos Point Count Analysis

(NESHAP Final Rule, 40 CFR, Part 61)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: N004922
Date Received: 10/08/12
Date Analyzed: 10/22/12
Date Printed: 10/22/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

FALI Job ID: SAC02
Total Samples Submitted: 3
Total Samples Analyzed: 3

PLM Report Number: B169045

Sample Preparation and Analysis:

The NESHAP Final Rule does not define the preparation method for multi-layered samples. In order to determine the composite quantity of asbestos, the volume percent of each layer is determined, the asbestos containing layers are analyzed by point counting and the composite quantity of asbestos is calculated. The NESHAP Final Rule can not be applied to matrices that dissolve in refractive index liquid. This includes tar, mastic or adhesive typically found on the back of floor tiles. According to the NESHAP Final Rule, point count data is only necessary when the visual estimate of asbestos is below 10%.

Sample ID	Lab Number	Layer Description
17924-6-102-06	11304851	**Composite of ALL Layers** White Drywall Off-White Joint Compound White Fibrous Material Off-White Joint Compound Paint

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 1

Asbestos type(s) detected: Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 1%.

Note: Point count results are reported to the nearest percent per EPA method.

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

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Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: JMR/CM	PM: **Jonathan Curtis** Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BULK #6	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-6-101-01	12"x12" CT (SPLINE)	Room # - 1	N	G	1440 S.F.
02	↓	- 3	↓	↓	-
03	↓	- 4	↓	↓	-
-102-04	WB/JC.	Room # - 3	N	G	820 SF
05	↓	- 5	↓	↓	-
06	↓	- 6	↓	↓	-
-103-07	WALL PAPER (WALL TEXTURE PATTERN)	Room # - 2	N	G	320 SF
-104-08	PLASTER	Room # - 1	Y	G	1640 SF
09	↓	- 4	↓	↓	-
10	↓	- 7	↓	↓	-

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Callie Cuevas	*Date & Time:* 10/5/12	*Received by:* Debbie Kelly FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: JMR / CM	PM: Jonathan Curtis Date: 10/4/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLDG. #6	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-6-105-11	BLACK MASTIC UNDER FIBERGLASS WALL PANEL	Room # - 2	N	G	320 SF
106-12	RSF MOZAIC PATTERN BEIGE/GRAY	Room # - 5	↓	F	200 SF
107-13	9"x9" FT GRAY & BLACK MASTIC	Room # - 2 UNDER CARPET	↓	G	1440 SF
-14	↓	- 4 UNDER CARPET	↓	↓	-
-15	↓	- 5 UNDER SHEET FLOORING	↓	↓	-
108-16	12"x12" FT BROWN & MASTIC TAN	Room # - 6	↓	G	45 SF
109-17	RSF 2"x2" PATTERN GRAY / BACKING PAPER GRAY / ADH. BROWN	Room # - 7 - EXEC RR	↓	F	24 SF
110-18	RSF GRAY / BACKING PAPER GRAY ADHESIVE TAN	Room # - 8 - LADIES RR	↓	F	24 SF
111-19	WINDOW GLAZING GRAY	BLDG. EXT. E. SIDE	↓	F	90 SF
112-20	EXTERIOR STUCCO	W. SIDE ADDITION EXT. WALL S/W	↓	G	810 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture
Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlin Cline	*Date & Time:* 10/5/12	*Received by:* [signature] FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: JMR/CM	PM: **Jonathan Curtis** Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BWC-#6	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-6-112-21	EXTERIOR STUCCO	W. SIDE ADDITION EXT. WALL W. CENTER	N	G	-
↓ -22	↓	↓ EXT WALL N/W			-
-113-23	EXTERIOR STUCCO	E. SIDE OF STRUCTURE EXT. WALL N/E			1740SF
-24		E.			-
-25		N.			-
-26		S/E			-
↓ -27		↓ S.		↓	-
-114-28	COMPOSITION ROOF SHINGLES (BLACK)	ROOF, E. SIDE STRUCTURE N/E		P	1600SF
-29		E.			-
↓ -30	↓	S/E	↓	↓	-

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Lipsa	*Date & Time:* 10/5/12	*Received by:* Nelia Yam FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: JMR/CM	PM: **Jonathan Curtis** Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG. #6	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-6-115-31	ROLLED ROOF (BLACK)	W. SIDE ADDITION - S/W	N	G	1100SF
32	↓	W	↓	↓	-
33	↓	N/W	↓	↓	-
116-34	ROOF MASTIC	ROOF PENETR/FLASHINGS. S/W	↓	↓	10SF
117-35	CONCRETE	SLAB BLDG S/W - ADJ TO W. RR	↓	↓	2700SF
118-36	WALL PANEL ADHESIVE (BEIGE)	RM #9 - MEN'S RR	N	G	120 SF
119-37	WALL PANEL ADHESIVE (TAN)	RM #11 - LADIES RR	↓	↓	90 S.F.
104-38	PLASTER	RM # 8 - LADIES RR	Y	G	-
↓ -39	↓	RM # 11 LADIES RR	↓	↓	-

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Lirea	*Date & Time:* 10/5/12	*Received by:* Nellie Lam FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169043
Date Received: 10/08/12
Date Analyzed: 10/11/12
Date Printed: 10/11/12
First Reported: 10/11/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/04/2012

FALI Job ID: SAC02
Total Samples Submitted: 43
Total Samples Analyzed: 32

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-100-01	11304803						
Layer: Off-White Semi-Fibrous Material		Chrysotile	**5 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (5%)**							
Cellulose (Trace)							
17924-7-100-02	11304804						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-100-03	11304805						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-100-04	11304806						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-100-05	11304807						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-101-06	11304808						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (Trace)							
17924-7-101-07	11304809						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (2%)**							
Cellulose (Trace)							
17924-7-101-08	11304810						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-101-09	11304811						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-101-10	11304812						
Comment: Sample not analyzed due to prior positive result in series.							

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169043

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-102-11	11304813						
Layer: Off-White/Blue Semi-Fibrous Material			**ND**				
Layer: White Adhesive			**ND**				
Total Composite Values of Fibrous Components: Cellulose (50 %)		**Asbestos (ND)**					
17924-7-103-12	11304814						
Layer: White Drywall			**ND**				
Layer: White Joint Compound		Chrysotile	**2 %**				
Layer: White Tape			**ND**				
Layer: White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (Trace)**					
17924-7-103-13	11304815						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-103-14	11304816						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-104-15	11304817						
Layer: Tan Fibrous Material			**ND**				
Layer: Beige Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (40 %) Synthetic (50 %)		**Asbestos (ND)**					
17924-7-105-16	11304818						
Layer: Brown Mastic		Anthophyllite	**Trace**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (3 %)		**Asbestos (Trace)**					
17924-7-106-17	11304819						
Layer: Brown Tile		Chrysotile	**2 %**				
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (2%)**					
17924-7-106-18	11304820						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-106-19	11304821						
Comment: Sample not analyzed due to prior positive result in series.							
17924-7-107-20	11304822						
Layer: Tan Tile			**ND**				
Layer: Clear Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B169043

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-108-21	11304823						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-109-22	11304824						
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (2 %)		**Asbestos (ND)**					
17924-7-110-23	11304825						
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Synthetic (Trace)		**Asbestos (ND)**					
17924-7-111-24	11304826						
Layer: Tan Fibrous Material			**ND**				
Layer: Orange Woven Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-7-112-25	11304827						
Layer: White Joint Compound			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-112-26	11304828						
Layer: White Joint Compound			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-112-27	11304829						
Layer: White Joint Compound			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-113-28	11304830						
Layer: Tan Fibrous Material			**ND**				
Layer: Orange Woven Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-7-114-29	11304831						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B169043

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-114-30	11304832						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-114-31	11304833						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-114-32	11304834						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-114-33	11304835						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-7-115-34	11304836						
Layer: White Drywall			**ND**				
Layer: White Joint Compound			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					
17924-7-115-35	11304837						
Layer: White Drywall			**ND**				
Layer: White Joint Compound			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					
17924-7-115-36	11304838						
Layer: White Drywall			**ND**				
Layer: White Joint Compound			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					

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Report Number: B169043

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-116-37	11304839						
Layer: White Paint			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Yellow Foam			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-7-116-38	11304840						
Layer: White Paint			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Yellow Foam			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-7-116-39	11304841						
Layer: White Paint			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Yellow Foam			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (5 %) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-7-117-40	11304842						
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (15 %) Synthetic (5 %)							

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Report Number: B169043

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-7-118-41	11304843						
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (15 %) Synthetic (5 %)		**Asbestos (ND)**					
17924-7-119-42	11304844						
Layer: Grey Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17924-7-120-43	11304845						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: Smith/Cm	PM: Jonathan Curtis Date: 10/4/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bldg #7	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-7-100-01	SAAM	Room # - 1	Y	G	1,000 sf
-02		- 2			-
-03		- 3			-
-04		- 4			-
-05		- 14			-
-101-06	Wall Texture - Orange Peel	- 1	Y	G	1,900 sf
-101-07		- 2			-
-08		- 3			-
-09		- 4			-
-10		- 14			-

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Noel Jong FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☑ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: Smith CM	PM: **Jonathan Curtis** Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** Bldg #7	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-7-102-11	Wall Paper w/ Adhesive	Room # 1	N	G	275 SF
-103-12	WB/SC w/ Texture	- 2	N	G	
-13	↓	- 2	↓	↓	—
-14	↓	- 4	↓	↓	—
-104-15	Fiber board Wall Board	- 3 - South wall	N	G	120 SF
-105-16	Brown BBM	- 2	N	G	36 SF
-106-17	12" Brown FT w/ Yellow Mast	- 2 @ Entry	N	G	430 SF
-18	↓	- 2	↓	↓	—
-19	↓	- 11	↓	↓	—
-107-20	12" Press-on FT w/ Clear Mastic	- 13	N	G	50 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Nellie Long FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: Sample/cm PM: **Jonathan Curtis**	Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** Bldg #7	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17424-7-108-21	Gray Brown Floor Mastic	Room # - 4	Y	P	85 ft
-109-22	Brown BBM	- 13	N	G	12 ft
-110-23	Carpet Adhesive-Yellow	- 2	N	G	
-111-24	Brown Wall Paper on Fiberboard	- 5	N	G	
-112-25	JC only	- 5	Y	G	200 ft
-26	↓	- 5	↓	↓	—
-27	↓	- 6	↓	↓	—
-113-28	Rust Colored Wallpaper	- 5	N	G	320 ft
-114-29	WT - Skip Trowel	- 5	Y	G	3225 ft
-30	↓	- 6	↓	↓	—

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Debbie Kop FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical
ENVIRONMENTAL HEALTH CONSULTANTS

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: SMR/CM PM: **Jonathan Curtis** Date: 10/4/12	
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions: E-mail results to sac@forensicanalytical.com	
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** Bldg #7	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-7-114-31	WT - Skip Trowel	Room # - 7	Y	G	—
-32	↓	- 8 - Ceiling	↓	↓	—
-33	↓	- 11 -	↓	↓	-
-115-34	WB/SC	- 11	N	G	2,225 SF
-35	↓	- 9	↓	↓	—
-36	↓	- 10	↓	↓	—
-116-37	Rolled Compound from Roofing	- Roof	N	G	3925 SF
-38	or Foam Board on Wood	-	↓	↓	—
-39	↓	-	↓	↓	—
-117-40	Black Penetration/Flashing Mastic	↓	N	G	10 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Alexis Hoag FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: Smp/cm	PM: **Jonathan Curtis** Date: 10/4/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** Bldg #7	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-7-118-41	Gray/Black Flashing Mastic	Roof - South Side	N	G	10 g
-119-42	Gray HVAC Duct Tape	Extension - West Side	Y	P	2 g
-120-43	Concrete	Slab	N	G	

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Dawn Long FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☑ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169056
Date Received: 10/08/12
Date Analyzed: 10/10/12
Date Printed: 10/10/12
First Reported: 10/10/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-8-101-01	11304971						
Layer: Off-White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-8-102-02	11304972						
Layer: White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/5/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** BULK #8 **Sacramento CA 95822**	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-8-101-01	CONCRETE	SLAB N/W	N	G	4860SF
↓ 102-02	WINDOW GLAZING	EXT. WINDOW N/W	↓	P	50 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Wren	*Date & Time:* 10/5/12	*Received by:* Nellie Long FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169039
Date Received: 10/08/12
Date Analyzed: 10/10/12
Date Printed: 10/10/12
First Reported: 10/10/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-9-101-01	11304797						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-9-102-02	11304798						
Layer: White Roof Shingle			**ND**				
Layer: White Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Fibrous Glass (45 %)		**Asbestos (ND)**					
17924-9-102-03	11304799						
Layer: White Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (10 %) Fibrous Glass (45 %)		**Asbestos (ND)**					
17924-9-102-04	11304800						
Layer: White Roof Shingle			**ND**				
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (10 %) Fibrous Glass (45 %)		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/5/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLDG #9	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-9-101-01	CONCRETE	SLAB N/W	N	G	216 SF
102-02	Roof Shingles (Black)	Roof N/E	N	F	260 SF
03		S/E			-
04		N/W			-

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Caitlin Cuevas	*Date & Time:* 10/5/12	*Received by:* FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169234
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #10

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-10-101-01	11306261						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BUBC #10	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive.**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-10-101-01	CONCRETE	BUBC #10 - INVENTORY CONTROL ROOM SLAB N/W	N	G	150 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Latoya Linen	*Date & Time:* 10/8/12	*Received by:* Byrnes	*Date & Time:* 10/11/12 10 AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169229
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #11

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-11-101-01	11306252						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BULC # 11	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-11-101-01	CONCRETE	Bulk # 11 - OLD EMPLOYEE BREAK AND CHANGE ROOM SLAB N/E	N	G	120 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Silva	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/9/12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169055
Date Received: 10/08/12
Date Analyzed: 10/11/12
Date Printed: 10/11/12
First Reported: 10/11/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 13
Total Samples Analyzed: 13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-12-101-01	11304954						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-101-02	11304955						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-101-03	11304956						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-101-04	11304957						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-101-05	11304958						
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-102-06	11304959						
Layer: White Drywall			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169055

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-12-102-07	11304960						
Layer: White Drywall			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					
17924-12-102-08	11304961						
Layer: White Drywall			**ND**				
Layer: White Tape			**ND**				
Layer: White Joint Compound			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (10 %)		**Asbestos (ND)**					
17924-12-103-09	11304962						
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-104-10	11304963						
Layer: Tan Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-12-105-11	11304964						
Layer: Brown Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (10 %) Fibrous Glass (45 %) Comment: Bulk complex sample.		**Asbestos (ND)**					
17924-12-105-12	11304965						
Layer: Brown Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (10 %) Fibrous Glass (45 %) Comment: Bulk complex sample.		**Asbestos (ND)**					
17924-12-105-13	11304966						
Layer: Brown Roof Shingle			**ND**				
Layer: Black Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (10 %) Fibrous Glass (45 %) Comment: Bulk complex sample.		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169055

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/11/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CALIN MIREA PM: Jonathan Curtis	Date: 10/5/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions: E-mail results to sac@forensicanalytical.com	
Site:	4700 Freeport Blvd. Sacramento CA 95822 BLK. #12	Turnaround Time: 1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐	Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis: ☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive	

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17424-12-101-01	WT - SKIP TROWEL	BLDG #12 EMPLOYEE LUNCH RM S/E CEILING	Y	G	1200SF
-02		WALL S. CENTER			-
-03		WALL S/W			-
-04		WALL N/W			-
-05		WALL N/E			-
102-06	WB/JC.	S/E CORNER	N	G	1200SF
07		N/E CORNER			-
08		S/W CORNER			-
103-09	BBM/TAN/	N/E	N	G	90LF
104-10	CONCRETE	SLAB N/W	N	G	450SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea	*Date & Time:* 10/5/12	*Received by:* FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CALIN MIREA PM: **Jonathan Curtis** Date: 10/5/12	
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions: E-mail results to sac@forensicanalytical.com	
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG # 12	Turnaround Time:	1-Day ☐ / 2-Day ☐ / 3-Day ☒ / 5-Day ☐ / Other ☐ / Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-12-105-11	ROOF COMPOSITION SHINGLES	ROOF N/E	N	G	600 SF
↓ -12	& FELT (BLACK)	S/E	↓	↓	—
↓ -13		S/W	↓	↓	—

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea	*Date & Time:* 10/5/12	*Received by:* Alli Hon FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169227
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #13

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-12-101-01	11306249						
Layer: Red Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-12-102-02	11306250						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-12-103-03	11306251						
Layer: White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/8/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. BLDG. #13 Sacramento CA 95822	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive.

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-13-101-01	CONCRETE Block	BLDG. #13 - REPOTING SHED WALL	N	G	1120 SF
102-02	CONCRETE Block MORTAR	WALL	N	G	224 SF
103-03	CONCRETE	SLAB	N	G	1440

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Critten	*Date & Time:* 10/8/12	*Received by:* Raymond	*Date & Time:* 10/11/12 1020 AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169224
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #14

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-14-101-01	11306241						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 1

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** BULK #14 **Sacramento CA 95822**	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-14-10-01	CONCRETE	BULK #14 S/E GREENHOUSE SLABS	N	G	700 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Friable Yes / No — Good / Fair / Poor

Relinquished by: Calin Cerbea	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/8/12 10:30 AM PB Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169225
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #15

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-15-101-01	11306245						
Layer: Black Cementitious Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-15-102-02	11306246						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17924-15-103-03	11306247						
Layer: Off-White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BMG #15	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-1 101-01	CONCRETE	WALKWAY	N	G	300 SF
102-02	CONCRETE Block	EXT. WALL	↓	↓	840 SF
103-03	CONCRETE Block MORTAR	EXT WALL	↓	↓	168 S.F.

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlie Chirco	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 10:20 FE Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169231
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #16

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-16-101-01	11306254						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG #16	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-16-101-01	CONCRETE	CONCRETE FOUNDATION S/W GREEN HOUSE	N	G	300 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlos Lirea	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 1020 Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169233
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #17

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-17-101-01	11306260						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bldg #17	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-17-101-01	CONCRETE	Bldg #17 – SHED CONCRETE SUPPORTING SHED POSTS.	N	G	24 SF.

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:* Received	*Date & Time:* 10/11/12 10:20 samples Condition Acceptable ☐ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169186
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #18

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-18-101-01	11305938						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BULK, # 18	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-18-101-01	CONCRETE	BULK #18 - HYDRAULIC LIFT SHED SLAB	N	G	390 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Cuneo	*Date & Time:* 10/9/12	*Received by:* [signature]	*Date & Time:* 10/10/12 1030 PM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169184
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #19

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-19-101-01	11305934						
Layer: Off-White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM PM: **Jonathan Curtis**	Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BIDC #19	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-19-101.01	CONCRETE	BIDC #19 SLAB	N	G	600SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Cerkia	*Date & Time:* 10/9/12	*Received by:* [signature]	*Date & Time:* 10/10/12 1030am FA Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169226
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/09/2012

FALI Job ID: SAC02
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-20-101-01	11306248						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BWL #20	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-20-101-01	CONCRETE	BWL #20 - LAWN MOWER SHED CONCRETE Block SUPPORTS	N	G	42 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* 10-11-12 10:30AM
Collin Curtis	10/9/12	Nelly Kang FX	Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:*
			Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169236
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/09/2012

FALI Job ID: SAC02
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17929-21-101-01	11306264						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17929-21-102-02	11306265						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17929-21-103-03	11306266						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17929-21-104-04	11306267						
Layer: Tan Adhesive			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 1

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BLDG. # 21	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-21-101-01	CONCRETE BLOCK (GRAY)	BLDG # 21 – COMPOSITE / BASE / SOIL / ALLIGATOR 2 PATTERNS WALL N/W	N	G	920 SF
102-02	CONCRETE BLOCK MORTAR (GRAY)	WALL N/W	N	G	90 SF
103-03	CONCRETE (GRAY)	SLAB N. CENTER	N	G	1500 SF
104-04	CONCRETE BLOCK ADHESIVE (BEIGE)	WALL N/E	N	G	90 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Celina Cuevas	*Date & Time:* 10/9/12	*Received by:* FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169232
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #22

Date(s) Collected: 10/08/2012

FALI Job ID: SAC02
Total Samples Submitted: 5
Total Samples Analyzed: 3

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-22-101-01	11306255						
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt		Chrysotile	**40 %**				
Layer: Black Tar			**ND**				
Layer: Black Felt		Chrysotile	**40 %**				
Total Composite Values of Fibrous Components:		**Asbestos (14%)**					
Cellulose (30 %) Fibrous Glass (10 %)							
Comment: Bulk complex sample.							
17924-22-101-02	11306256						
Comment: Sample not analyzed due to prior positive result in series.							
17924-22-101-03	11306257						
Comment: Sample not analyzed due to prior positive result in series.							
17924-22-102-04	11306258						
Layer: Black Mastic		Chrysotile	**5 %**				
Layer: Black Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (4%)**					
17924-22-103-05	11306259						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169232

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/16/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: CALIN MIREA PM: **Jonathan Curtis** Date: 10/8/12	
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions: E-mail results to sac@forensicanalytical.com	
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG. # 22	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) ☐ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-22-101-01	ROLLED ROOF & FELT (BLACK)	BLDG. #22 - OCTAGON ROOF S CENTER	N	P	1200 S.F.
02		S/W			-
03		N/W			-
102-04	ROOF MASTIC (BLACK)	ROOF FLASHINGS S/W	N	P	30 S.F.
103-05	CONCRETE	SLAB N/E	N	G	2400 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea	*Date & Time:* 10/8/12	*Received by:*	*Date & Time:* 10/11/12 1030am Condition Acceptable ☐ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169220
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #23

Date(s) Collected: 10/09/2012

FALI Job ID: SAC02
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-23-101-01	11306234						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (70 %) Synthetic (20 %)							
17924-23-101-02	11306235						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (70 %) Synthetic (20 %)							
17924-23-101-03	11306236						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (70 %) Synthetic (20 %)							
17924-23-102-04	11306237						
Layer: Light Red Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: C M	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 BUILDING #23	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-23-101-01	ROOFING FELT (Black)	BUILDING #23 - GAZEBO ROOF, UNDER WOOD SHAKES	N	G	300 SF
-02	↓	↓	↓	↓	-
-03	↓	↓	↓	↓	-
102-04	CONCRETE	SLAB	N	G	225 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	*Date & Time:* 10/9/12	*Received by:*	*Date & Time:* 10/10/12 1026 am F10 Condition Acceptable ☐ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169237
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/15/12
First Reported: 10/15/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/09/2012

FALI Job ID: SAC02
Total Samples Submitted: 5
Total Samples Analyzed: 5

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-24-101-01	11306268						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (15 %) Fibrous Glass (30 %)							
Comment: Bulk complex sample.							
17924-24-101-02	11306269						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (45 %)							
Comment: Bulk complex sample.							
17924-24-101-03	11306270						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (15 %) Fibrous Glass (30 %)							
Comment: Bulk complex sample.							

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Report Number: B169237

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 10/15/12

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-24-102-04	11306271						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17924-24-103-05	11306272						
Layer: Black Semi-Fibrous Tar			**ND**				
Total Composite Values of Fibrous Components: Cellulose (15 %)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bldg #24	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-24-101-01	Rolled Roof (Black	Bldg #24 - North Tool Shed ~~Rolled~~ Roof S/W	No	G	20.0 SF
02		N/W			-
03		E/E			-
102-04	Concrete Slab	Bldg #24 Slab N/W	N	G	14.0 SF
102-05	Roof Mastic (Black)	Bldg #24 - Roof S/W	N	G	5 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlos Cuellar	*Date & Time:* 10/9/12	*Received by:* Nellie Xiong FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169185
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #25

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-25-101-01	11305935						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (35 %) Fibrous Glass (30 %)							
17924-25-101-02	11305936						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (35 %) Fibrous Glass (30 %)							
17924-25-101-03	11305937						
Layer: White Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (35 %) Fibrous Glass (30 %)							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822 Bldg #25	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: Stop @ first positive

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-25-101-01	Built-up roof	Bldg #25 - South Tool Shed N/W	N	P	110
↓ 02	↓	S/W	↓	↓	—
↓ 03	↓	S/E	↓	↓	—

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: [signature]	*Date & Time:* 10/9/12	*Received by:* [signature]	*Date & Time:* 10/10/12 1050 Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169183
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #26

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-26-101-01	11305933						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	**Sampled by:** CM	**PM:** **Jonathan Curtis** **Date:** 10/9/12
Contact:	**Jonathan Curtis** **Phone: (916) 726-1303**	**Special Instructions:**	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BLDG #26	**Turnaround Time:**	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	**Analysis:**	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-26-101-01	CONCRETE	BLDG #26 - GAS SHED SLAB	N	G	200SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Asbestos Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colin Murray	*Date & Time:* 10/9/12	*Received by:* [signature]	*Date & Time:* 10/10/12 10:20 am Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169187
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #28

FALI Job ID: SAC02

Date(s) Collected: 10/09/2012

Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-28-101-01	11305939						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-28-101-02	11305940						
Layer: Red Roof Shingle			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Fibrous Glass (45 %)							
17924-28-101-03	11305941						
Layer: Red Roof Shingle			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Fibrous Glass (45 %)							
17924-28-101-04	11305942						
Layer: Red Roof Shingle			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Fibrous Glass (45 %)							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** Bldg # 28	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-28-101-01	CONCRETE	Bldg #28 - FERTILIZER MIXING SHED SUPPORTING BLOCKS S/E	N	G	24 SF
102-02	ROLLED ROOF UNDER	ROOF S/E	N	G	120 SF
03	FIBERGLASS ROOF PANELS	S/W	↓	↓	—
04	↓	N/E	↓	↓	—

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: [signature]	*Date & Time:* 10/9/12	*Received by:* [signature]	*Date & Time:* 10/10/12 1020 am-FE Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169041
Date Received: 10/08/12
Date Analyzed: 10/11/12
Date Printed: 10/11/12
First Reported: 10/11/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-29-101-01	11304801						
Layer: Light Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing		Chrysotile	**70 %**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (5 %)		**Asbestos (25%)**					
17924-29-102-02	11304802						
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 1

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CALIN MIREA PM: **Jonathan Curtis**	Date: 10/5/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG # 29	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-29-101-01	RSF - BROWN & PAPER BACKING (GRAY)	BLDG. # 29 W. CENTER	N	G	50 S.F
↓ 102-02	4" BBM BROWN	BLDG #29 N/W	N	G	26 L.F

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea	*Date & Time:* 10/5/12	*Received by:* FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169041
Date Received: 10/08/12
Date Analyzed: 10/11/12
Date Printed: 10/11/12
First Reported: 10/11/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/05/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-29-101-01	11304801						
Layer: Light Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing		Chrysotile	**70 %**				
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (5 %)		**Asbestos (25%)**					
17924-29-102-02	11304802						
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 1

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CALIN MIREA PM: **Jonathan Curtis**	Date: 10/5/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BLDG # 29	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-29-101-01	RSF - BROWN & PAPER BACKING (GRAY)	BLDG. # 29 W. CENTER	N	G	50 S.F
↓ 102-02	4" BBM BROWN	BLDG #29 N/W	N	G	26 L.F

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Calin Mirea	*Date & Time:* 10/5/12	*Received by:* FX	*Date & Time:* 10-8-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169230
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/09/2012

FALI Job ID: SAC02
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-30-101-01	11306253						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/9/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** Bldg. #30	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #:** **PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-30-101-01	CONCRETE	Bldg #30 - PIPE SHED CONCRETE SUPPORTING SHED POSTS	N	G	245 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Celia Chavez	*Date & Time:* 10/9/12	*Received by:* Darin Zamp FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169188
Date Received: 10/11/12
Date Analyzed: 10/15/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States, Bldg. #31

FALI Job ID: SAC02

Date(s) Collected: 10/08/2012

Total Samples Submitted: 3
Total Samples Analyzed: 3

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-31-101-01	11305943						
Layer: White Semi-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
Cellulose (5 %) Fibrous Glass (2 %) Synthetic (10 %)							
17924-31-101-02	11305944						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (ND)**							
17924-31-101-03	11305945						
Layer: Black Mastic		Chrysotile	**5 %**				
Total Composite Values of Fibrous Components: **Asbestos (5%)**							

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** Raley's	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd. Sacramento CA 95822** BMC #31	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-31-101-01	12" O.D. TSI PIPE	BMC #31 - UTILITY ROOM E. SIDE LOOSE DEBRIS	Y	P	8 L.F.
102-02	CONCRETE	SLAB S. CENTER	N	G	100 S.F.
103-03	ROOF MASTIC	ROOF, ROOF PENETRATIONS N/W	N	G	5 S.F.

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Zo Carmona	*Date & Time:* 10/8/12	*Received by:* Approved	*Date & Time:* 10/8/12 1030am F/E Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: B169221
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID/Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States

Date(s) Collected: 10/08/2012

FALI Job ID: SAC02
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17924-32-101-01	11306238						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
17924-32-102-01	11306239						
Layer: Black Cementitious Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

BULK SAMPLE REQUEST FORM

Client:	**SAC02 FACS Sacramento** **Raley's**	Sampled by: CM	PM: **Jonathan Curtis** Date: 10/8/12
Contact:	**Jonathan Curtis** Phone: **(916) 726-1303**	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	**4700 Freeport Blvd.** **Sacramento CA 95822** BLDG. # 32	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	**C3471** **FACS Job #: PJ17924**	Analysis:	☒ PLM Standard / ☐ Point Count / ☐ Flame AA (Pb) / ☒ Other: **Stop @ first positive**

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-32-101-01	CONCRETE	SLAB @ COVERED WALKWAY N/W	N	G	500 SF
↓ 102-02	ASPHALT CONCRETE	SLAB @ COVERED WALKWAY	N	G	1800 SF

WB – Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Carlin Wilson	*Date & Time:* 10/8/12	*Received by:* [signature]	*Date & Time:* 10/11/12 10:30am Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

ATTACHMENT V

CERTIFICATIONS OF PERSONNEL

State of California
Division of Occupational Safety and Health

Certified Asbestos Consultant

Jonathan S Curtis

Name

Certification No. **04-3562**

Expires on **04/15/13**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2211 Park Towne Circle, Suite 1
Sacramento, CA 95825-0414
(916) 574-2993 Office (916) 483-0572 Fax
http://www.dir.ca.gov/dirdatabases.html actu@dir.ca.gov

608302035C 128 132

November 08, 2011

Forensic Analytical Consultants
James M Rich
7625 Sunrise Blvd., #104
Citrus Heights ' CA 95610

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

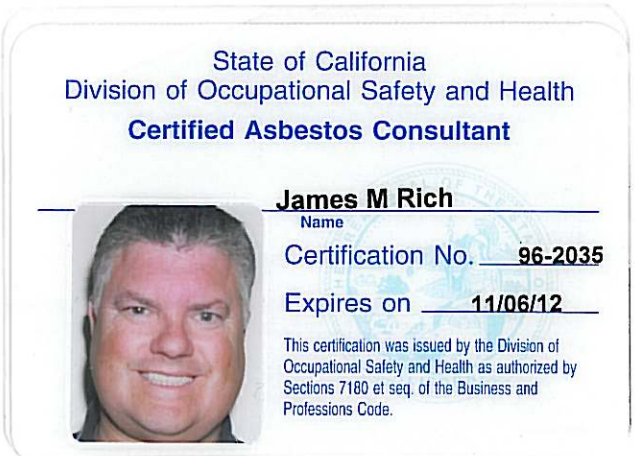
Please inform our office at the above address, fax number or email; of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Industrial Hygienist

Attachment: Certification Card

cc: File



STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2211 Park Towne Circle, Suite 1
Sacramento, CA 95825-0414
(916) 574-2993 Office (916) 483-0572 Fax
http://www.dir.ca.gov/dirdatabases.html actu@dir.ca.gov

608302035C 128 132

November 08, 2011

Forensic Analytical Consultants
James M Rich
7625 Sunrise Blvd., #104
Citrus Heights ' CA 95610

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

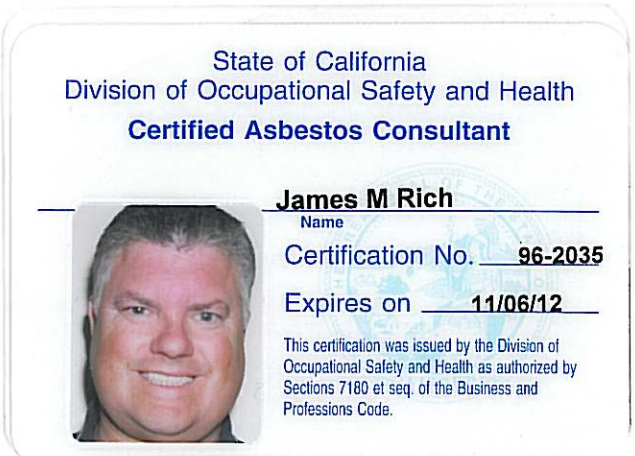
Please inform our office at the above address, fax number or email; of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Industrial Hygienist

Attachment: Certification Card

cc: File



State of California
Division of Occupational Safety and Health

Certified Asbestos Consultant

Calin Mirea
Name

Certification No. 98-2473

Expires on 12/09/12

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

Certificate of Training

This Certifies that

Calin Mirea

has successfully completed 8 hours training entitled

Asbestos Project Designer Refresher

Toxic Substances Control Act, Title II (AHERA)

This is an annual certification. It must be renewed.

Environmental
Safety
Training
Professionals Ltd.

3035 Prospect Park Drive #110
Rancho Cordova, CA 95670
Phone 916 638-5550
Fax 916 638-5551
Division Approval #CA-006-10

I.D. #: 7039
Certification #: 4375
Course Date: 09/14/11

Expiration Date: 09/14/12

By: Neta Snider
Authorized Signature: Neta Snider

Certificate of Training

This Certifies that

Calin Mirea

has successfully completed 4 hours training entitled

Asbestos Management Planner Refresher

Toxic Substances Control Act, Title II (AHERA)

This is an annual certification. It must be renewed.

Environmental
Safety
Training
Professionals Ltd.

3035 Prospect Park Drive #110
Rancho Cordova, CA 95670
Phone 916 638-5550
Fax 916 638-5551
Division Approval #CA-006-08

I.D. #: 7039
Certification #: 10928
Course Date: 06/14/12

Expiration Date: 06/14/13

By: Neta Snider
Authorized Signature: Neta Snider

Certificate of Training

This Certifies that

Calin Mirea

has successfully completed 4 hours training entitled

Asbestos Building Inspector Refresher

Toxic Substances Control Act, Title II (AHERA)

This is an annual certification. It must be renewed.

Environmental
Safety
Training
Professionals Ltd.

3035 Prospect Park Drive #110
Rancho Cordova, CA 95670
Phone 916 638-5550
Fax 916 638-5551
Division Approval #CA-006-06

I.D. #: 7039
Certification #: 10927
Course Date: 06/14/12

Expiration Date: 06/14/13

By: Neta Snider
Authorized Signature: Neta Snider

Certificate of Training

This Certifies that

Calin Mirea

has successfully completed 8 hours training entitled

Asbestos Contractor/Supervisor Refresher

Section 206 of TSCA Title II (AHERA)

This is an annual certification. It must be renewed.

Environmental
Safety
Training
Professionals Ltd.

3035 Prospect Park Drive #110
Rancho Cordova, CA 95670
Phone 916 638-5550
Fax 916 638-5551
Division Approval #CA-006-04

I.D. #: 7039
Certification #: 10942
Course Date: 06/15/12

Expiration Date: 06/15/13

By: Neta Snider
Authorized Signature: Neta Snider

CAL ENVIRONMENTAL SERVICES INC

This is to certify that

Calin Mirea

is certified by CAL INC in

Mold Inspection

11/6/2003 to 11/7/2003
Course Date(s)

11/7/2003
Exam Date

David Esparza - President

AC-31047
Certificate Number

CAL INC 2040 Peabody Rd Vacaville, CA 95696 707-446-7996

State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type	Expiration Date
Inspector/Assessor	10/13/2013
Supervisor	10/13/2013
Project Monitor	10/13/2013

12093

Calin Mirea ID #: **7256**

APPENDIX A

INSPECTION REPORT

Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Raley's to perform a pre-demolition asbestos survey of the plant nursery facility buildings located at 4700 Freeport Boulevard in Sacramento, California. It was reported that Raley's intends to demolish all structures on the property and has requested pre-demolition asbestos inspections of the structures. FACS identified 40 separate structures on the property. The intent of the survey was to identify, sample, and analyze all suspect asbestos containing materials associated with each of the buildings. A list of all suspect materials identified and sampled are included in Section 2 of this report. The survey was performed between October 4th and 10th, 2012.

1.0 Project Information

The purpose of this survey was to identify all asbestos containing building materials (ACBMs) that will be disturbed as part of the demolition project. The visual inspection, bulk sampling, and survey documentation were performed by James Rich (CAC# 96-2035) and Calin Mirea, both of whom are Certified Asbestos Consultants, as required by California law. The scope of the survey and the services provided by FACS included:

- Performing a visual inspection of the building to identify accessible suspect asbestos containing building materials (ACBMs) that will be affected by the upcoming demolition project;
- Ensuring the technical quality of all work by using Asbestos Hazard Emergency Response Act (AHERA) accredited Inspectors and Management Planners;
- Consolidating data and findings into a report format.

2.0. Building Descriptions

The facility was a plant nursery. A complete list of the different buildings are listed under Attachment II. The suspect building materials found that will be disturbed during the upcoming demolition included:

- Plaster
- Concrete
- Mortar
- Gypsum Wallboard
- Taping Mud
- Wall Texture
- Floor Tile
- Floor Tile Mastic
- Roof Mastic
- Rolled Roofing Products
- Cementitious Panels
- Cove Base Mastic
- Spray Applied Acoustical Ceiling Materials
- Ceiling Tiles
- Sheet Flooring

3.0 Survey Methods

3.1 Document Review

No documents were reviewed for this survey.

3.2 Visual Inspection

Accessible building materials were visually inspected using the methods presented in the federal AHERA regulations (40 CFR, Part 763) as a guideline. While AHERA is only directly applicable to public schools, the principles presented under the Final Rule are generally accepted as the industry standard for ACBM

inspections. Suspect ACBMs were also physically assessed for friability, condition and possible disturbance factors.

No rooms were inaccessible during this inspection.

3.3 Bulk Sampling Collection and Analysis

Bulk Sampling

Bulk samples of identified homogeneous areas were collected in building areas that may be impacted by the planned renovation/demolition activities. Samples were collected for each separate homogeneous area. A homogeneous area is defined as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in use, color and texture. Examples of homogeneous areas could include:

Floor tile
Ceiling tile
Gypsum wallboard and joint tape compound
Linoleum

The specific number of samples collected was primarily determined by using the methods presented in the federal AHERA regulations (40 CFR, Part 763.86):

1) For Surfacing Material:
   1,000 ft^2 or less - collect 3 samples
   1,001 to 5,000 ft^2 - collect 5 samples
   5,001 ft^2 or greater - collect 7 samples

2) For Thermal System Insulation:

   "In a randomly distributed manner" - collect 3 samples
   6 linear feet of patching or less - collect 1 sample
   cementitious pipe fittings - "In a manner sufficient to determine"

3) For all Miscellaneous Material:

Collect samples "In a manner sufficient to determine whether material is ACM (asbestos containing material) or not ACM..."

The suspect ACBMs were sampled using a knife or other similar coring device suitable to the type of material sampled to cut through its entire thickness and to ensure that a cross-section of the material was obtained. The material was then placed in an appropriately labeled container, which was sealed and submitted to Forensic Analytical Laboratories Inc. for analysis. A unique sample number (e.g. 17925-1-100-01) was assigned to each sample.

Bulk samples will be retained by the laboratory for one month unless otherwise instructed. After this period, the samples will be disposed of appropriately.

Bulk Sample Analysis

A total of 208 bulk samples were collected. Bulk samples were analyzed by Forensic Analytical Laboratories, Inc. in Hayward, CA. Forensic Analytical Laboratories, Inc. is accredited by the California Department of Public Health (CDPH) and the National Institute of Science and Technology's (NIST) National Voluntary Laboratory Accreditation Program (NVLAP). Forensic Analytical Laboratories, Inc.

participates in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program, and has substantial experience in the analysis of asbestos.

All of the samples were analyzed using Polarized Light Microscopy with Dispersion Staining (PLM/DS) techniques in accordance with the methodology approved by the U.S. Environmental Protection Agency (EPA). The percentage of asbestos present in the samples was determined on the basis of a visual area estimation. As set forth in the Code of Federal Regulations, 40 CFR Part 763, the lower limit of reliable quantification for asbestos using the PLM method is approximately one percent (1%) by volume, but regulations in California (CAL/OSHA Title 8 CCR 1529) define asbestos-containing materials as those materials having an asbestos content of greater than one tenth of one percent (> 0.1%). Therefore, for the purpose of this survey, any amount of asbestos detected will be considered positive. In addition to the percentages, the types of asbestos minerals are also reported. The PLM method is the standard method used to analyze asbestos bulk samples.

When "None Detected" (ND) appears in the laboratory results, it should be interpreted as meaning no asbestos was observed in the sample material.

In instances where a material is found to have low concentrations of asbestos, a secondary analysis can be performed. Unlike the PLM method, the Point Count 400 method of analysis can reliably determine if a material contains less than 1% asbestos. The advantage of establishing if a material contains less than 1% asbestos is that it will no longer be considered an Asbestos Containing Material (ACM) by the EPA. If the material is not an ACM then it will not be subject to the requirements of the EPA, such as being removed prior to demolition or being disposed of as a hazardous material. Since the material can still be > 0.1% it is subject to CAL/OSHA. Please refer to section 4.3 for further information.

4.0 Regulations

Asbestos is the name of a class of magnesium-silicate minerals that occur in fibrous form. Minerals that are included in this group are chrysotile, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, and actinolite asbestos. Although the chrysotile minerals are the most common type of asbestos found in the construction industry, all types of asbestos are regulated in the same manner. Asbestos has been used in more than 3,000 different building materials. Asbestos was added to building materials to: increase fire-resistance, insulate against heat, cold and sound, resist corrosion, and increase tensile strength. Common building materials that may contain asbestos include, but are not limited to the following: floor tile, linoleum, ceiling tile, mastics, roofing materials, fireproofing, acoustical treatments, wallboard, pipe and boiler insulations. Adverse health effects have been associated with the inhalation of airborne asbestos. However, asbestos fibers that are tightly bound in building materials, may not represent an exposure hazard, unless disturbed in such a way that releases airborne fibers (i.e., cutting, drilling, sanding, and other abrasive methods).

4.1 Building Survey

The following is a summary of some current Federal regulations which contain requirements related to the performance of building surveys for asbestos. These summaries are not intended to be all inclusive and do not contain every aspect of the regulations discussed.

U.S. EPA National Emission Standard for Hazardous Air Pollutants (NESHAPs), 40 CFR Part 61

Under the NESHAPs regulation, no visible emissions are allowed during building demolition or renovation activities which involve regulated asbestos-containing materials. For this reason, all buildings must be surveyed for asbestos-containing materials prior to demolition or renovation. The EPA, and/or the local Air Quality Management District which implements EPA actions, must be notified prior to any building demolition even if no asbestos-containing materials are present. Regulated asbestos-containing material (RACM) is defined as a) any friable material with an asbestos content of greater than one

percent, or b) any non-friable material with asbestos content of greater than one percent that will or could become friable.

Asbestos Hazard Emergency Response Act (AHERA), 40 CFR Part 763, Subpart E

AHERA requires performance of asbestos surveys and the development of Asbestos Management Plans for all of the Nation's primary and secondary schools. Although this regulation applies to primary and secondary schools only, the procedures mandated under AHERA are considered the industry standard and are applied to all surveys performed by Forensic Analytical unless otherwise specified by the building owner.

4.2 Worker Protection

California Assembly Bill AB3713, Health and Safety Code Division 20, Chapter 10.4, Section 25915-25924

The state of California has enacted legislation that requires building owners, employers, lessees, etc. to notify tenants, employees and contractors of the presence of asbestos in both friable and non-friable forms. In addition, preventive maintenance activities must be developed and communicated to these parties. Notification is required 15 days after the identification of ACM in the building, and annually there after.

Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101 and 8 CCR 1529

Federal and State Occupational Safety and Health Administration (OSHA) requires employers to implement specific work practices which protect workers from airborne asbestos exposure.

Building materials which contain even low levels of asbestos (<1%) can potentially generate significant concentrations of airborne asbestos fibers when disturbed. Therefore, control measures should be instituted which adequately address worker health and safety during planned renovation or demolition activities involving these materials. CAL/OSHA defines asbestos-containing construction materials as those materials having greater than one tenth of one percent asbestos (>0.1%).

4.3 Hazardous Waste

Building materials reported to contain less than one percent (<1%) of asbestos are not considered hazardous by the U.S. EPA, and hence, may not require removal and disposal prior to demolition or renovation. Regulations may vary, however, between regional air quality management districts and/or other state agencies responsible for implementing EPA's rules. Therefore, local agencies should be contacted for specific ACBM definitions and handling requirements. CAL/OSHA may also require special packaging and labeling on containers with asbestos-containing construction materials.

Composite sampling, which may potentially reduce the total asbestos content of the material, is only permitted when sampling joint compound, tape, and gypsum wallboard according to EPA’s Asbestos NESHAP Clarification Regarding Analysis of Multi-Layered Systems (40 CFR Part 61 FRL-4821-7).

5.0 Limitations

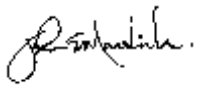
This investigation is limited to the conditions and practices observed and information made available to FACS. The methods, conclusions, and recommendations provided are based on FACS' judgment, experience and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Reasonable efforts have been made by FACS personnel to locate and sample suspect materials. However, for any facility the existence of unique or concealed asbestos-containing materials and debris is a possibility. In addition, sampling and laboratory analysis constraints typically hinder the investigation. FACS does not warrant, guarantee or profess to have the ability to locate or identify all asbestos-containing materials in a facility. The intent of this report is to be used in planning for renovation or demolition, based on the scope of work, provided to FACS, by Raley's.

Please do not hesitate to contact our office at (916) 726-1303 if you have any additional questions or concerns. Thank you for the opportunity to assist Raley's in promoting a more healthful environment.

Forensic Analytical Consulting Services

Jonathan Curtis
Project Manager



John Martinelli
Director

Forensic Analytical

ENVIRONMENTAL HEALTH CONSULTANTS

Pre-Demolition Lead Survey Report

4700 Freeport Blvd
Sacramento, CA

October 25, 2012

Prepared for:

Mr. Michael Helzer
Director of Facilities
Raley's
500 West Capitol Avenue
West Sacramento CA 95605
mhelzer@raleys.com

Prepared by:

Jonathan Curtis
Forensic Analytical Consulting Services, Inc
7625 Sunrise Blvd., Suite 104
Citrus Heights, CA 95610
(916) 726-1303
jcurtis@forensicanalytical.com

FACS Project # PJ17924

Table of Contents

Executive Summary

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Raley's to perform a pre-demolition lead survey of the buildings located at 4700 Freeport Boulevard in Sacramento, California. The inspection was performed on October 9-10, 2012.

Lead-Containing Paint and/or Lead-Based Paint were identified in various paint coatings on multiple buildings of the property.

FACS recommends that the results of this report be incorporated into any renovation/demolition plans for this site. Additionally FACS recommends that this information be made available to the demolition contractor for use in determining worker safety requirements as well as for hazardous waste considerations.

1.0 Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Raley's to perform a pre-demolition lead survey of the buildings located at 4700 Freeport Boulevard in Sacramento, California. The intent of the survey was to identify, sample, and analyze paint coating for lead associated with the indicated project area. A list of all materials identified and sampled are included in Section 2 of this report. The survey was performed on October 9-10, 2012.

2.0 Project Information

The purpose of this survey was to identify suspect lead containing paint within the project area. The visual inspection, bulk sampling, and survey documentation were performed by Calin Mirea, who is a CDPH Certified Lead Inspector/Assessor (CDPH #7256). The project was managed by Jonathan Curtis, who is also a CDPH Certified Lead Inspector/Assessor (CDPH #18779). The scope of the survey and the services provided by FACS included:

- Collection of paint chips for analysis by atomic absorption flame (AAF) spectrometry;
- Ensuring the technical quality of all work by using California Department of Public Health accredited Lead Inspector/Assessors and/or Sampling Technicians as is required by Title 17 of the California Code of Regulations;
- Consolidating data and findings into a report format.

3.0. Building Description

The project area was encompassed all the structures on the property of 4700 Freeport Boulevard in Sacramento, California. This included several occupied structures, as well as greenhouses and sheds of various sizes.

4.0 Survey Methods

Document Review

No documents were reviewed prior to conducting this survey.

Lead Inspection

Paint Chip Sampling

A total of 24 paint chip samples were collected. Paint chip samples were collected by scraping paint from the surface down to the substrate while taking care not to include substrate in the sample. All paint layers were included in each sample collected. A razor, knife or other similar tool was used and the tools were cleaned between each sample. Samples were individually packed, labeled and transported following proper chain-of-custody procedures to the analytical laboratory for flame atomic absorption analysis.

Paint Chip Sample Analysis

Samples were analyzed by Forensic Analytical Laboratories, Inc. (FALI) in Hayward, California. FALI is accredited by the California Department of Public Health (CDPH) and the National Institute of Science

and Technology's (NIST) National Voluntary Laboratory Accreditation Program (NVLAP). FALI participates in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program, and has substantial experience in the analysis of metals including lead. Samples were analyzed using EPA method 3050B/7420, atomic absorption flame (AAF) analysis.

Regulatory Levels

Cal/OSHA, in Title 8CCR 1532.1 which implements California labor code 8716-6717, regulates all construction work were an employee may be occupationally exposed to lead. Construction work impacting materials with detectable levels of lead is subject to Cal/OSHA requirements.

Construction activities, sometimes referred to as trigger tasks, impacting materials containing any amount of lead require an initial exposure assessment. Trigger tasks are defined in Cal/OSHA 1532.1, section (d) (2) and include but are not limited to such tasks as: manual demolition, manual scraping, manual sanding, lead burning, abrasive blasting, welding, cutting and torch burning.

Cal/OSHA states that objective data confirming that painted surfaces contain less than 600 parts per million (ppm) lead may be used to demonstrate that employee exposure will not exceed the action level (30 µg/cubic meter of air).

Objective data, as described in subsection (d)(3)(D), is not permitted to be used for exposure assessment in connection with subsection (d)(2).

In several areas the reference to (d)(2) clearly indicates that objective data may NOT be used in lieu of exposure assessments.

5.0 Findings & Recommendations

Findings

Paint chip analysis confirmed that lead-based paint (LBP) was present on Buildings 3, 9, and 14. Lead-containing paint was present on buildings 1, 4, 7, 6, 11, and 32. The paint sample results are representative of the paint sampled and other paints on the property.

The Cal/OSHA Lead in Construction Standard (8 CCR 1532.1) should be followed for any activities that will disturb any of the painted coatings. This is recommended as the standard applies to lead-related construction activities containing any detectable amount of lead and lead was confirmed to be present in the paint chip sample. Elements of the standard that will be applicable include but may not be limited to: training, exposure assessment monitoring, preparation of a site specific lead compliance plan, use of personal protective equipment and hygiene facilities.

Recommendations

FACS recommends that this information be made available to the demolition contractor for use in determining worker safety requirements as well as for hazardous waste considerations.

Due to the numerous locations where lead was found and the difficulty in communicating exact locations of lead-containing materials in a narrative report for a project of this scope it is recommended that the demolition contractor presume that for all buildings where lead was reported any contraction activity that disturbs paint is conducted in accordance with 8CCR§1532.1.

FACS recommends that the results of this report be incorporated into any renovation/demolition plans for this site.

Limitations

This investigation is limited to the conditions and practices observed and information made available to FACS. The methods, conclusions, and recommendations provided are based on FACS' judgment, experience and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Please do not hesitate to contact our office at 916-726-1303 if you have any additional questions or concerns. Thank you for the opportunity to assist Raley's in promoting a more healthful environment.

Respectfully,
FORENSIC ANALYTICAL

Jon Curtis, CDPH#17889
Project Manager
Sacramento

John Martinelli, CDPH#7330
Director
Sacramento

Appendix A:

Lead Data Table, Laboratory Report and Chain of Custody Documents

Sample number	Paint Color	Location	Substrate	Condition	Results - % weight
7-201	White	Building 7, Storage room wall	Wallboard	G	<0.006
7-202	**Brown**	**Building 7, Exterior**	**Wood**	**G**	**0.020**
6-203	**White**	**Building 6, Room 1**	**Plaster**	**G**	**0.053**
6-204	**Green**	**Building 6, Exterior Door Trim**	**Wood**	**P**	**0.11**
4-205	**Beige**	**Building 4, Room 1**	**Plaster**	**G**	**0.020**
4-206	**Green**	**Building 4, Exterior wall**	**Stucco**	**G**	**0.42**
3-207	Gray	Building 3, Wall	Plaster	P	< 0.006
3-208	**Green**	**Building 3, Exterior Door**	**Wood**	**P**	**20**
22-209	Green	Building 22, columns	Wood	P	< 0.006
2-210	Blue	Building 2, columns	Wood	G	< 0.008
5-211	Green	Building 5, columns	Wood	P	< 0.008
29-212	Brown	Building 29, Exterior wall	Wood	G	< 0.006
11-213	**Brown**	**Building 11, Exterior wall**	**Wood**	**G**	**0.47**
29-214	Brown	Building 12, Door	Wood	F	< 0.006
16-215	White	Building 16, Exterior wall	Wood	F	< 0.006
28-216	Red	Building 28, Exterior wall	Wood	F	< 0.006
20-217	Green	Building 20, Exterior wall	Wood	F	< 0.008
9-218	**Beige**	**Building 9, Exterior wall**	**Wood**	**P**	**0.50**
32-219	Green	Building 32, columns	Wood	P	< 0.006
14-220	**White**	**Building 14, Exterior wall**	**Wood**	**P**	**1.1**
32-221	**Green**	**Building 32, Columns**	**Wood**	**F**	**0.12**
1-222	**White**	**Building 1, interior wall**	**Wood**	**P**	**0.48**
6-223	Beige	Building 6, Interior wall	Plaster	P	< 0.006
6-224	**Beige**	**Building 6, Exterior wall**	**Stucco**	**F**	**0.48**

The above paint sample results are representative of the paint sampled and other paints on the property.

Forensic Analytical Laboratories

Metals Analysis of Paints

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: M133501
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID / Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States
Date(s) Collected: 10/9/12

FALI Job ID: SAC02
Total Samples Submitted: 24
Total Samples Analyzed: 24

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
17924-7-201	30447182	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-7-202	30447183	Pb	0.020	wt%	0.006	EPA 3050B/7420
17924-6-203	30447184	Pb	0.053	wt%	0.006	EPA 3050B/7420
17924-6-204	30447185	Pb	0.11	wt%	0.02	EPA 3050B/7420
17924-4-205	30447186	Pb	0.020	wt%	0.006	EPA 3050B/7420
17924-4-206	30447187	Pb	0.42	wt%	0.03	EPA 3050B/7420
17924-3-207	30447188	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-3-208	30447189	Pb	20	wt%	2	EPA 3050B/7420
17924-22-209	30447190	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-2-210	30447191	Pb	< 0.008	wt%	0.008	EPA 3050B/7420
17924-5-211	30447192	Pb	< 0.008	wt%	0.008	EPA 3050B/7420
17924-29-212	30447193	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-11-213	30447194	Pb	0.47	wt%	0.03	EPA 3050B/7420
17924-29-214	30447195	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-16-215	30447196	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-28-216	30447197	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-20-217	30447198	Pb	< 0.008	wt%	0.008	EPA 3050B/7420
17924-9-218	30447199	Pb	0.50	wt%	0.03	EPA 3050B/7420
17924-32-219	30447200	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-14-220	30447201	Pb	1.1	wt%	0.06	EPA 3050B/7420
17924-32-221	30447202	Pb	0.12	wt%	0.006	EPA 3050B/7420
17924-1-222	30447203	Pb	0.48	wt%	0.03	EPA 3050B/7420
17924-6-223	30447204	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17924-6-224	30447205	Pb	0.48	wt%	0.03	EPA 3050B/7420

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical Laboratories

Metals Analysis of Paints

Forensic Analytical Consulting Svcs
Jonathan Curtis
7625 Sunrise Blvd.
Suite 104
Citrus Heights, CA 95610

Client ID: SAC02
Report Number: M133501
Date Received: 10/11/12
Date Analyzed: 10/16/12
Date Printed: 10/16/12
First Reported: 10/16/12

Job ID / Site: PJ17924; 4700 Freeport Blvd. Sacramento CA 95822 United States
Date(s) Collected: 10/9/12

FALI Job ID: SAC02
Total Samples Submitted: 24
Total Samples Analyzed: 24

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☐ PLM Standard / ☐ Point Count / ☒ Flame AA (Pb) / ☐ Other:

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-7-201	PAINT ON WALLBOARD (WHITE)	BLDG #7 - LANDSCAPE OFFICE - STORAGE ROOM - WALL		G	4500 SF
-7-202	PAINT ON WOOD - BLDG EXT (BROWN)	↓ BLDG EXTERIOR N/E WALL		G	2400 SF
6-203	PAINT ON PLASTER (WHITE)	BLDG #6 - ADMIN BLDG ROOM #1 WALL		G	1640 SF
6-204	PAINT WOOD (GREEN)	BLDG #6 - ADMIN BLDG S/E DOOR EXT.		P	480 SF
4-205	PAINT ON PLASTER (BEIGE)	BLDG # 4 - GARDEN SHOP RM #1 WALL		G	2333 SF
4-206	PAINT ON STUCCO (GREEN)	BLDG # 4 - GARDEN SHOP - EXT. WALL		G	2000 SF
3-207	PAINT ON PLASTER (GRAY)	BLDG #3 - OLD CASHIER'S OFFICE, WALL		P	500 SF
3-208	PAINT ON DOOR FRAME (GREEN)	BLDG #3 - OLD CASHIER'S OFFICE DOOR EXT.		P	90 SF
22-209	PAINT ON WOOD (GREEN)	BLDG #22 - OCTAGON, WOOD POSTS		P	1020 SF
2-210	PAINT ON WOOD (BLUE)	BLDG #2 - BREEZEWAY, POSTS		G	500 SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Colby Urrea	*Date & Time:* 10/9/12	*Received by:* Alexis Long FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by: CM	PM: Jonathan Curtis Date: 10/9/12
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☐ PLM Standard / ☐ Point Count / ☒ Flame AA (Pb) / ☐ Other:

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
17924-5-211	PAINT ON WOOD (GREEN)	BLDG #5 - GREENHOUSE NURSERY WOOD POSTS		P	35 SF
-29-212	PAINT ON WOOD (BROWN)	BLDG #29 - GREEN HOUSE OFFICE - EXT WALL		G	220 SF
-11-213	PAINT ON WOOD (BROWN)	BLDG #11 - OLD EMPLOYEE BREAK RM. EXT WALL		G	300 SF
-29-214	PAINT ON WOOD (BROWN)	BLDG #12 - EMPLOYEES LUNCH ROOM - DOOR		F	1200 SF
-16-215	PAINT ON WOOD (WHITE)	BLDG # 16 - S/W GREENHOUSE - EXT WALL		F	1140 S.F.
28-216	PAINT ON WOOD (RED)	BLDG #28 - FERTILIZER MIXING SHED - EXT WALL		F	280 S.F.
20-217	PAINT ON WOOD (GREEN)	BLDG #20 - LAWN MOWER SHED - EXT WALL		F	200 SF
9-218	PAINT ON WOOD (BEIGE)	BLDG #9 - OLD BULB STORAGE - EXT WALL		P	400 S.F.
32-219	PAINT ON WOOD (GREEN)	BLDG #32 - ROOF ON N. BATH STRUCT. & POSTS		P	600 SF
V 14-220	PAINT ON WOOD (WHITE)	BLDG # 14 GREENHOUSE - EXT WALL		P	1000 S.F.

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable Yes / No Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by: Celia Lineo	*Date & Time:* 10/9/12	*Received by:* FX	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Forensic Analytical

BULK SAMPLE REQUEST FORM

Client:	SAC02 FACS Sacramento Raley's	Sampled by:	PM: Jonathan Curtis Date:
Contact:	Jonathan Curtis Phone: (916) 726-1303	Special Instructions:	E-mail results to sac@forensicanalytical.com
Site:	4700 Freeport Blvd. Sacramento CA 95822	Turnaround Time:	1-Day ☐ 2-Day ☐ 3-Day ☒ 5-Day ☐ Other ☐ Due Date and Time:
Client No.:	C3471 FACS Job #: PJ17924	Analysis:	☐ PLM Standard / ☐ Point Count / ☒ Flame AA (Pb) / ☐ Other:

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
7924-32-221	PAINT ON WOOD (GREEN)	BLDG # 32 - ROOF N. OF LATH STRUCTURE — POSTS		F	500SF
1-222	PAINT ON WOOD (WHITE)	BLDG # 1 — NORTH GREENHOUSE INTERIOR WALLS		P	2000 SF
6-223	PAINT ON PLASTER (BEIGE)	BLDG # 6 - ADMIN. OFFICE, MEN'S RR INT. WALL		P	3000SF
6-224	PAINT ON STUCCO (BEIGE)	BLDG #6 - ADMIN OFFICE - EXT. WALL		F	2500SF

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable: Yes / No — Good / Fair / Poor

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:			
Relinquished by: Cathy Cirino	*Date & Time:* 10/9/12	*Received by:* Nellie Xiong FD	*Date & Time:* 10-11-12 10:30AM Condition Acceptable ☒ Yes ☐ No
Relinquished by:	*Date & Time:*	*Received by:*	*Date & Time:* Condition Acceptable ☐ Yes ☐ No

Appendix B:

Personnel Certifications

State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type	Expiration Date
Inspector/Assessor	05/27/2013
Supervisor	05/27/2013

16122

John E. Martinelli

ID #: 7330

State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type

Inspector/Assessor

Expiration Date

10/23/2012

14673

Jonathan S. Curtis

ID #: 18779

State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type	Expiration Date
Inspector/Assessor	10/13/2013
Supervisor	10/13/2013
Project Monitor	10/13/2013

12093

Calin Mirea ID #: **7256**

Appendix C:

Form 8552

State of California—Health and Human Services Agency | California Department of Public Health

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation 10/10/12

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☑ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
4700 Freeport Blvd	Sacramento	CA	95822

Construction date (year) of structure	Type of structure		Children living in structure?	
1940s	☐ Multi-unit building	☐ School or daycare	☐ Yes	☑ No
	☐ Single family dwelling	☐ Other Plant Nursery	☐ Don't Know	

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
Raley's (Mike Helzer, Director of Facilities)	916-373-6263

Address [number, street, apartment (if applicable)]	City	State	Zip Code
500 West Capitol Blvd.	West Sacramento	CA	95605

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☑ Intact lead-based paint detected ☑ Deteriorated lead-based paint detected

☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other_____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
David Brinkerhoff	9167261303

Address [number, street, apartment (if applicable)]	City	State	Zip Code
7625 Sunrise Blvd	Citrus Heights	CA	95610

CDPH certification number	Signature	Date
#20593	David Brinkerhoff	10/29/12

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Calin Mirea, #7256

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

APPENDIX F

Preliminary Site Stormwater Analysis

Land Park Commercial Center
Sacramento, CA
Preliminary Site Stormwater Analysis

To: Patrick Ji
(via email transmission to PJi@cityofsacramento.org)

From: Charles Krafka, Martin Lewis

Date: January 12, 2016. Revised March 17, 2016.

Subject: Preliminary Site Stormwater Analysis
Land Park Commercial Center

INTRODUCTION

This memorandum has been prepared in support of a Tentative Map Application and Environmental Impact Report for the proposed Land Park Commercial Center (LPCC). This document updates our January 12 memo, and is intended to address questions and comments provided by the City Department of Utilities (DOU) in an email dated February 24.

This approximate 9.9-acre infill project is a proposed redevelopment the former Capital Nursery site near the northwest corner of the intersection of Freeport Blvd and Wentworth Avenue. The development project will be anchored by a new Raley's grocery store, and will also include a number of satellite buildings for ancillary retail/commercial uses. The proposed site layout is depicted in the Preliminary Grading Plan in Attachment 1.

The purpose of this memorandum is to:

1) Evaluate the potential effects of the proposed site redevelopment on the existing City storm drain system. This includes examination of the potential effects of the estimated increase in site imperviousness on 100-year peak hydraulic grade line (HGL) elevations in the vicinity of the site, notably in Freeport Blvd. and Babich Avenue.

2) Evaluate how the proposed development intends to address existing 100-year street overflows from Freeport Blvd onto northern part of the site: Based on previous SSWMM regional hydrology/hydraulic modeling studies conducted by the City, a peak flow on the order of 140 cfs is predicted to spill from the adjacent sag point in Freeport Blvd onto the site in the 100-year 6-hour design event. The runoff volume associated with this spill is estimated

to be on the order of 45 ac-ft. This existing overland flow then traverses the northernmost portion of the existing site, discharging to Babich Avenue.

This document is not intended as a design-level memorandum, describing the particulars of the onsite stormwater piping system or stormwater quality measures. Those onsite facilities will be designed and documented later, during the project's Construction Documents (CD) phase.

SURVEY DATA AND VERTICAL DATUM

The design of proposed site facilities will be based upon a 1"=50' site topographic survey prepared by Morrow Surveying in 2014. The site survey map indicates 1-foot contours, and also includes spot elevations to the nearest 0.1-foot at selected locations. The site survey is referenced to the NAVD 88 vertical datum. The City's regional hydraulic modeling studies (Basin 26 SSWMM models) were largely based on older 1"=100' mapping (also 1-ft contours and ±0.1-foot spot elevations), referenced to the NGVD 29 vertical datum. For the purposes of comparing elevations between the two datums, a conversion height of 2.52' has been used herein (i.e. NAVD elevation = NGVD elevation + 2.52').

EXISTING (PRE-PROJECT) CONDITIONS

The hydrology of the existing (pre-project) site, as it relates to the regional drainage facilities in the adjacent street corridors, is described in the City's *Basin 26 Drainage Master Plan* (September 2000). As shown in the Basin 26 DMP, the existing project site lies partially within existing subsheds 4812, 4802, 4205 and 4207. The 'onsite' portions of those subsheds are highlighted on Attachment 2. For the modeling computations performed herein, the overall 'onsite' shed area was considered to include the existing bank facilities (to remain) near the southeast corner of the redevelopment site, for a total area of 11.1 acres.

In order for CEC to examine the existing-conditions hydraulics of the City storm drain system abutting the site, specifically in Freeport Blvd. and in Babich Avenue, City DOU furnished SSWMM RUNOFF and SSWMM EXTRAN 100-year 6-hour existing-conditions models (input files R26100r.dat and O26E_EDV.dat respectively). In the existing-conditions RUNOFF input file, the project site lies partially within model subsheds 4812, 4802 and 4207 (with the DMP's Subshed 4205 absorbed into Subshed 4207). In the existing-conditions EXTRAN model, the runoff from Subshed 4812 discharges to model node 4812 in Babich Avenue. Subsheds 4802 and 4207 drain to nodes 4802 and 4207 respectively in Freeport Blvd.

In the existing-conditions RUNOFF input file, CEC made minor modifications to the definitions of existing subsheds 4812, 4802 and 4207 so as to be able to separately account for the 'onsite' portions of those subshed areas. This was done in anticipation of increasing the site's impervious cover in the post-project analysis, discussed below. In the CEC-modified existing conditions RUNOFF input file, the onsite portions of the above subsheds are identified as subsheds 8812, 8802 and 8207. Overall existing shed areas, existing impervious coverage and existing peak flows were not affected by these edits.

In the existing-conditions EXTRAN input file, CEC modified the definition of overland conduit 8442, linking nodes 4802 and 4812. The intent of this modification was to try to more accurately reflect the existing site surface geometry, based on the 2014 site topo and on examination of aerial photography. As such, conduit 8442's cross-section and length were revised to represent the short segment of Babich Avenue between the north edge of the site and node 4812. For conveyance over the site itself, additional conduits (8800, 8802 and 8804) were added to the EXTRAN model to represent east-to-west overland flow within the northerly part of the property. Conduit 8800 represents the relatively wide, open area on the northwesterly portion of the site. Conduit 8802 represents the ±40 foot-wide east-west conveyance corridor flanking the north edge of the existing enclosed display area attached to the Capital Nursery building. And conduit 8804 (in parallel with 8802) represents the ±30 foot wide east-west conveyance corridor along the south edge of the Capital Nursery building.

In the original DMP EXTRAN model, conduit 8442 carries a surface roughness of n=0.03. In the revised CEC model, the Babich Avenue street pavement (revised conduit 8442) and the asphalt-paved area south of the Capital Nursery main building (conduit 8804) are assigned a reduced roughness coefficient of n=0.02.

Basin 26 DMP's definition of existing street storage associated with the Freeport Blvd sag at Node 4802 has not been revised at this time. This is because we do not have new topo mapping for the east half of Freeport Blvd, or for the existing properties abutting the east edge of the street.

The CEC-modified existing-conditions RUNOFF and EXTRAN input and output files are appended in Attachment 3, and serve as the pre-project baseline conditions against which we compared the post-project SSWMM model runs, as described below.

For the 100-year 6-hour storm, the existing-conditions EXTRAN model computes elevated HGLs in both Freeport Blvd and Babich Avenue, reflecting significant street flooding. And as mentioned above, the EXTRAN model predicts a substantial overland spill of floodwater from the Freeport Blvd roadway sag (node 4802), draining to Babich Avenue via the northernmost portion of the existing site. Under these conditions, the pre-project EXTRAN model indicates an onset of spill from model node 4802 at elevation 17.5 + 2.52 = 20.02 (NAVD 88). This appears generally consistent with the 2014 site topo map, which suggests that ponded floodwater in the Freeport Blvd sag could begin spilling across the project site at around EL 19.8 (NAVD 88).

In the CEC-modified existing-conditions EXTRAN model, the computed peak HGL at node 4802 is 20.02 + 0.94 =20.96 (NAVD 88). At node 4812 (Babich/Meer) the computed HGL is 19.02 + 1.43 = 20.45 (NAVD 88). The model reports an existing peak spill rate of 139 cfs from Freeport onto the site.

PROPOSED (POST-PROJECT) CONDITIONS

Attachment 1 indicates the preliminary site layout for the proposed redevelopment, together with conceptual grading information.

Effect of increased site imperviousness

Based on field reconnaissance and on examination of the site topographic survey, the pre-project site imperviousness is estimated at approximately 36%. The preliminary site development plan for LPCC represents a post-project impervious coverage of approximately 88%. This increase is expected to result in an increase in site-generated peak flow and site-generated runoff volume.

Peak Flow:

In order to examine the possible effects of an increase in the site's peak flow on abutting City drainage facilities, the Basin 26 existing-conditions RUNOFF model was adjusted such that the overall percent imperviousness in onsite subsheds 8812, 8802 and 8207 reflect the LPCC site's post-project condition. The overall runoff directions of the existing onsite subsheds are generally be preserved. However, the southerly part of the redeveloped site will drain in to Freeport Blvd via the proposed main site entrance drive. Accordingly, in the post-project model, 4 acres were reassigned from subshed 8207 to subshed 8812. The RUNOFF model was re-run with the proposed imperviousness changes.

The CEC-modified existing-conditions EXTRAN input file was further revised in order to depict post-project surface conditions on the site. To this end, conduit 8442 remained the same as for CEC's existing conditions model. For overland conveyance across the site itself, additional conduits (8800, 8802, 8804 and 8806) were added to represent east-to-west surface conveyance over the northerly part of the property. Conduit 8800 represents the relatively short, narrow east-west corridor north of the proposed Raley's building. Conduit 8802 represents the broad east-west flow conveyance across the main parking lot. Conduit 8804 represents the east-west flow across the smaller parking area north of the "Shops 4" site. Finally, conduit 8806 (in parallel with 8804) represents the east-west conveyance along the proposed main entrance drive into the main parking lot.

In addition, for the post-project condition, Basin 26 DMP's definition of existing street storage associated with the Freeport Blvd sag at Node 4802 was revised. The intent of this change was to account for the proposed site facilities' encroachment into the 'onsite' portion of that storage.

Table 1 (below) presents the 100-year maximum street flooding depths adjacent to the site, as computed by the CEC-modified pre-project and post-project EXTRAN models.

Table 1: Flooding Depths (above gutter flowline) in Abutting Streets

EXTRAN Model Node	Street Flooding Depths (ft.)	
	Pre-project (site at 36% impervious)	**Post-project (site at 88% impervious)**
4810 (Freeport at Meer)	0.67	0.67
4802 (Freeport sag, abutting site)	0.94	0.99
4207 (Freeport at Wentworth)	0.95	0.94
4812 (Babich at Meer)	1.43	1.41
4503 (S. Land Park/Sutterville Rd)	0.89	0.87

As indicated in Table 1 above, the computed maximum flooding depths at model nodes in the vicinity of the site were changed very little by the proposed site development. The pre- to post-project change in computed peak flood depth ranges from -0.02' to +0.05'. When averaged over the above nodes, the mean change is 0.00'.

Such small differences in computed HGL are well within the tolerance of the model's input data (i.e. mapped spot elevations to the nearest 0.1'; mapped contours to the nearest 1'), and likely within the accuracy of the computational methods too. So from a modeling perspective, it can be argued that computed HGL differences in the realm of -0.02' to +0.05' couldn't be said to definitively represent a material change. And in the field, differences in peak water surface in that range would typically not be visually discernable.

The insensitivity of local peak HGLs to the proposed site changes may be due to multiple factors. One consideration is that the offsite catchment area is very much larger than the LPCC site itself, so flooding depth computations are likely overwhelmingly influenced by the large offsite shed. And for nodes downstream of the site (4812 and 4503), the lack of material change in peak HGLs may also suggest that the overland conveyance/storage characteristics of the redeveloped site are substantially similar to those of the existing site.

Based on the above, it is thought that there would likely be no significant hydraulic benefit in adding onsite detention storage facilities that were designed to attenuate the increase in site-generated peak flow rate due to increased site imperviousness.

Runoff Volume:

For site developments in general, in addition to peak flow considerations it is recognized that an increase in a given site's runoff volume could potentially contribute to an increase in the peak storage volume (and hence peak WSE) of accumulated floodwater that may temporarily pond at one or more local low points downstream of the site.

In light of this, it is noted that the LPCC site design will include some onsite stormwater retention storage: While its primary purpose will be for water quality storage (WQS), it will also capture the first flush in larger storm events, such as the 100-year 6-hour storm

being analyzed herein. It is anticipated that the WQS will be provided via shallow underground storage cells ('Contech' or equivalent), to be installed beneath the proposed parking lot. Sizing for water quality treatment will be based on the design water quality volume (WQV). This is expected to be nominally 0.5" of site runoff. However, actual determination of the required WQV will be conducted during the project CD phase.

The anticipated WQV of ±0.5" is comparable in magnitude to the site's 100-yr 6-hr pre/post runoff volume increment computed by the SSWMM RUNOFF model ($\Delta V \approx 19{,}000$ cf, or 0.47" over 11.1 ac). And while this proposed onsite retention storage has not been reflected in the current post-project EXTRAN model, it is proposed that sufficient onsite storage capacity will be provided in the proposed WQ storage cells to capture and store the estimated 100-yr 6-hr volume increment of 19,000 cf.

Existing overland flows from Freeport Blvd to Babich Avenue

As noted above, an existing 100-year overland flow of around 140 cfs spills from the sag point in Freeport Blvd onto the site, traversing the northernmost portion of the existing site and discharging to Babich Avenue. The overland flows continue north along the Babich corridor towards Sutterville Road and Land Park.

The Basin 26 DMP evaluated and proposed measures to mitigate for this (and other) flooding conditions within the Basin 26 watershed. Given that street flooding is widespread within Basin 26, the DMP identified that a substantial program of capital improvements would be needed in order to improve street flooding conditions.

At this time, we are not aware that funding has been identified for implementing future flood management measures within Basin 26. Absent near-term capital improvements to manage the Freeport Blvd overflows, the LPCC project will look to maintain the status quo i.e. continue to 'pass through' these offsite flows via the project's proposed northerly parking area. The project proposes to address this through a surface grading design that allows the overflows to enter the site, and which seeks to provide east-to-west overland flow conveyance similar to that afforded by the existing site's northernmost area.

The post-project EXTRAN model contains a simplified representation of the proposed surface geometry of the redeveloped site. In light of this, and given that the new parking areas, drive aisles and building pads will have a complex, irregular surface geometry, a supplemental steady-flow analysis of surface conveyance was conducted using HEC-RAS. The rationale for conducting the supplemental HEC-RAS analysis is to utilize that program's capability of modeling in detail the highly varying site surface geometry. The intent is to provide supplemental conveyance modeling detail to further demonstrate that the northerly part of the proposed parking area can provide a hydraulically adequate overland path for a ±140 cfs overland spill from Freeport to Babich, without materially increasing the peak HGL at the sag point in Freeport Blvd compared with existing conditions.

The HEC-RAS model comprises a single modeling reach, traversing the northern part of the project site from east to west, and having the same connectivity as conduit 8442 in the EXTRAN existing-conditions model i.e. from the Freeport sag (node 4802) to the intersection of Babich/Meer (node 4812). As noted above, water can begin spilling from the Freeport Blvd sag onto the existing site at around EL 19.8 (NAVD 88). This condition is reflected in the pre-project HEC-RAS model, and also in the conceptual site grading plan and post-project HEC-RAS model.

The HEC-RAS model's pre-project and post-project design peak flow rates were derived from the respective EXTRAN models, which indicate a 100-yr peak spill rate from Node 4802 of 139 cfs (pre-project) and 138 cfs (post project). Similarly, the HEC-RAS model's starting downstream HGLs were taken as the EXTRAN-computed peak HGLs at Babich/Meer i.e. EL 20.45 (NAVD 88) for pre-project conditions; EL 20.43 (NAVD 88) for post-project conditions.

Based on the above, the preliminary RAS model reported a computed HGL of 20.89 (NAVD 88) for the pre-project condition, and 20.77 (NAVD 88) for the post-project condition at the east edge of the project site (model RS 1510). These HGLs are generally consistent with the EXTRAN model at node 4802 [HGL = 20.96 (pre); 21.01 (post)]. This supports the notion that parking lot can provide adequate capacity to convey a flow on the order of 140 cfs overland to Babich, without materially increasing the existing-conditions peak 100-year HGL in Freeport.

In the earlier discussion of the of pre-project/post project HGLs presented in Table 1 above, it is suggested that the lack of material change in HGLs may in part be due to the site's pre-project and post-project conveyance/storage characteristics being similar. The HEC-RAS results shed some light on this also. While the steady-state HEC-RAS model doesn't account for the potential attenuation effects of incidental surface storage, a comparison of the RAS model's pre-project to post-project 'volume-in-flow' numbers can provide a rough indicator of the relative flow attenuation potential of the pre-project and post project site surface geometries. The volume-in-flow was manually calculated from HEC-RAS's reported cross-sectional 'area-in-flow' at each model cross-section and the cross-section spacings. This yielded an estimate of the total water volume being conveyed over the site at the time of the peak discharge. The calculated HEC-RAS pre-project and post-project volume-in-flow numbers are comparable: 2.40 ac-ft; and 2.49 ac-ft respectively. A change of 0.09 ac-ft is negligible in the context the ±45 ac-ft volume of the Freeport spill.

The depths (D) and average velocities (V) reported by HEC-RAS were examined for comparison with City requirements, which stipulate that D x V < 6. At each cross-section in the pre- and post-project HEC-RAS models, the product of maximum depth and average velocity was manually calculated. In the pre-project model, the maximum value of D x V at a given cross-section was found to be 3.5. In the post-project model, the maximum value at a given cross-section was 2.9. For the post-project model, the D x V calculations were subsequently repeated with the model's pavement roughness reduced from n=0.02 to n=0.016 (consistent with City guidelines for new pavement surfaces). With reduced roughness, the maximum value of D x V remained at 2.9.

While it is expected that this preliminary RAS model may need to be updated to reflect ongoing site plan refinements, it is believed that the initial modeling illustrates the viability of the proposed concept for passing through the existing overflows from Freeport to Babich.

CONCLUSIONS

1) The CEC-modified pre-project Basin 26 EXTRAN model predicts a 100-year overland spill of approximately 140 cfs from Freeport Blvd onto the northernmost part of the site. In the post-project Basin 26 EXTRAN model, the computed spill rate remains essentially the same. It is proposed that the LPCC site design continue to allow the existing overland flow to be passed through the redeveloped site to Babich Avenue via essentially the same route.

2) The CEC-modified post-project Basin 26 EXTRAN model indicates that the site's proposed redevelopment results in negligible changes to the computed 100-year 6-hour HGLs in the site's vicinity. At model nodes adjacent to the site, the pre- to post-development change in computed HGL averages 0.00'.

3) The supplemental HEC-RAS steady-flow model of the northerly parking lot indicates that for a ±140 cfs spill rate, the computed pre-project and post-project peak HGLs at Freeport are comparable (ΔHGL ≈ -0.1'). This is consistent with the results of the EXTRAN analysis, and provides further demonstration that the redeveloped site can continue to allow the Freeport spill to flow overland through the site Babich Avenue without a material increase in peak 100-year HGL in Freeport Blvd.

4) The project's proposed onsite WQS facilities will provide some retention storage during the 100-yr 6-hr storm. These facilities will be sized for either the site's 100-yr 6-hr pre/post runoff volume increment (0.47") or the required WQV requirement (volume TBD) – whichever is larger. This storage effectively offsets the estimated 100-yr 6-hr runoff volume increase due to the site's added impervious cover.

5) Based on the Conclusions 1 - 4 above, it is expected that that the proposed project will not result in an adverse effect on offsite flooding conditions in the 100-year 6-hour design storm.

ATTACHMENTS

1. LPCC Preliminary Grading Plan

2. Shed Map reproduced from Basin 26 SDMP, annotated to indicate the approximate limits of the project site area in relation to Subsheds 4812, 4802, 4205 and 4207.

3. Hydrology & Hydraulics input/output files (digital files only).

    a) Basin 26 SSWMM RUNOFF Model:

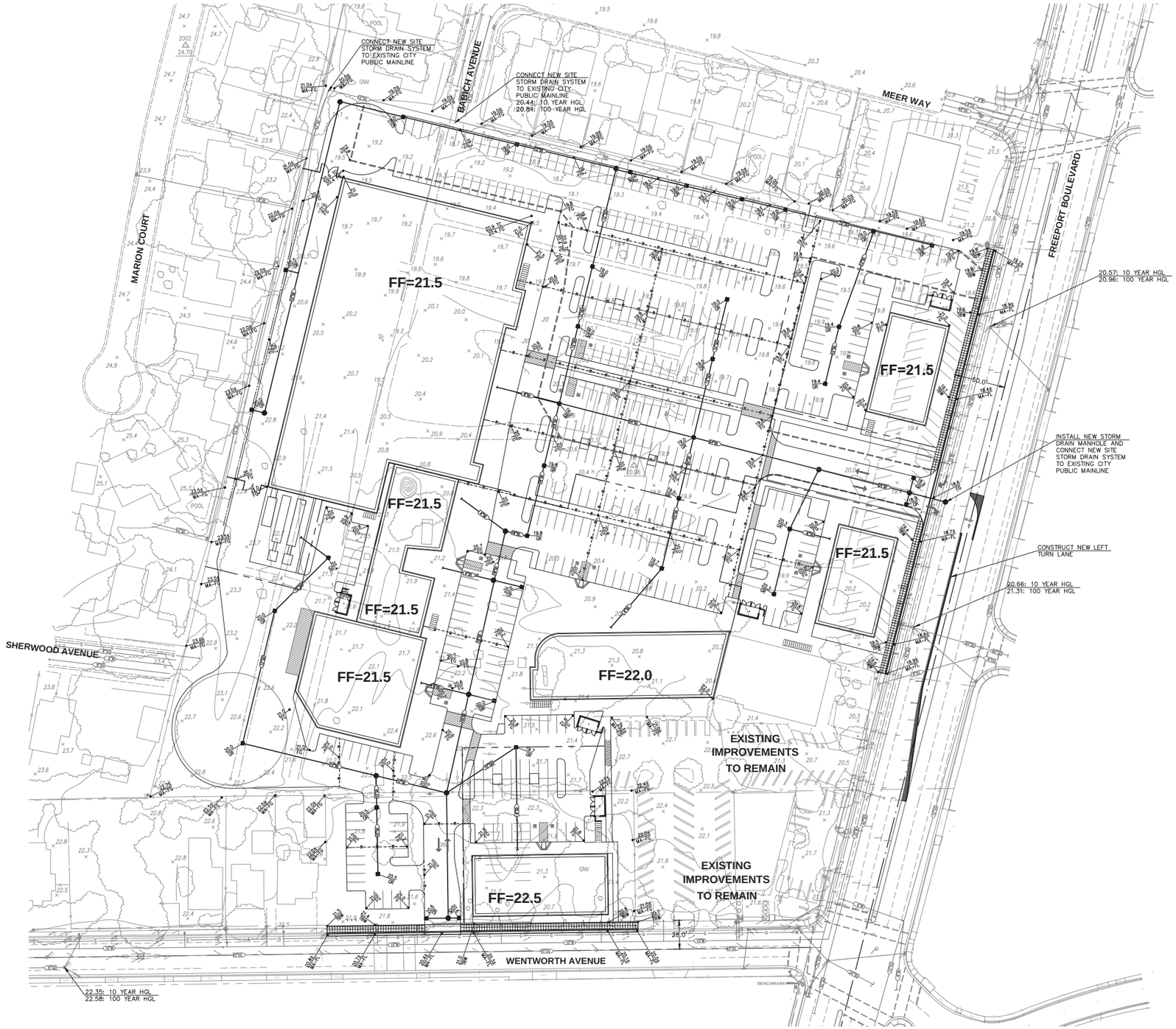
i. Pre-Project: Existing Site Conditions (i/p) r26100rc.txt
ii. Post-Project: LPCC Developed (i/p) r26100rg.txt
iii. Pre-Project: Existing Site Conditions (o/p) r26100rc.gut
iv. Post-Project: LPCC Developed (o/p) r26100rg.gut

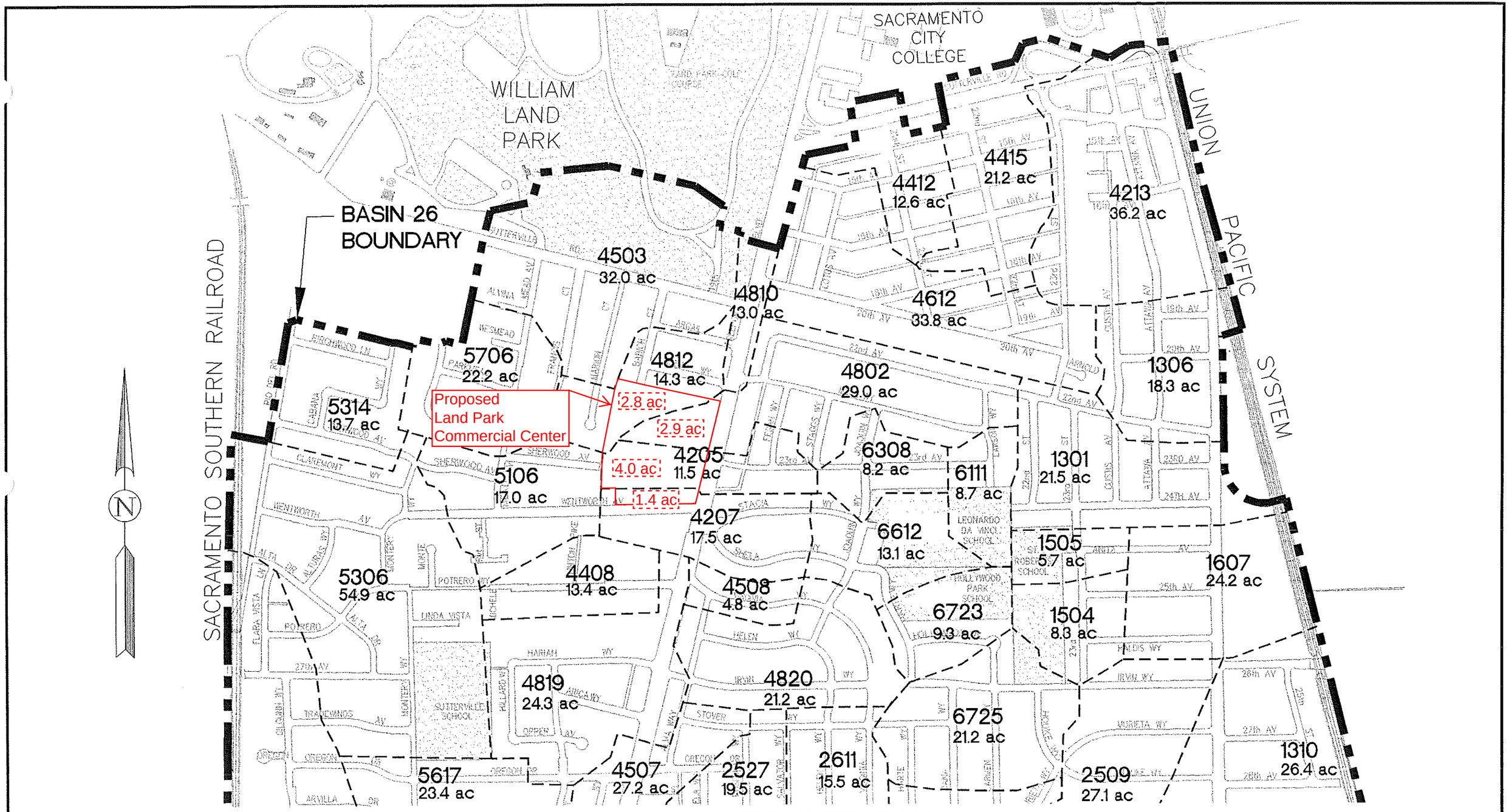
b) Basin 26 SSWMM EXTRAN Model:
i. Pre-Project: Existing Site Conditions (i/p) O26E_EDVc.dat
ii. Post-Project: LPCC Developed (i/p) O26E_EDVg.dat
iii. Pre-Project: Existing Site Conditions (o/p) O26E_EDVc.out
iv. Post-Project: LPCC Developed (o/p) O26E_EDVg.out

c) HEC-RAS steady-flow overland conveyance model for northerly part of site (both pre-project and post-project).

PRELIMINARY GRADING & DRAINAGE EXHIBIT
FOR
LAND PARK COMMERCIAL CENTER

CITY OF SACRAMENTO SACRAMENTO COUNTY CALIFORNIA
FEBRUARY 2016
SHEET 1 OF 1





ENSIGN & BUCKLEY
CONSULTING ENGINEERS
SACRAMENTO
JULY, 2000

CITY OF SACRAMENTO
BASIN 26 DRAINAGE MASTER PLAN
SUB-SHED MAP

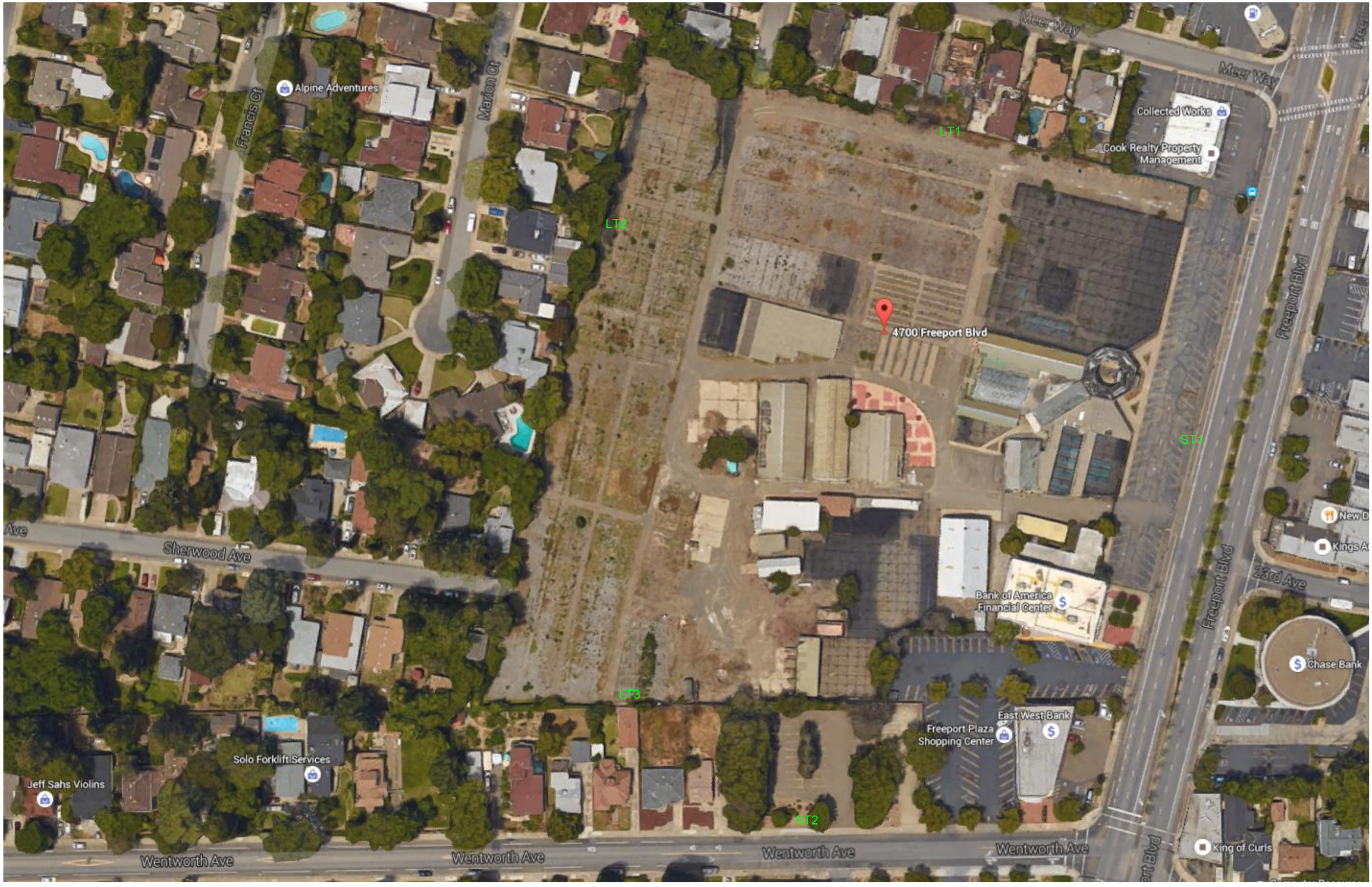
FIGURE 2-1A

APPENDIX G

Noise Level Measurements and Existing Conditions

NOISE LEVEL MEASUREMENTS

EXISTING CONDITIONS


Francis Ct
Alpine Adventures
Marion Ct
Meer Way
Meer Way
Collected Works
Cook Realty Property Management
LT1
LT2
4700 Freeport Blvd
Freeport Blvd
ST1
Ave
Sherwood Ave
Bank of America Financial Center
Freeport Blvd
23rd Ave
Chase Bank
LT3
East West Bank
Freeport Plaza Shopping Center
Solo Forklift Services
Jeff Sahs Violins
ST2
Wentworth Ave
Wentworth Ave
Wentworth Ave
Wentworth Ave
King of Curls

Leq	Time	Adjustment					
44.3	Midnight	10	54.3	54.3			
44.8	1	10	54.8	54.8			
45.6	2	10	55.6	55.6			
44.7	3	10	54.7	54.7			
46.1	4	10	56.1	56.1			
47.4	5	10	57.4	57.4			
50.8	6	10	60.8	60.8			
50.7	7am		50.7	50.7			
48.5	8		48.5	48.5			
46.3	9		46.3	46.3			
46.5	10		46.5	46.5			
48	11		48	48			
45.2	noon		45.2	45.2			
46.4	1		46.4	46.4			
44.6	2		44.6	44.6			
48.2	3		48.2	48.2			
48.9	4		48.9	48.9			
52.8	5		52.8	52.8			
49.9	6		49.9	49.9			
50.5	7	5	55.5	50.5			
48.8	8	5	53.8	48.8			
47.5	9	5	52.5	47.5			
46.3	10	10	56.3	56.3			
44.5	11	10	54.5	54.5			
			53.8	53.4			
			CNEL	LDN			

Leq	Time	Adjustment					
42.3	Midnight	10	52.3	52.3			
42.8	1	10	52.8	52.8			
43.6	2	10	53.6	53.6			
42.7	3	10	52.7	52.7			
44.1	4	10	54.1	54.1			
45.4	5	10	55.4	55.4			
47.4	6	10	57.4	57.4			
52.1	7am		52.1	52.1			
49.9	8		49.9	49.9			
44.3	9		44.3	44.3			
44.5	10		44.5	44.5			
46	11		46	46			
44.2	noon		44.2	44.2			
44.4	1		44.4	44.4			
48.8	2		48.8	48.8			
51.4	3		51.4	51.4			
48.5	4		48.5	48.5			
52.4	5		52.4	52.4			
45.1	6		45.1	45.1			
45.5	7	5	50.5	45.5			
42.1	8	5	47.1	42.1			
41.6	9	5	46.6	41.6			
40.9	10	10	50.9	50.9			
41.9	11	10	51.9	51.9			
			51.4	51.2			
			CNEL	LDN			

Land Park Commercial Center | North Property Line | 24-Hour Measurement with Hourly Statistics

Rec 1 to 24	Slow Response		dBA weighting	
Date hh:mm:ss	LeqPeriod	Leq	Lmax	Lmin
10/22/2014 14:08	1.0 hour	44.6	57.7	40.2
10/22/2014 15:08	1.0 hour	48.2	71.6	39
10/22/2014 16:08	1.0 hour	48.9	74.8	40.2
10/22/2014 17:08	1.0 hour	52.8	76.2	41.3
10/22/2014 18:08	1.0 hour	49.9	64	43.8
10/22/2014 19:08	1.0 hour	50.5	63.6	44.1
10/22/2014 20:08	1.0 hour	48.8	65.9	43.1
10/22/2014 21:08	1.0 hour	47.5	58.5	42.7
10/22/2014 22:08	1.0 hour	46.3	58.2	41.6
10/22/2014 23:08	1.0 hour	44.5	55.7	40.2
10/23/2014 0:08	1.0 hour	44.3	64.5	39.8
10/23/2014 1:08	1.0 hour	44.8	54	40.3
10/23/2014 2:08	1.0 hour	45.6	53.2	39.9
10/23/2014 3:08	1.0 hour	44.7	51.5	40.2
10/23/2014 4:08	1.0 hour	46.1	58.1	41.6
10/23/2014 5:08	1.0 hour	47.4	54	43.7
10/23/2014 6:08	1.0 hour	50.8	69.9	44.4
10/23/2014 7:08	1.0 hour	50.7	63.9	45.1
10/23/2014 8:08	1.0 hour	48.5	69.9	43.1
10/23/2014 9:08	1.0 hour	46.3	64	40.4
10/23/2014 10:08	1.0 hour	46.5	67	39.1
10/23/2014 11:08	1.0 hour	48	60.2	40.3
10/23/2014 12:08	1.0 hour	45.2	68.3	39.1
10/23/2014 13:08	1.0 hour	46.4	65.6	39.8

Land Park Commercial Center | South Proeprty Line | 24-Hour Measurement with Hourly Statistics

Rec 1 to 24	Slow Response	dBA weighting		
Date hh:mm:ss	LeqPeriod	Leq	Lmax	Lmin
10/22/2014 14:14	1.0 hour	48.8	76.9	37.5
10/22/2014 15:14	1.0 hour	51.4	75.6	36.8
10/22/2014 16:14	1.0 hour	48.5	70	37.4
10/22/2014 17:14	1.0 hour	52.4	77.6	37.5
10/22/2014 18:14	1.0 hour	45.1	64.6	38.6
10/22/2014 19:14	1.0 hour	45.5	63.4	39.8
10/22/2014 20:14	1.0 hour	42.1	53.2	38.7
10/22/2014 21:14	1.0 hour	41.6	53.6	38.6
10/22/2014 22:14	1.0 hour	40.9	54.4	38.6
10/22/2014 23:14	1.0 hour	41.9	53.4	38.7
10/23/2014 0:14	1.0 hour	42.3	64.5	39.6
10/23/2014 1:14	1.0 hour	42.8	54	37.5
10/23/2014 2:14	1.0 hour	43.6	53.2	36.8
10/23/2014 3:14	1.0 hour	42.7	51.5	37.4
10/23/2014 4:14	1.0 hour	44.1	58.1	37.5
10/23/2014 5:14	1.0 hour	45.4	54	38.6
10/23/2014 6:14	1.0 hour	47.4	61.2	39.9
10/23/2014 7:14	1.0 hour	52.1	76.6	38.8
10/23/2014 8:14	1.0 hour	49.9	65.5	38.4
10/23/2014 9:14	1.0 hour	44.3	63.7	38.7
10/23/2014 10:14	1.0 hour	44.5	67.3	38.6
10/23/2014 11:14	1.0 hour	46	60.2	38.6
10/23/2014 12:14	1.0 hour	44.2	68.3	38.7
10/23/2014 13:14	1.0 hour	44.4	65.6	39.8

Land Park Commercial Center Western Property Line 24-Hour Measurement Statistics

Start Date	Stop Date	Start Time	Stop Time	LEQ	Lmax	Lmin	L10	L33	L50	L90
10/22/2014	10/23/2014	2:00 PM	2:00 PM	52.5	75	32.5	47	43	41	36.5

The Larson-Davis 700 cannot store hourly statistics for a 24 hour measurement due to battery life limitations. The above statistics are for a 24-hour continuous measurement, with no breakdown of hourly noise levels.

TRAFFIC NOISE

FHWA MODEL WORKSHEETS

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Nrth & Sutt. Sth EXISTING**	BY:	JVL

ADT	25,930			PK HR VOL	2,593
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.6	63.7	61.9	55.9	65.1
MEDIUM TRUCKS	63.5	62.0	55.6	54.1	62.8
HEAVY TRUCKS	67.9	66.4	57.4	58.7	67.1
VEHICULAR NOISE	70.8	69.2	63.9	61.4	70.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.8	69.2	63.9	61.4	70.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.8		70.8
LEQ PK HR WITH TOPO OR BARRIER	70.8	*******	70.8
CNEL WITHOUT TOPO AND BARRIER	70.1		70.1
CNEL WITH TOPO AND BARRIER	70.1	*******	70.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Nrth & Sutt. Sth EXISTING + PROJ**	BY:	JVL

ADT	26,820			PK HR VOL	2,682
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.7	63.8	62.1	56.0	65.2
MEDIUM TRUCKS	63.7	62.2	55.8	54.2	62.9
HEAVY TRUCKS	68.0	66.6	57.6	58.8	67.3
VEHICULAR NOISE	70.9	69.4	64.1	61.5	70.3

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.9	69.4	64.1	61.5	70.3

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.9		70.9
LEQ PK HR WITH TOPO OR BARRIER	70.9	*******	70.9
CNEL WITHOUT TOPO AND BARRIER	70.3		70.3
CNEL WITH TOPO AND BARRIER	70.3	*******	70.3

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Nrth & Sutt. Sth CUMULATIVE**	BY:	JVL

ADT	27,710			PK HR VOL	2,771
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.9	64.0	62.2	56.2	65.4
MEDIUM TRUCKS	63.8	62.3	55.9	54.4	63.1
HEAVY TRUCKS	68.2	66.7	57.7	58.9	67.4
VEHICULAR NOISE	71.1	69.5	64.2	61.7	70.4

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	71.1	69.5	64.2	61.7	70.4

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	71.1		71.1
LEQ PK HR WITH TOPO OR BARRIER	71.1	*******	71.1
CNEL WITHOUT TOPO AND BARRIER	70.4		70.4
CNEL WITH TOPO AND BARRIER	70.4	*******	70.4

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Nrth & Sutt. Sth CUMULATIVE + PROJ**	BY:	JVL

ADT	28,600			PK HR VOL	2,860
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	66.0	64.1	62.4	56.3	65.5
MEDIUM TRUCKS	63.9	62.4	56.1	54.5	63.2
HEAVY TRUCKS	68.3	66.9	57.8	59.1	67.6
VEHICULAR NOISE	71.2	69.6	64.4	61.8	70.6

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	71.2	69.6	64.4	61.8	70.6

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	71.2		71.2
LEQ PK HR WITH TOPO OR BARRIER	71.2	*******	71.2
CNEL WITHOUT TOPO AND BARRIER	70.6		70.6
CNEL WITH TOPO AND BARRIER	70.6	*******	70.6

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Sth & Wentworth EXISTING**	BY:	JVL

ADT	23,270			PK HR VOL	2,327
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.1	63.2	61.5	55.4	64.6
MEDIUM TRUCKS	63.0	61.5	55.2	53.6	62.3
HEAVY TRUCKS	67.4	66.0	56.9	58.2	66.7
VEHICULAR NOISE	70.3	68.7	63.5	60.9	69.7

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.3	68.7	63.5	60.9	69.7

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.3		70.3
LEQ PK HR WITH TOPO OR BARRIER	70.3	*******	70.3
CNEL WITHOUT TOPO AND BARRIER	69.7		69.7
CNEL WITH TOPO AND BARRIER	69.7	*******	69.7

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Sth & Wentworth EXISTING + PROJ**	BY:	JVL

ADT	25,170			PK HR VOL	2,517
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.5	63.6	61.8	55.7	65.0
MEDIUM TRUCKS	63.4	61.9	55.5	54.0	62.7
HEAVY TRUCKS	67.7	66.3	57.3	58.5	67.0
VEHICULAR NOISE	70.7	69.1	63.8	61.3	70.0

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.7	69.1	63.8	61.3	70.0

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.7		70.7
LEQ PK HR WITH TOPO OR BARRIER	70.7	*******	70.7
CNEL WITHOUT TOPO AND BARRIER	70.0		70.0
CNEL WITH TOPO AND BARRIER	70.0	*******	70.0

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Sth & Wentworth CUMULATIVE**	BY:	JVL

ADT	25,540			PK HR VOL	2,554
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.5	63.6	61.9	55.8	65.0
MEDIUM TRUCKS	63.4	61.9	55.6	54.0	62.7
HEAVY TRUCKS	67.8	66.4	57.3	58.6	67.1
VEHICULAR NOISE	70.7	69.1	63.9	61.3	70.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.7	69.1	63.9	61.3	70.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.7		70.7
LEQ PK HR WITH TOPO OR BARRIER	70.7	*******	70.7
CNEL WITHOUT TOPO AND BARRIER	70.1		70.1
CNEL WITH TOPO AND BARRIER	70.1	*******	70.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Sutt. Sth & Wentworth CUMULATIVE + PROJ**	BY:	JVL

ADT	27,440			PK HR VOL	2,744
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.8	63.9	62.2	56.1	65.3
MEDIUM TRUCKS	63.8	62.3	55.9	54.3	63.0
HEAVY TRUCKS	68.1	66.7	57.7	58.9	67.4
VEHICULAR NOISE	71.0	69.5	64.2	61.6	70.4

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	71.0	69.5	64.2	61.6	70.4

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	71.0		71.0
LEQ PK HR WITH TOPO OR BARRIER	71.0	*******	71.0
CNEL WITHOUT TOPO AND BARRIER	70.4		70.4
CNEL WITH TOPO AND BARRIER	70.4	*******	70.4

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Wentworth & Fruit.** **EXISTING**	BY:	JVL

ADT	24,270			PK HR VOL	2,427
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.3	63.4	61.6	55.6	64.8
MEDIUM TRUCKS	63.2	61.7	55.4	53.8	62.5
HEAVY TRUCKS	67.6	66.2	57.1	58.4	66.9
VEHICULAR NOISE	70.5	68.9	63.7	61.1	69.8

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.5	68.9	63.7	61.1	69.8

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.5		70.5
LEQ PK HR WITH TOPO OR BARRIER	70.5	*******	70.5
CNEL WITHOUT TOPO AND BARRIER	69.8		69.8
CNEL WITH TOPO AND BARRIER	69.8	*******	69.8

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Wentworth & Fruit.** **EXISTING + PROJ**	BY:	JVL

ADT	29,070			PK HR VOL	2,907
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	66.1	64.2	62.4	56.4	65.6
MEDIUM TRUCKS	64.0	62.5	56.1	54.6	63.3
HEAVY TRUCKS	68.4	66.9	57.9	59.2	67.6
VEHICULAR NOISE	71.3	69.7	64.4	61.9	70.6

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	71.3	69.7	64.4	61.9	70.6

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	71.3		71.3
LEQ PK HR WITH TOPO OR BARRIER	71.3	*******	71.3
CNEL WITHOUT TOPO AND BARRIER	70.6		70.6
CNEL WITH TOPO AND BARRIER	70.6	*******	70.6

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Wentworth & Fruit.** **CUMULATIVE**	BY:	JVL

ADT	26,380			PK HR VOL	2,638
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	65.7	63.8	62.0	55.9	65.2
MEDIUM TRUCKS	63.6	62.1	55.7	54.2	62.9
HEAVY TRUCKS	67.9	66.5	57.5	58.7	67.2
VEHICULAR NOISE	70.9	69.3	64.0	61.5	70.2

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	70.9	69.3	64.0	61.5	70.2

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	70.9		70.9
LEQ PK HR WITH TOPO OR BARRIER	70.9	*******	70.9
CNEL WITHOUT TOPO AND BARRIER	70.2		70.2
CNEL WITH TOPO AND BARRIER	70.2	*******	70.2

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Freeport Boulevard	DATE:	13-Jan-16
LOCATION:	**Between Wentworth & Fruit.** **CUMULATIVE + PROJ**	BY:	JVL

ADT	31,180			PK HR VOL	3,118
SPEED	30				
PK HR %	10				
DIST CTL	40				
DIST N/F	76	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		13.5
DIST WALL	40		MED TRUCK SLE DIST		12.8
DIST W/OB	0		HVY TRUCK SLE DIST		12.8
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				
SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0		AUTOMOBILES =	0.00	
ROAD	0.0		MEDIUM TRUCKS=	2.30	
			HEAVY TRUCKS =	8.01	
GRADE:	0.0	%	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	66.4	64.5	62.7	56.7	65.9
MEDIUM TRUCKS	64.3	62.8	56.4	54.9	63.6
HEAVY TRUCKS	68.7	67.2	58.2	59.5	67.9
VEHICULAR NOISE	71.6	70.0	64.7	62.2	70.9

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	71.6	70.0	64.7	62.2	70.9

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	71.6		71.6
LEQ PK HR WITH TOPO OR BARRIER	71.6	*******	71.6
CNEL WITHOUT TOPO AND BARRIER	70.9		70.9
CNEL WITH TOPO AND BARRIER	70.9	*******	70.9

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Sutterville Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **EXISTING**	BY:	JVL

ADT	13,210			PK HR VOL	1,321
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	61.0	59.1	57.3	51.3	60.5
MEDIUM TRUCKS	58.8	57.3	50.9	49.4	58.1
HEAVY TRUCKS	63.2	61.7	52.7	54.0	62.4
VEHICULAR NOISE	66.1	64.5	59.3	56.7	65.5

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	66.1	64.5	59.3	56.7	65.5

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	66.1		66.1
LEQ PK HR WITH TOPO OR BARRIER	66.1	*******	66.1
CNEL WITHOUT TOPO AND BARRIER	65.5		65.5
CNEL WITH TOPO AND BARRIER	65.5	*******	65.5

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Sutterville Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **EXISTING + PROJ**	BY:	JVL

ADT	14,350			PK HR VOL	1,435
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	61.4	59.5	57.7	51.6	60.9
MEDIUM TRUCKS	59.2	57.7	51.3	49.7	58.4
HEAVY TRUCKS	63.5	62.1	53.1	54.3	62.8
VEHICULAR NOISE	66.5	64.9	59.7	57.1	65.8

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	66.5	64.9	59.7	57.1	65.8

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	66.5		66.5
LEQ PK HR WITH TOPO OR BARRIER	66.5	*******	66.5
CNEL WITHOUT TOPO AND BARRIER	65.8		65.8
CNEL WITH TOPO AND BARRIER	65.8	*******	65.8

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Sutterville Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **CUMULATIVE**	BY:	JVL

ADT	15,140			PK HR VOL	1,514
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	61.6	59.7	57.9	51.9	61.1
MEDIUM TRUCKS	59.4	57.9	51.5	50.0	58.7
HEAVY TRUCKS	63.8	62.3	53.3	54.6	63.0
VEHICULAR NOISE	66.7	65.1	59.9	57.3	66.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	66.7	65.1	59.9	57.3	66.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	66.7		66.7
LEQ PK HR WITH TOPO OR BARRIER	66.7	*******	66.7
CNEL WITHOUT TOPO AND BARRIER	66.1		66.1
CNEL WITH TOPO AND BARRIER	66.1	*******	66.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Sutterville Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **CUMULATIVE + PROJ**	BY:	JVL

ADT	16,280			PK HR VOL	1,628
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	61.9	60.0	58.2	52.2	61.4
MEDIUM TRUCKS	59.7	58.2	51.8	50.3	59.0
HEAVY TRUCKS	64.1	62.7	53.6	54.9	63.4
VEHICULAR NOISE	67.0	65.4	60.2	57.6	66.4

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	67.0	65.4	60.2	57.6	66.4

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	67.0		67.0
LEQ PK HR WITH TOPO OR BARRIER	67.0	*******	67.0
CNEL WITHOUT TOPO AND BARRIER	66.4		66.4
CNEL WITH TOPO AND BARRIER	66.4	*******	66.4

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Fruitridge Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **EXISTING**	BY:	JVL

ADT	17,260			PK HR VOL	1,726
SPEED	30				
PK HR %	10				
DIST CTL	30				
DIST N/F	52	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		15.8
DIST WALL	30		MED TRUCK SLE DIST		15.2
DIST W/OB	0		HVY TRUCK SLE DIST		15.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	63.1	61.2	59.5	53.4	62.6
MEDIUM TRUCKS	61.0	59.5	53.1	51.6	60.3
HEAVY TRUCKS	65.4	63.9	54.9	56.1	64.6
VEHICULAR NOISE	68.3	66.7	61.5	58.9	67.6

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	68.3	66.7	61.5	58.9	67.6

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	68.3		68.3
LEQ PK HR WITH TOPO OR BARRIER	68.3	*******	68.3
CNEL WITHOUT TOPO AND BARRIER	67.6		67.6
CNEL WITH TOPO AND BARRIER	67.6	*******	67.6

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center			JN:	8814
ROADWAY:	Fruitridge Road			DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park**	**EXISTING + PROJ**		BY:	JVL
ADT	18,830			PK HR VOL	1,883
SPEED	30				
PK HR %	10				
DIST CTL	30				
DIST N/F	52	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		15.8
DIST WALL	30		MED TRUCK SLE DIST		15.2
DIST W/OB	0		HVY TRUCK SLE DIST		15.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				
SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	63.5	61.6	59.8	53.8	63.0
MEDIUM TRUCKS	61.4	59.9	53.5	52.0	60.6
HEAVY TRUCKS	65.7	64.3	55.3	56.5	65.0
VEHICULAR NOISE	68.7	67.1	61.8	59.3	68.0

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	68.7	67.1	61.8	59.3	68.0

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	68.7		68.7
LEQ PK HR WITH TOPO OR BARRIER	68.7	*******	68.7
CNEL WITHOUT TOPO AND BARRIER	68.0		68.0
CNEL WITH TOPO AND BARRIER	68.0	*******	68.0

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Fruitridge Road	DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park** **CUMULATIVE**	BY:	JVL

ADT	18,580			PK HR VOL	1,858
SPEED	30				
PK HR %	10				
DIST CTL	30				
DIST N/F	52	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		15.8
DIST WALL	30		MED TRUCK SLE DIST		15.2
DIST W/OB	0		HVY TRUCK SLE DIST		15.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	63.5	61.6	59.8	53.7	63.0
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.6
HEAVY TRUCKS	65.7	64.3	55.2	56.5	64.9
VEHICULAR NOISE	68.6	67.0	61.8	59.2	68.0

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	68.6	67.0	61.8	59.2	68.0

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	68.6		68.6
LEQ PK HR WITH TOPO OR BARRIER	68.6	*******	68.6
CNEL WITHOUT TOPO AND BARRIER	68.0		68.0
CNEL WITH TOPO AND BARRIER	68.0	*******	68.0

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center			JN:	8814
ROADWAY:	Fruitridge Road			DATE:	13-Jan-16
LOCATION:	**Freeport to S. Land Park**	**CUMULATIVE + PROJ**		BY:	JVL

ADT	20,150			PK HR VOL	2,015
SPEED	30				
PK HR %	10				
DIST CTL	30				
DIST N/F	52	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		15.8
DIST WALL	30		MED TRUCK SLE DIST		15.2
DIST W/OB	0		HVY TRUCK SLE DIST		15.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	63.8	61.9	60.1	54.1	63.3
MEDIUM TRUCKS	61.7	60.2	53.8	52.3	60.9
HEAVY TRUCKS	66.0	64.6	55.6	56.8	65.3
VEHICULAR NOISE	69.0	67.4	62.1	59.6	68.3

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	69.0	67.4	62.1	59.6	68.3

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	69.0		69.0
LEQ PK HR WITH TOPO OR BARRIER	69.0	*******	69.0
CNEL WITHOUT TOPO AND BARRIER	68.3		68.3
CNEL WITH TOPO AND BARRIER	68.3	*******	68.3

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center			JN:	8814
ROADWAY:	Wentworth Avenue			DATE:	13-Jan-16
LOCATION:	**West of Freeport**	**EXISTING**		BY:	JVL

ADT	3,730			PK HR VOL	373
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	55.5	53.6	51.8	45.8	55.0
MEDIUM TRUCKS	53.3	51.8	45.4	43.9	52.6
HEAVY TRUCKS	57.7	56.3	47.2	48.5	57.0
VEHICULAR NOISE	60.6	59.1	53.8	51.2	60.0

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	60.6	59.1	53.8	51.2	60.0

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	60.6		60.6
LEQ PK HR WITH TOPO OR BARRIER	60.6	*******	60.6
CNEL WITHOUT TOPO AND BARRIER	60.0		60.0
CNEL WITH TOPO AND BARRIER	60.0	*******	60.0

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Wentworth Avenue	DATE:	13-Jan-16
LOCATION:	**West of Freeport** **EXISTING + PROJ**	BY:	JVL

ADT	6,090			PK HR VOL	609
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.6	55.7	54.0	47.9	57.1
MEDIUM TRUCKS	55.4	53.9	47.6	46.0	54.7
HEAVY TRUCKS	59.8	58.4	49.3	50.6	59.1
VEHICULAR NOISE	62.8	61.2	55.9	53.4	62.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.8	61.2	55.9	53.4	62.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.8		62.8
LEQ PK HR WITH TOPO OR BARRIER	62.8	*******	62.8
CNEL WITHOUT TOPO AND BARRIER	62.1		62.1
CNEL WITH TOPO AND BARRIER	62.1	*******	62.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Wentworth Avenue	DATE:	13-Jan-16
LOCATION:	**West of Freeport** **CUMULATIVE**	BY:	JVL

ADT	3,810			PK HR VOL	381
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	55.6	53.7	51.9	45.9	55.1
MEDIUM TRUCKS	53.4	51.9	45.5	44.0	52.7
HEAVY TRUCKS	57.8	56.3	47.3	48.6	57.0
VEHICULAR NOISE	60.7	59.1	53.9	51.3	60.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	60.7	59.1	53.9	51.3	60.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	60.7		60.7
LEQ PK HR WITH TOPO OR BARRIER	60.7	*******	60.7
CNEL WITHOUT TOPO AND BARRIER	60.1		60.1
CNEL WITH TOPO AND BARRIER	60.1	*******	60.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Wentworth Avenue	DATE:	13-Jan-16
LOCATION:	**West of Freeport** **CUMULATIVE + PROJ**	BY:	JVL

ADT	6,170			PK HR VOL	617
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.7	55.8	54.0	48.0	57.2
MEDIUM TRUCKS	55.5	54.0	47.6	46.1	54.8
HEAVY TRUCKS	59.9	58.4	49.4	50.7	59.1
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.2

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.2

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.8		62.8
LEQ PK HR WITH TOPO OR BARRIER	62.8	*******	62.8
CNEL WITHOUT TOPO AND BARRIER	62.2		62.2
CNEL WITH TOPO AND BARRIER	62.2	*******	62.2

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center			JN:	8814
ROADWAY:	South Land Park			DATE:	13-Jan-16
LOCATION:	**Fruitridge to Sutterville**	**EXISTING**		BY:	JVL

ADT	6,050			PK HR VOL	605
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.6	55.7	53.9	47.9	57.1
MEDIUM TRUCKS	55.4	53.9	47.5	46.0	54.7
HEAVY TRUCKS	59.8	58.4	49.3	50.6	59.1
VEHICULAR NOISE	62.7	61.2	55.9	53.3	62.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.7	61.2	55.9	53.3	62.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.7		62.7
LEQ PK HR WITH TOPO OR BARRIER	62.7	*******	62.7
CNEL WITHOUT TOPO AND BARRIER	62.1		62.1
CNEL WITH TOPO AND BARRIER	62.1	*******	62.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	South Land Park	DATE:	13-Jan-16
LOCATION:	**Fruitridge to Sutterville** **EXISTING + PROJ**	BY:	JVL

ADT	6,140			PK HR VOL	614
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.7	55.8	54.0	48.0	57.2
MEDIUM TRUCKS	55.5	54.0	47.6	46.1	54.8
HEAVY TRUCKS	59.8	58.4	49.4	50.6	59.1
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.8		62.8
LEQ PK HR WITH TOPO OR BARRIER	62.8	*******	62.8
CNEL WITHOUT TOPO AND BARRIER	62.1		62.1
CNEL WITH TOPO AND BARRIER	62.1	*******	62.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	South Land Park	DATE:	13-Jan-16
LOCATION:	**Fruitridge to Sutterville** **CUMULATIVE**	BY:	JVL

ADT	6,060			PK HR VOL	606
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.6	55.7	54.0	47.9	57.1
MEDIUM TRUCKS	55.4	53.9	47.5	46.0	54.7
HEAVY TRUCKS	59.8	58.4	49.3	50.6	59.1
VEHICULAR NOISE	62.7	61.2	55.9	53.3	62.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.7	61.2	55.9	53.3	62.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.7		62.7
LEQ PK HR WITH TOPO OR BARRIER	62.7	*******	62.7
CNEL WITHOUT TOPO AND BARRIER	62.1		62.1
CNEL WITH TOPO AND BARRIER	62.1	*******	62.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	South Land Park	DATE:	13-Jan-16
LOCATION:	**Fruitridge to Sutterville** **CUMULATIVE + PROJ**	BY:	JVL

ADT	6,150			PK HR VOL	615
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	57.7	55.8	54.0	48.0	57.2
MEDIUM TRUCKS	55.5	54.0	47.6	46.1	54.8
HEAVY TRUCKS	59.8	58.4	49.4	50.6	59.1
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.1

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	62.8	61.2	56.0	53.4	62.1

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	62.8		62.8
LEQ PK HR WITH TOPO OR BARRIER	62.8	*******	62.8
CNEL WITHOUT TOPO AND BARRIER	62.1		62.1
CNEL WITH TOPO AND BARRIER	62.1	*******	62.1

FHWA - HIGHWAY TRAFFIC NOISE PREDICTION MODEL

(modified for CNEL)

DUDEK

PROJECT:	Land Park Commercial Center	JN:	8814
ROADWAY:	Meer Way	DATE:	13-Jan-16
LOCATION:	**West of Freeport** **All Traff. Scenarios**	BY:	JVL

ADT	590			PK HR VOL	59
SPEED	30				
PK HR %	10				
DIST CTL	20				
DIST N/F	12	(M=76,P=52,S=36,C=12)	AUTO SLE DISTANCE		19.7
DIST WALL	20		MED TRUCK SLE DIST		19.3
DIST W/OB	0		HVY TRUCK SLE DIST		19.3
HTH WALL	0.0	********			
HTH OBS	5.0				
AMBIENT	0.0				
ROADWAY VIEW:					
LF ANGLE	-25				
RT ANGLE	25				
DF ANGLE	50				

SITE CONDITIONS:		(10=HARD SITE, 15=SOFT SITE)			
AUTOM	10.0				
MED TR	10.0				
HVY TR	10.0				
BARRIER	0	(0=WALL,1=BERM)			
ELEVATIONS:					
PAD	0.0	AUTOMOBILES =	0.00		
ROAD	0.0	MEDIUM TRUCKS=	2.30		
		HEAVY TRUCKS =	8.01		
GRADE:	0.0 %	GRADE ADJUSTM=	0.0	(TO HEAVY TRUCKS)	

VEHICLE DISTRIBUTION:

	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9360
MEDIUM TRUCKS	0.848	0.049	0.103	0.0370
HEAVY TRUCKS	0.865	0.027	0.108	0.0230

NOISE IMPACTS WITHOUT TOPO OR BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
AUTOMOBILES	47.5	45.6	43.8	37.8	47.0
MEDIUM TRUCKS	45.3	43.8	37.4	35.9	44.6
HEAVY TRUCKS	49.7	48.2	39.2	40.5	48.9
VEHICULAR NOISE	52.6	51.0	45.8	43.2	52.0

NOISE IMPACTS WITH TOPO AND BARRIER SHIELDING:

	LEQ PK HR	LEQ DAY	LEQ EVE	LEQ NIGHT	CNEL
VEHICULAR NOISE	52.6	51.0	45.8	43.2	52.0

AMBIENT:	W/O AMBIENT		W/ AMBIENT
LEQ PK HR WITHOUT TOPO OR BARRIER	52.6		52.6
LEQ PK HR WITH TOPO OR BARRIER	52.6	*******	52.6
CNEL WITHOUT TOPO AND BARRIER	52.0		52.0
CNEL WITH TOPO AND BARRIER	52.0	*******	52.0

MECHANICAL EQUIPMENT

NOISE LEVEL WORKSHEETS

MECHANICAL EQUIPMENT NOISE LEVEL

Receiver Coordinates: 470 710 0

Equipment	Source Coordinates X	Y	Z	Receiver Coordinates X	Y	Location-Equipment	Leq (h) at 50' (dBA)	Receiver Elevation (feet)	Source Elevation (feet)	Source to Receiver (feet)	Source to Barrier (feet)	Receiver to Barrier (feet)	Barrier (base) (feet)	Barrier Height (feet)	Fresnel No. at 500 Hz	Barrier Attenuation (dBA)	Leq w/o Barrier (dBA)	Leq w/Barrier (dBA)
3-ton	615	85	22	470	710	#1 (3-ton)	44	5	25.0	642	40	602	22	3.5	0.04	6	22	16
3-ton	870	85	22	470	710	#2 (3-ton)	44	5	25.0	742	40	702	22	3.5	0.03	6	21	15
5-ton	435	265	22	470	710	#3 (5-ton)	48	5	25.0	446	90	356	22	3.5	0.13	7	29	22
5-ton	400	500	22	470	710	#4 (5-ton)	48	5	25.0	221	60	161	22	3.5	0.35	10	35	25
3-ton	490	490	22	470	710	#5 (3-ton)	44	5	25.0	221	30	191	22	3.5	0.18	8	31	23
3-ton	580	490	22	470	710	#6 (3-ton)	44	5	25.0	246	30	216	22	3.5	0.15	8	30	23
3-ton	620	590	22	470	710	#7 (3-ton)	44	5	25.0	192	40	152	22	3.5	0.30	10	33	23
3-ton	640	490	22	470	710	#8 (3-ton)	44	5	25.0	278	130	148	22	3.5	0.62	12	29	18
7.5-ton	690	550	22	470	710	#9 (7.5-ton)	50	5	25.0	272	85	187	22	3.5	0.35	10	36	26
3-ton	780	590	22	470	710	#10 (3-ton)	44	5	25.0	332	40	292	22	3.5	0.11	7	28	21
3-ton	780	490	22	470	710	#11 (3-ton)	44	5	25.0	380	130	250	22	3.5	0.28	9	27	17
																Total Leq	42	28

Barrier Attenuation limited to 20 dB maximum

Equip./Loc.	X	Y	Elev. At Roof or Ground	Source Height	LwA Single Source	Number of Units	Sound Level at 50 feet Total	Equip. Location Site / Number
1	615	85	0	3	76	1	44	1
2	870	85	0	3	76	1	44	2
3	435	265	0	3	80	1	48	3
4	400	500	0	3	80	1	48	4
5	490	490	0	3	76	1	44	5
6	580	490	0	3	76	1	44	6
7	620	590	0	3	76	1	44	7
8	640	490	0	3	76	1	44	8
9	690	550	0	3	82	1	50	9
10	780	590	0	3	76	1	44	10
11	780	490	0	3	76	1	44	11

Frequency (in Hz) 500

				Building Elevation	Roof Elevation
Receivers at P.L.				0	15
West - Southern Half	470	710	0		

MECHANICAL EQUIPMENT NOISE LEVEL

Receiver Coordinates: 750 710 0

Equipment	Source Coordinates X	Y	Z	Receiver Coordinates X	Y	Location-Equipment	Leq (h) at 50' (dBA)	Receiver Elevation (feet)	Source Elevation (feet)	Source to Receiver (feet)	Source to Barrier (feet)	Receiver to Barrier (feet)	Barrier (base) (feet)	Barrier Height (feet)	Fresnel No. at 500 Hz	Barrier Attenuation (dBA)	Leq w/o Barrier (dBA)	Leq w/Barrier (dBA)
3-ton	615	85	22	750	710	#1 (3-ton)	44	5	25.0	639	40	599	22	3.5	0.04	6	22	16
3-ton	870	85	22	750	710	#2 (3-ton)	44	5	25.0	636	40	596	22	3.5	0.04	6	22	17
5-ton	435	265	22	750	710	#3 (5-ton)	48	5	25.0	545	90	455	22	3.5	0.09	7	28	21
5-ton	400	500	22	750	710	#4 (5-ton)	48	5	25.0	408	60	348	22	3.5	0.10	7	30	23
3-ton	490	490	22	750	710	#5 (3-ton)	44	5	25.0	341	30	311	22	3.5	0.08	7	28	21
3-ton	580	490	22	750	710	#6 (3-ton)	44	5	25.0	278	30	248	22	3.5	0.12	7	29	22
3-ton	620	590	22	750	710	#7 (3-ton)	44	5	25.0	177	40	137	22	3.5	0.36	10	33	23
3-ton	640	490	22	750	710	#8 (3-ton)	44	5	25.0	246	130	116	22	3.5	0.88	13	30	17
7.5-ton	690	550	22	750	710	#9 (7.5-ton)	50	5	25.0	171	85	86	22	3.5	1.11	14	40	26
3-ton	780	590	22	750	710	#10 (3-ton)	44	5	25.0	124	40	84	22	3.5	0.78	13	36	24
3-ton	780	490	22	750	710	#11 (3-ton)	44	5	25.0	222	130	92	22	3.5	1.21	14	31	17
																Total Leq	43	26

Barrier Attenuation limited to 20 dB maximum

Equip./Loc.	X	Y	Elev. At Roof or Ground	Source Height	LwA Single Source	Number of Units	Sound Level at 50 feet Total	Equip. Location Site / Number
1	615	85	0	3	76	1	44	1
2	870	85	0	3	76	1	44	2
3	435	265	0	3	80	1	48	3
4	400	500	0	3	80	1	48	4
5	490	490	0	3	76	1	44	5
6	580	490	0	3	76	1	44	6
7	620	590	0	3	76	1	44	7
8	640	490	0	3	76	1	44	8
9	690	550	0	3	82	1	50	9
10	780	590	0	3	76	1	44	10
11	780	490	0	3	76	1	44	11

Frequency (in Hz) 500

				Building Elevation	Roof Elevation
Receivers at P.L.				0	15
West - Northern Half	750	710	0		

MECHANICAL EQUIPMENT NOISE LEVEL

Receiver Coordinates: 910 545 0

Equipment	Source Coordinates X	Y	Z	Receiver Coordinates X	Y	Location-Equipment	Leq (h) at 50' (dBA)	Receiver Elevation (feet)	Source Elevation (feet)	Source to Receiver (feet)	Source to Barrier (feet)	Receiver to Barrier (feet)	Barrier (base) (feet)	Barrier Height (feet)	Fresnel No. at 500 Hz	Barrier Attenuation (dBA)	Leq w/o Barrier (dBA)	Leq w/Barrier (dBA)
3-ton	615	85	22	910	545	#1 (3-ton)	44	5	25.0	546	40	506	22	3.5	0.05	6	24	18
3-ton	870	85	22	910	545	#2 (3-ton)	44	5	25.0	462	40	422	22	3.5	0.06	6	25	19
5-ton	435	265	22	910	545	#3 (5-ton)	48	5	25.0	551	90	461	22	3.5	0.08	7	27	21
5-ton	400	500	22	910	545	#4 (5-ton)	48	5	25.0	512	60	452	22	3.5	0.07	6	28	22
3-ton	490	490	22	910	545	#5 (3-ton)	44	5	25.0	424	30	394	22	3.5	0.06	6	26	20
3-ton	580	490	22	910	545	#6 (3-ton)	44	5	25.0	335	30	305	22	3.5	0.09	7	28	21
3-ton	620	590	22	910	545	#7 (3-ton)	44	5	25.0	293	40	253	22	3.5	0.13	8	29	21
3-ton	640	490	22	910	545	#8 (3-ton)	44	5	25.0	276	130	146	22	3.5	0.64	12	29	18
7.5-ton	690	550	22	910	545	#9 (7.5-ton)	50	5	25.0	220	85	135	22	3.5	0.57	12	37	26
3-ton	780	590	22	910	545	#10 (3-ton)	44	5	25.0	138	40	98	22	3.5	0.61	12	36	24
3-ton	780	490	22	910	545	#11 (3-ton)	44	5	25.0	141	30	111	22	3.5	0.42	11	35	25
																Total Leq	42	26

Barrier Attenuation limited to 20 dB maximum

Equip./Loc.	X	Y	Elev. At Roof or Ground	Source Height	LwA Single Source	Number of Units	Sound Level at 50 feet Total	Equip. Location Site / Number
1	615	85	0	3	76	1	44	1
2	870	85	0	3	76	1	44	2
3	435	265	0	3	80	1	48	3
4	400	500	0	3	80	1	48	4
5	490	490	0	3	76	1	44	5
6	580	490	0	3	76	1	44	6
7	620	590	0	3	76	1	44	7
8	640	490	0	3	76	1	44	8
9	690	550	0	3	82	1	50	9
10	780	590	0	3	76	1	44	10
11	780	490	0	3	76	1	44	11

Frequency (in Hz) 500

				Building Elevation	Roof Elevation
Receivers at P.L.				0	15
North - Western Portion	910	545	0		

MECHANICAL EQUIPMENT NOISE LEVEL

Receiver Coordinates: 910 280 0

Equipment	Source Coordinates X	Y	Z	Receiver Coordinates X	Y	Location-Equipment	Leq (h) at 50' (dBA)	Receiver Elevation (feet)	Source Elevation (feet)	Source to Receiver (feet)	Source to Barrier (feet)	Receiver to Barrier (feet)	Barrier (base) (feet)	Barrier Height (feet)	Fresnel No. at 500 Hz	Barrier Attenuation (dBA)	Leq w/o Barrier (dBA)	Leq w/Barrier (dBA)
3-ton	615	85	22	910	280	#1 (3-ton)	44	5	25.0	354	40	314	22	3.5	0.10	7	27	20
3-ton	870	85	22	910	280	#2 (3-ton)	44	5	25.0	199	40	159	22	3.5	0.28	9	32	23
5-ton	435	265	22	910	280	#3 (5-ton)	48	5	25.0	475	90	385	22	3.5	0.11	7	29	22
5-ton	400	500	22	910	280	#4 (5-ton)	48	5	25.0	555	60	495	22	3.5	0.06	6	27	21
3-ton	490	490	22	910	280	#5 (3-ton)	44	5	25.0	470	30	440	22	3.5	0.05	6	25	19
3-ton	580	490	22	910	280	#6 (3-ton)	44	5	25.0	391	30	361	22	3.5	0.07	6	26	20
3-ton	620	590	22	910	280	#7 (3-ton)	44	5	25.0	424	40	384	22	3.5	0.07	6	26	19
3-ton	640	490	22	910	280	#8 (3-ton)	44	5	25.0	342	130	212	22	3.5	0.36	10	28	18
7.5-ton	690	550	22	910	280	#9 (7.5-ton)	50	5	25.0	348	85	263	22	3.5	0.20	8	33	25
3-ton	780	590	22	910	280	#10 (3-ton)	44	5	25.0	336	40	296	22	3.5	0.10	7	28	21
3-ton	780	490	22	910	280	#11 (3-ton)	44	5	25.0	247	130	117	22	3.5	0.87	13	30	17
																Total Leq	40	28

Barrier Attenuation limited to 20 dB maximum

Equip./Loc.	X	Y	Elev. At Roof or Ground	Source Height	LwA Single Source	Number of Units	Sound Level at 50 feet Total	Equip. Location Site / Number
1	615	85	0	3	76	1	44	1
2	870	85	0	3	76	1	44	2
3	435	265	0	3	80	1	48	3
4	400	500	0	3	80	1	48	4
5	490	490	0	3	76	1	44	5
6	580	490	0	3	76	1	44	6
7	620	590	0	3	76	1	44	7
8	640	490	0	3	76	1	44	8
9	690	550	0	3	82	1	50	9
10	780	590	0	3	76	1	44	10
11	780	490	0	3	76	1	44	11

Frequency (in Hz) 500

				Building Elevation	Roof Elevation
Receivers at P.L.				0	22
North - Central Portion	910	280	0		

APPENDIX H

Traffic Model Outputs

Land Park Commercial

Traffic Counts

Google earth

feet 600

meters 200

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-001 Freeport Blvd & Sutterville Rd North
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	46	59	0	0	105	68	0	110	0	178	0	192	177	0	369	0	0	0	0	0	652	0
7:15	90	88	0	0	178	54	0	119	0	173	0	261	226	0	487	0	0	0	0	0	838	0
7:30	115	84	0	0	199	81	0	174	0	255	0	255	193	0	448	0	0	0	0	0	902	0
7:45	149	113	0	0	262	100	0	209	0	309	0	238	174	0	412	0	0	0	0	0	983	0
Total	400	344	0	0	744	303	0	612	0	915	0	946	770	0	1716	0	0	0	0	0	3375	0
8:00	128	128	0	0	256	88	0	175	0	263	0	202	149	0	351	0	0	0	0	0	870	0
8:15	97	103	0	0	200	63	0	120	0	183	0	170	186	0	356	0	0	0	0	0	739	0
8:30	52	94	0	0	146	81	0	69	0	150	0	199	177	0	376	0	0	0	0	0	672	0
8:45	49	106	0	0	155	115	0	96	0	211	0	196	194	0	390	0	0	0	0	0	756	0
Total	326	431	0	0	757	347	0	460	0	807	0	767	706	0	1473	0	0	0	0	0	3037	0
16:00	79	167	0	0	246	211	0	112	0	323	0	113	109	0	222	0	0	0	0	0	791	0
16:15	105	191	0	0	296	208	0	104	0	312	0	103	103	0	206	0	0	0	0	0	814	0
16:30	105	174	0	0	279	189	0	78	0	267	0	123	103	0	226	0	0	0	0	0	772	0
16:45	100	189	0	0	289	145	0	89	0	234	0	136	124	0	260	0	0	0	0	0	783	0
Total	389	721	0	0	1110	753	0	383	0	1136	0	475	439	0	914	0	0	0	0	0	3160	0
17:00	108	226	0	0	334	191	0	98	0	289	0	130	110	0	240	0	0	0	0	0	863	0
17:15	99	235	0	0	334	194	0	87	0	281	0	125	127	0	252	0	0	0	0	0	867	0
17:30	108	214	0	0	322	218	0	79	0	297	0	112	117	0	229	0	0	0	0	0	848	0
17:45	94	211	0	0	305	172	0	79	0	251	0	114	111	0	225	0	0	0	0	0	781	0
Total	409	886	0	0	1295	775	0	343	0	1118	0	481	465	0	946	0	0	0	0	0	3359	0
Grand Total	1524	2382	0	0	3906	2178	0	1798	0	3976	0	2669	2380	0	5049	0	0	0	0	0	12931	0
Apprch %	39.0%	61.0%	0.0%	0.0%		54.8%	0.0%	45.2%	0.0%		0.0%	52.9%	47.1%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	11.8%	18.4%	0.0%	0.0%	30.2%	16.8%	0.0%	13.9%	0.0%	30.7%	0.0%	20.6%	18.4%	0.0%	39.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	90	88	0	0	178	54	0	119	0	173	0	261	226	0	487	0	0	0	0	0	838
7:30	115	84	0	0	199	81	0	174	0	255	0	255	193	0	448	0	0	0	0	0	902
7:45	149	113	0	0	262	100	0	209	0	309	0	238	174	0	412	0	0	0	0	0	983
8:00	128	128	0	0	256	88	0	175	0	263	0	202	149	0	351	0	0	0	0	0	870
Total Volume	482	413	0	0	895	323	0	677	0	1000	0	956	742	0	1698	0	0	0	0	0	3593
% App Total	53.9%	46.1%	0.0%	0.0%		32.3%	0.0%	67.7%	0.0%		0.0%	56.3%	43.7%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.809	.807	.000	.000	.854	.808	.000	.810	.000	.809	.000	.916	.821	.000	.872	.000	.000	.000	.000	.000	.914

PM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	100	189	0	0	289	145	0	89	0	234	0	136	124	0	260	0	0	0	0	0	783
17:00	108	226	0	0	334	191	0	98	0	289	0	130	110	0	240	0	0	0	0	0	863
17:15	99	235	0	0	334	194	0	87	0	281	0	125	127	0	252	0	0	0	0	0	867
17:30	108	214	0	0	322	218	0	79	0	297	0	112	117	0	229	0	0	0	0	0	848
Total Volume	415	864	0	0	1279	748	0	353	0	1101	0	503	478	0	981	0	0	0	0	0	3361
% App Total	32.4%	67.6%	0.0%	0.0%		67.9%	0.0%	32.1%	0.0%		0.0%	51.3%	48.7%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.961	.919	.000	.000	.957	.858	.000	.901	.000	.927	.000	.925	.941	.000	.943	.000	.000	.000	.000	.000	.969

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-001 Freeport Blvd & Sutterville Rd North
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	1	0	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	1	4
7:15	0	0	0	6	0	0	0	0	8	0	0	0	1	0	1	0	0	0	0	0	1	14
7:30	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5
7:45	0	0	0	1	0	0	0	0	3	0	0	1	1	0	2	0	0	0	0	0	2	4
Total	0	0	0	11	0	0	0	0	16	0	0	2	2	0	4	0	0	0	0	0	4	27
8:00	0	0	0	4	0	1	0	0	1	1	0	2	0	0	2	0	0	0	0	0	3	5
8:15	0	1	0	2	1	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	4	4
8:30	0	0	0	1	0	0	0	0	8	0	0	1	0	0	1	0	0	0	0	0	1	9
8:45	0	1	0	5	1	0	0	0	8	0	0	1	0	0	1	0	0	0	0	0	2	13
Total	0	2	0	12	2	1	0	0	19	1	0	7	0	0	7	0	0	0	0	0	10	31
16:00	0	1	0	1	1	0	0	0	10	0	0	2	0	0	2	0	0	0	0	0	3	11
16:15	0	0	0	2	0	0	0	0	12	0	0	1	0	0	1	0	0	0	0	0	1	14
16:30	0	1	0	4	1	2	0	0	5	2	0	1	0	0	1	0	0	0	0	0	4	9
16:45	0	1	0	2	1	1	0	0	15	1	0	1	0	0	1	0	0	0	0	0	3	17
Total	0	3	0	9	3	3	0	0	42	3	0	5	0	0	5	0	0	0	0	0	11	51
17:00	0	0	0	4	0	3	0	0	13	3	0	1	0	0	1	0	0	0	0	0	4	17
17:15	0	1	0	5	1	0	0	0	20	0	0	2	0	0	2	0	0	0	0	0	3	25
17:30	0	2	0	1	2	1	0	0	10	1	0	0	0	0	0	0	0	0	0	0	3	11
17:45	0	1	0	0	1	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	12
Total	0	4	0	10	4	4	0	0	55	4	0	3	0	0	3	0	0	0	0	0	11	65
Grand Total	0	9	0	42	9	8	0	0	132	8	0	17	2	0	19	0	0	0	0	0	36	174
Apprch %	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	89.5%	10.5%			0.0%	0.0%	0.0%				
Total %	0.0%	25.0%	0.0%		25.0%	22.2%	0.0%	0.0%		22.2%	0.0%	47.2%	5.6%		52.8%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	6	0	0	0	0	8	0	0	0	1	0	1	0	0	0	0	0	1
7:30	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	1	0	0	0	0	3	0	0	1	1	0	2	0	0	0	0	0	2
8:00	0	0	0	4	0	1	0	0	1	1	0	2	0	0	2	0	0	0	0	0	3
Total Volume	0	0	0	14	0	1	0	0	14	1	0	3	2	0	5	0	0	0	0	0	6
% App Total	0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	60.0%	40.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.250	.000	.000		.250	.000	.375	.500		.625	.000	.000	.000		.000	.500

PM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd North Westbound					Freeport Blvd Northbound					Sutterville Rd North Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	1	0	2	1	1	0	0	15	1	0	1	0	0	1	0	0	0	0	0	3
17:00	0	0	0	4	0	3	0	0	13	3	0	1	0	0	1	0	0	0	0	0	4
17:15	0	1	0	5	1	0	0	0	20	0	0	2	0	0	2	0	0	0	0	0	3
17:30	0	2	0	1	2	1	0	0	10	1	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	4	0	12	4	5	0	0	58	5	0	4	0	0	4	0	0	0	0	0	13
% App Total	0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.500	.000		.500	.417	.000	.000		.417	.000	.500	.000		.500	.000	.000	.000		.000	.813

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-002 Freeport Blvd & Sutterville Rd South
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	79	52	0	131	0	0	0	0	0	44	219	0	11	274	184	0	22	0	206	611	11
7:15	0	92	57	0	149	0	0	0	0	0	53	303	0	8	364	183	0	23	0	206	719	8
7:30	0	122	47	0	169	0	2	0	0	2	50	313	0	10	373	122	0	23	0	145	689	10
7:45	0	150	51	0	201	0	0	0	0	0	69	291	0	11	371	113	0	41	0	154	726	11
Total	0	443	207	0	650	0	2	0	0	2	216	1126	0	40	1382	602	0	109	0	711	2745	40
8:00	0	160	55	0	215	0	0	1	0	1	59	269	0	11	339	73	0	28	0	101	656	11
8:15	0	121	57	0	178	1	0	0	0	1	63	235	0	12	310	118	0	34	0	152	641	12
8:30	0	131	50	0	181	0	0	1	0	1	55	233	0	9	297	145	0	27	0	172	651	9
8:45	0	162	59	0	221	0	1	0	0	1	68	207	0	13	288	175	0	37	0	212	722	13
Total	0	574	221	0	795	1	1	2	0	4	245	944	0	45	1234	511	0	126	0	637	2670	45
16:00	0	229	140	0	369	9	2	3	0	14	34	147	1	11	193	83	0	58	0	141	717	11
16:15	0	302	116	0	418	2	1	4	0	7	27	139	0	6	172	77	0	67	0	144	741	6
16:30	0	250	103	0	353	7	0	7	0	14	23	160	0	10	193	66	0	71	0	137	697	10
16:45	0	281	84	0	365	3	1	7	0	11	25	185	0	9	219	87	0	54	0	141	736	9
Total	0	1062	443	0	1505	21	4	21	0	46	109	631	1	36	777	313	0	250	0	563	2891	36
17:00	0	310	120	0	430	3	3	4	0	10	30	158	0	8	196	87	0	65	0	152	788	8
17:15	0	328	91	0	419	5	2	4	0	11	23	175	0	5	203	89	0	72	0	161	794	5
17:30	0	311	108	0	419	2	2	1	0	5	29	160	0	13	202	91	0	63	0	154	780	13
17:45	0	296	101	0	397	0	0	3	0	3	36	167	0	2	205	81	2	64	0	147	752	2
Total	0	1245	420	0	1665	10	7	12	0	29	118	660	0	28	806	348	2	264	0	614	3114	28
Grand Total	0	3324	1291	0	4615	32	14	35	0	81	688	3361	1	149	4199	1774	2	749	0	2525	11420	149
Apprch %	0.0%	72.0%	28.0%	0.0%		39.5%	17.3%	43.2%	0.0%		16.4%	80.0%	0.0%	3.5%		70.3%	0.1%	29.7%	0.0%			
Total %	0.0%	29.1%	11.3%	0.0%	40.4%	0.3%	0.1%	0.3%	0.0%	0.7%	6.0%	29.4%	0.0%	1.3%	36.8%	15.5%	0.0%	6.6%	0.0%	22.1%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	92	57	0	149	0	0	0	0	0	53	303	0	8	364	183	0	23	0	206	719
7:30	0	122	47	0	169	0	2	0	0	2	50	313	0	10	373	122	0	23	0	145	689
7:45	0	150	51	0	201	0	0	0	0	0	69	291	0	11	371	113	0	41	0	154	726
8:00	0	160	55	0	215	0	0	1	0	1	59	269	0	11	339	73	0	28	0	101	656
Total Volume	0	524	210	0	734	0	2	1	0	3	231	1176	0	40	1447	491	0	115	0	606	2790
% App Total	0.0%	71.4%	28.6%	0.0%		0.0%	66.7%	33.3%	0.0%		16.0%	81.3%	0.0%	2.8%		81.0%	0.0%	19.0%	0.0%		
PHF	.000	.819	.921	.000	.853	.000	.250	.250	.000	.375	.837	.939	.000	.909	.970	.671	.000	.701	.000	.735	.961

PM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	310	120	0	430	3	3	4	0	10	30	158	0	8	196	87	0	65	0	152	788
17:15	0	328	91	0	419	5	2	4	0	11	23	175	0	5	203	89	0	72	0	161	794
17:30	0	311	108	0	419	2	2	1	0	5	29	160	0	13	202	91	0	63	0	154	780
17:45	0	296	101	0	397	0	0	3	0	3	36	167	0	2	205	81	2	64	0	147	752
Total Volume	0	1245	420	0	1665	10	7	12	0	29	118	660	0	28	806	348	2	264	0	614	3114
% App Total	0.0%	74.8%	25.2%	0.0%		34.5%	24.1%	41.4%	0.0%		14.6%	81.9%	0.0%	3.5%		56.7%	0.3%	43.0%	0.0%		
PHF	.000	.949	.875	.000	.968	.500	.583	.750	.000	.659	.819	.943	.000	.538	.983	.956	.250	.917	.000	.953	.980

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-002 Freeport Blvd & Sutterville Rd South
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	3	0	0	1	0	1	1	1	0	0	1	1	2	5
7:15	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	4
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	5	0	0	8
7:45	0	0	0	0	0	0	1	0	3	1	1	2	0	4	3	2	0	0	2	2	6	9
Total	0	0	0	0	0	0	1	0	10	1	1	3	0	8	4	3	0	0	8	3	8	26
8:00	0	1	0	0	1	0	1	0	4	1	0	2	0	2	2	0	0	0	1	0	4	7
8:15	0	2	0	0	2	0	1	0	5	1	0	2	0	2	2	0	0	0	2	0	5	9
8:30	0	0	0	0	0	0	0	0	7	0	0	1	0	5	1	0	0	0	1	0	1	13
8:45	0	2	1	0	3	0	1	0	1	1	0	2	0	0	2	0	0	1	3	1	7	4
Total	0	5	1	0	6	0	3	0	17	3	0	7	0	9	7	0	0	1	7	1	17	33
16:00	0	2	0	0	2	0	0	0	9	0	0	2	0	3	2	0	0	0	5	0	4	17
16:15	0	1	0	0	1	0	0	0	9	0	1	2	0	6	3	1	0	0	6	1	5	21
16:30	0	3	0	0	3	0	0	0	5	0	0	0	0	2	0	1	0	0	4	1	4	11
16:45	0	3	0	0	3	1	0	0	6	1	0	2	0	8	2	1	0	1	3	2	8	17
Total	0	9	0	0	9	1	0	0	29	1	1	6	0	19	7	3	0	1	18	4	21	66
17:00	0	3	0	0	3	0	0	0	10	0	0	0	0	6	0	0	0	0	3	0	3	19
17:15	0	0	1	0	1	0	0	0	10	0	0	1	0	4	1	2	1	0	11	3	5	25
17:30	0	2	1	0	3	1	0	0	6	1	0	0	0	6	0	0	0	1	4	1	5	16
17:45	0	2	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	2	5
Total	0	7	2	0	9	1	0	0	29	1	0	1	0	17	1	2	1	1	19	4	15	65
Grand Total	0	21	3	0	24	2	4	0	85	6	2	17	0	53	19	8	1	3	52	12	61	190
Apprch %	0.0%	87.5%	12.5%			33.3%	66.7%	0.0%			10.5%	89.5%	0.0%			66.7%	8.3%	25.0%				
Total %	0.0%	34.4%	4.9%		39.3%	3.3%	6.6%	0.0%		9.8%	3.3%	27.9%	0.0%		31.1%	13.1%	1.6%	4.9%		19.7%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	5	0	0
7:45	0	0	0	0	0	0	1	0	3	1	1	2	0	4	3	2	0	0	2	2	6
8:00	0	1	0	0	1	0	1	0	4	1	0	2	0	2	2	0	0	0	1	0	4
Total Volume	0	1	0	0	1	0	2	0	11	2	1	4	0	9	5	2	0	0	8	2	10
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			20.0%	80.0%	0.0%			100.0%	0.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.500	.000		.500	.250	.500	.000		.417	.250	.000	.000		.250	.417

PM PEAK HOUR	Freeport Blvd Southbound					Sutterville Rd South Westbound					Freeport Blvd Northbound					Sutterville Rd South Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	3	0	0	3	0	0	0	10	0	0	0	0	6	0	0	0	0	3	0	3
17:15	0	0	1	0	1	0	0	0	10	0	0	1	0	4	1	2	1	0	11	3	5
17:30	0	2	1	0	3	1	0	0	6	1	0	0	0	6	0	0	0	1	4	1	5
17:45	0	2	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	2
Total Volume	0	7	2	0	9	1	0	0	29	1	0	1	0	17	1	2	1	1	19	4	15
% App Total	0.0%	77.8%	22.2%			100.0%	0.0%	0.0%			0.0%	100.0%	0.0%			50.0%	25.0%	25.0%			
PHF	.000	.583	.500		.750	.250	.000	.000		.250	.000	.250	.000		.250	.250	.250	.250		.333	.750

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-003 Freeport Blvd & Wentworth Ave-Stacia Way
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	8	68	4	0	80	2	2	9	0	13	4	245	1	0	250	9	2	5	0	16	359	0
7:15	4	95	9	0	108	9	0	17	0	26	0	307	4	0	311	8	0	5	0	13	458	0
7:30	8	112	8	1	129	3	2	12	0	17	5	340	1	2	348	21	1	7	0	29	523	3
7:45	8	163	7	4	182	3	3	8	0	14	6	319	4	1	330	19	6	4	0	29	555	5
Total	28	438	28	5	499	17	7	46	0	70	15	1211	10	3	1239	57	9	21	0	87	1895	8
8:00	22	149	7	2	180	2	3	15	0	20	5	285	7	0	297	17	1	10	0	28	525	2
8:15	11	124	7	3	145	5	2	18	0	25	5	267	5	0	277	17	5	9	0	31	478	3
8:30	22	103	14	4	143	7	4	28	0	39	5	238	12	0	255	22	9	5	0	36	473	4
8:45	22	136	11	7	176	16	6	45	0	67	14	210	14	1	239	23	10	2	0	35	517	8
Total	77	512	39	16	644	30	15	106	0	151	29	1000	38	1	1068	79	25	26	0	130	1993	17
16:00	7	262	24	3	296	12	2	8	0	22	12	145	5	1	163	34	4	17	0	55	536	4
16:15	16	296	25	7	344	4	3	7	0	14	10	147	8	1	166	33	5	18	0	56	580	8
16:30	16	287	27	9	339	14	9	15	0	38	17	146	6	2	171	23	4	17	0	44	592	11
16:45	10	245	31	15	301	7	6	15	0	28	11	163	6	2	182	27	2	14	0	43	554	17
Total	49	1090	107	34	1280	37	20	45	0	102	50	601	25	6	682	117	15	66	0	198	2262	40
17:00	8	336	20	6	370	10	4	6	0	20	9	141	6	3	159	35	3	11	0	49	598	9
17:15	17	342	28	5	392	9	4	9	0	22	11	158	2	1	172	33	2	14	0	49	635	6
17:30	9	371	26	6	412	11	3	14	0	28	10	135	1	2	148	39	6	24	0	69	657	8
17:45	10	296	31	6	343	2	6	9	0	17	7	158	3	1	169	30	4	13	0	47	576	7
Total	44	1345	105	23	1517	32	17	38	0	87	37	592	12	7	648	137	15	62	0	214	2466	30
Grand Total	198	3385	279	78	3940	116	59	235	0	410	131	3404	85	17	3637	390	64	175	0	629	8616	95
Apprch %	5.0%	85.9%	7.1%	2.0%		28.3%	14.4%	57.3%	0.0%		3.6%	93.6%	2.3%	0.5%		62.0%	10.2%	27.8%	0.0%			
Total %	2.3%	39.3%	3.2%	0.9%	45.7%	1.3%	0.7%	2.7%	0.0%	4.8%	1.5%	39.5%	1.0%	0.2%	42.2%	4.5%	0.7%	2.0%	0.0%	7.3%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	8	112	8	1	129	3	2	12	0	17	5	340	1	2	348	21	1	7	0	29	523
7:45	8	163	7	4	182	3	3	8	0	14	6	319	4	1	330	19	6	4	0	29	555
8:00	22	149	7	2	180	2	3	15	0	20	5	285	7	0	297	17	1	10	0	28	525
8:15	11	124	7	3	145	5	2	18	0	25	5	267	5	0	277	17	5	9	0	31	478
Total Volume	49	548	29	10	636	13	10	53	0	76	21	1211	17	3	1252	74	13	30	0	117	2081
% App Total	7.7%	86.2%	4.6%	1.6%		17.1%	13.2%	69.7%	0.0%		1.7%	96.7%	1.4%	0.2%		63.2%	11.1%	25.6%	0.0%		
PHF	.557	.840	.906	.625	.874	.650	.833	.736	.000	.760	.875	.890	.607	.375	.899	.881	.542	.750	.000	.944	.937

PM PEAK HOUR	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	8	336	20	6	370	10	4	6	0	20	9	141	6	3	159	35	3	11	0	49	598
17:15	17	342	28	5	392	9	4	9	0	22	11	158	2	1	172	33	2	14	0	49	635
17:30	9	371	26	6	412	11	3	14	0	28	10	135	1	2	148	39	6	24	0	69	657
17:45	10	296	31	6	343	2	6	9	0	17	7	158	3	1	169	30	4	13	0	47	576
Total Volume	44	1345	105	23	1517	32	17	38	0	87	37	592	12	7	648	137	15	62	0	214	2466
% App Total	2.9%	88.7%	6.9%	1.5%		36.8%	19.5%	43.7%	0.0%		5.7%	91.4%	1.9%	1.1%		64.0%	7.0%	29.0%	0.0%		
PHF	.647	.906	.847	.958	.921	.727	.708	.679	.000	.777	.841	.937	.500	.583	.942	.878	.625	.646	.000	.775	.938

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-003 Freeport Blvd & Wentworth Ave-Stacia Way
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	1	0	0	5
7:15	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	1	2
7:30	0	1	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	1	6
7:45	0	1	0	0	1	0	0	0	1	0	0	2	0	1	2	0	0	0	1	0	3	3
Total	0	2	0	1	2	0	0	0	4	0	0	3	0	6	3	0	0	0	5	0	5	16
8:00	0	1	0	0	1	0	1	1	0	2	0	0	0	1	0	2	0	0	0	2	5	1
8:15	0	2	0	1	2	0	0	0	1	0	0	1	0	1	1	1	0	0	0	1	4	3
8:30	0	0	0	1	0	1	1	0	2	2	0	0	0	5	0	0	0	0	3	0	2	11
8:45	0	2	3	0	5	0	0	0	1	0	1	3	0	3	4	0	0	0	2	0	9	6
Total	0	5	3	2	8	1	2	1	4	4	1	4	0	10	5	3	0	0	5	3	20	21
16:00	0	1	0	2	1	0	0	0	1	0	0	2	0	0	2	0	0	0	3	0	3	6
16:15	0	1	0	2	1	0	0	0	3	0	0	0	0	1	0	1	0	0	3	1	2	9
16:30	0	3	0	2	3	0	0	0	9	0	0	1	0	6	1	0	1	0	6	1	5	23
16:45	0	2	0	1	2	0	0	0	2	0	0	0	0	4	0	0	0	0	3	0	2	10
Total	0	7	0	7	7	0	0	0	15	0	0	3	0	11	3	1	1	0	15	2	12	48
17:00	1	3	0	2	4	0	0	0	2	0	0	0	0	1	0	0	0	0	3	0	4	8
17:15	0	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	2
17:30	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	3	0	1	5
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	0	2	2	3	4
Total	1	5	0	3	6	1	0	0	5	1	0	0	0	3	0	0	2	0	8	2	9	19
Grand Total	1	19	3	13	23	2	2	1	28	5	1	10	0	30	11	4	3	0	33	7	46	104
Apprch %	4.3%	82.6%	13.0%			40.0%	40.0%	20.0%			9.1%	90.9%	0.0%			57.1%	42.9%	0.0%				
Total %	2.2%	41.3%	6.5%		50.0%	4.3%	4.3%	2.2%		10.9%	2.2%	21.7%	0.0%		23.9%	8.7%	6.5%	0.0%		15.2%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	1	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	1
7:45	0	1	0	0	1	0	0	0	1	0	0	2	0	1	2	0	0	0	1	0	3
8:00	0	1	0	0	1	0	1	1	0	2	0	0	0	1	0	2	0	0	0	2	5
8:15	0	2	0	1	2	0	0	0	1	0	0	1	0	1	1	1	0	0	0	1	4
Total Volume	0	5	0	2	5	0	1	1	2	2	0	3	0	5	3	3	0	0	4	3	13
% App Total	0.0%	100.0%	0.0%			0.0%	50.0%	50.0%			0.0%	100.0%	0.0%			100.0%	0.0%	0.0%			
PHF	.000	.625	.000		.625	.000	.250	.250		.250	.000	.375	.000		.375	.375	.000	.000		.375	.650

PM PEAK HOUR	Freeport Blvd Southbound					Wentworth Ave-Stacia Way Westbound					Freeport Blvd Northbound					Wentworth Ave-Stacia Way Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	3	0	2	4	0	0	0	2	0	0	0	0	1	0	0	0	0	3	0	4
17:15	0	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	3	0	1
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	0	2	2	3
Total Volume	1	5	0	3	6	1	0	0	5	1	0	0	0	3	0	0	2	0	8	2	9
% App Total	16.7%	83.3%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.250	.417	.000		.375	.250	.000	.000		.250	.000	.000	.000		.000	.000	.250	.000		.250	.563

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-004 Freeport Blvd & Fruitridge Rd
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	15	35	9	0	59	41	61	31	0	133	8	165	64	1	238	33	85	6	1	125	555	2
7:15	30	45	16	1	92	85	102	44	0	231	9	232	127	0	368	46	96	7	2	151	842	3
7:30	33	56	22	1	112	97	139	59	1	296	19	238	184	0	441	49	127	9	0	185	1034	2
7:45	42	101	24	0	167	79	175	49	0	303	26	220	141	2	389	38	136	21	0	195	1054	2
Total	120	237	71	2	430	302	477	183	1	963	62	855	516	3	1436	166	444	43	3	656	3485	9
8:00	47	102	26	0	175	94	132	46	1	273	19	192	114	2	327	50	147	16	1	214	989	4
8:15	37	58	19	3	117	77	83	42	1	203	17	194	123	6	340	61	115	15	0	191	851	10
8:30	38	46	16	2	102	75	99	45	0	219	18	168	89	1	276	60	68	9	1	138	735	4
8:45	33	84	32	2	151	61	104	60	1	226	11	161	71	1	244	46	95	16	1	158	779	5
Total	155	290	93	7	545	307	418	193	3	921	65	715	397	10	1187	217	425	56	3	701	3354	23
16:00	51	159	61	3	274	103	160	50	2	315	12	87	75	13	187	55	135	17	1	208	984	19
16:15	57	163	68	0	288	99	136	51	1	287	13	107	73	9	202	56	110	19	0	185	962	10
16:30	67	212	57	8	344	78	126	40	2	246	19	105	107	8	239	44	100	16	1	161	990	19
16:45	37	179	59	1	276	107	142	47	5	301	16	116	68	6	206	34	106	17	3	160	943	15
Total	212	713	245	12	1182	387	564	188	10	1149	60	415	323	36	834	189	451	69	5	714	3879	63
17:00	71	209	49	8	337	95	132	49	1	277	22	121	92	12	247	25	94	19	1	139	1000	22
17:15	51	224	54	7	336	133	155	42	1	331	14	96	73	11	194	72	127	22	3	224	1085	22
17:30	75	246	67	5	393	114	135	44	1	294	26	116	83	5	230	26	91	14	2	133	1050	13
17:45	45	193	46	2	286	93	156	36	4	289	14	80	78	8	180	58	99	22	0	179	934	14
Total	242	872	216	22	1352	435	578	171	7	1191	76	413	326	36	851	181	411	77	6	675	4069	71
Grand Total	729	2112	625	43	3509	1431	2037	735	21	4224	263	2398	1562	85	4308	753	1731	245	17	2746	14787	166
Apprch %	20.8%	60.2%	17.8%	1.2%		33.9%	48.2%	17.4%	0.5%		6.1%	55.7%	36.3%	2.0%		27.4%	63.0%	8.9%	0.6%			
Total %	4.9%	14.3%	4.2%	0.3%	23.7%	9.7%	13.8%	5.0%	0.1%	28.6%	1.8%	16.2%	10.6%	0.6%	29.1%	5.1%	11.7%	1.7%	0.1%	18.6%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	33	56	22	1	112	97	139	59	1	296	19	238	184	0	441	49	127	9	0	185	1034
7:45	42	101	24	0	167	79	175	49	0	303	26	220	141	2	389	38	136	21	0	195	1054
8:00	47	102	26	0	175	94	132	46	1	273	19	192	114	2	327	50	147	16	1	214	989
8:15	37	58	19	3	117	77	83	42	1	203	17	194	123	6	340	61	115	15	0	191	851
Total Volume	159	317	91	4	571	347	529	196	3	1075	81	844	562	10	1497	198	525	61	1	785	3928
% App Total	27.8%	55.5%	15.9%	0.7%		32.3%	49.2%	18.2%	0.3%		5.4%	56.4%	37.5%	0.7%		25.2%	66.9%	7.8%	0.1%		
PHF	.846	.777	.875	.333	.816	.894	.756	.831	.750	.887	.779	.887	.764	.417	.849	.811	.893	.726	.250	.917	.932

PM PEAK HOUR	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	37	179	59	1	276	107	142	47	5	301	16	116	68	6	206	34	106	17	3	160	943
17:00	71	209	49	8	337	95	132	49	1	277	22	121	92	12	247	25	94	19	1	139	1000
17:15	51	224	54	7	336	133	155	42	1	331	14	96	73	11	194	72	127	22	3	224	1085
17:30	75	246	67	5	393	114	135	44	1	294	26	116	83	5	230	26	91	14	2	133	1050
Total Volume	234	858	229	21	1342	449	564	182	8	1203	78	449	316	34	877	157	418	72	9	656	4078
% App Total	17.4%	63.9%	17.1%	1.6%		37.3%	46.9%	15.1%	0.7%		8.9%	51.2%	36.0%	3.9%		23.9%	63.7%	11.0%	1.4%		
PHF	.780	.872	.854	.656	.854	.844	.910	.929	.400	.909	.750	.928	.859	.708	.888	.545	.823	.818	.750	.732	.940

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-004 Freeport Blvd & Fruitridge Rd
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	2	0	1	0	0	0	1	0	0	0	1	0	0	0	0	2	0	1	5
7:15	0	0	1	2	1	1	0	0	1	1	0	1	0	1	1	0	0	0	1	0	3	5
7:30	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4
7:45	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	1	1	1	4
Total	0	0	1	6	1	2	0	0	3	2	0	1	0	5	1	1	0	0	4	1	5	18
8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1	0	0	4
8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0	1	2	2	3
8:30	0	0	0	1	0	0	1	0	0	1	0	0	1	4	1	0	0	0	2	0	2	7
8:45	0	0	0	1	0	1	0	0	2	1	0	1	0	3	1	0	0	0	3	0	2	9
Total	0	0	0	3	0	1	1	0	4	2	0	1	1	9	2	0	2	0	7	2	6	23
16:00	1	0	0	4	1	0	0	0	2	0	0	0	0	1	0	0	0	0	2	0	1	9
16:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	0	0	1	0	0	0	0	2	0	0	0	2	3	2	0	1	0	1	1	3	7
16:45	1	2	0	1	3	0	0	0	2	0	0	0	0	2	0	1	0	0	3	1	4	8
Total	2	2	0	6	4	0	0	0	9	0	0	0	2	6	2	1	1	0	6	2	8	27
17:00	0	0	0	3	0	0	0	0	4	0	0	1	1	0	2	0	0	0	1	0	2	8
17:15	0	0	0	1	0	0	0	0	2	0	0	0	1	1	1	0	0	0	0	0	1	4
17:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	0	0	0	0	7	0	0	1	2	1	3	0	0	0	1	0	3	13
Grand Total	2	2	1	19	5	3	1	0	23	4	0	3	5	21	8	2	3	0	18	5	22	81
Apprch %	40.0%	40.0%	20.0%			75.0%	25.0%	0.0%			0.0%	37.5%	62.5%			40.0%	60.0%	0.0%				
Total %	9.1%	9.1%	4.5%		22.7%	13.6%	4.5%	0.0%		18.2%	0.0%	13.6%	22.7%		36.4%	9.1%	13.6%	0.0%		22.7%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	1	1	1
8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1	0	0
8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0	1	2	2
Total Volume	0	0	0	3	0	0	0	0	4	0	0	0	0	5	0	1	2	0	3	3	3
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			33.3%	66.7%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.250	.250	.000		.375	.375

PM PEAK HOUR	Freeport Blvd Southbound					Fruitridge Rd Westbound					Freeport Blvd Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	1	2	0	1	3	0	0	0	2	0	0	0	0	2	0	1	0	0	3	1	4
17:00	0	0	0	3	0	0	0	0	4	0	0	1	1	0	2	0	0	0	1	0	2
17:15	0	0	0	1	0	0	0	0	2	0	0	0	1	1	1	0	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	0	5	3	0	0	0	9	0	0	1	2	3	3	1	0	0	4	1	7
% App Total	33.3%	66.7%	0.0%			0.0%	0.0%	0.0%			0.0%	33.3%	66.7%			100.0%	0.0%	0.0%			
PHF	.250	.250	.000		.250	.000	.000	.000		.000	.000	.250	.500		.375	.250	.000	.000		.250	.438

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-005 Land Park Dr & Fruitridge Rd
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	9	4	10	0	23	8	65	6	0	79	32	37	45	0	114	1	68	16	0	85	301	0
7:15	11	9	5	0	25	14	127	9	0	150	36	55	54	0	145	3	81	28	0	112	432	0
7:30	15	16	15	0	46	26	117	10	0	153	67	82	83	0	232	9	88	24	0	121	552	0
7:45	21	32	11	0	64	43	182	35	0	260	63	77	87	0	227	8	76	35	0	119	670	0
Total	56	61	41	0	158	91	491	60	0	642	198	251	269	0	718	21	313	103	0	437	1955	0
8:00	41	56	5	0	102	21	129	31	0	181	39	84	91	0	214	7	86	23	0	116	613	0
8:15	33	40	8	0	81	28	76	14	0	118	30	71	84	0	185	8	71	24	0	103	487	0
8:30	4	11	7	0	22	23	88	8	0	119	20	38	62	0	120	5	62	16	0	83	344	0
8:45	16	13	6	0	35	43	80	10	0	133	23	30	72	0	125	4	99	25	0	128	421	0
Total	94	120	26	0	240	115	373	63	0	551	112	223	309	0	644	24	318	88	0	430	1865	0
16:00	13	40	13	0	66	67	138	11	0	216	26	20	46	0	92	5	126	34	0	165	539	0
16:15	9	40	13	0	62	72	147	15	0	234	21	25	39	0	85	9	129	31	0	169	550	0
16:30	9	46	12	0	67	77	146	11	0	234	40	29	49	0	118	10	93	40	0	143	562	0
16:45	11	48	13	0	72	54	146	14	0	214	32	21	33	0	86	10	103	26	0	139	511	0
Total	42	174	51	0	267	270	577	51	0	898	119	95	167	0	381	34	451	131	0	616	2162	0
17:00	14	63	9	0	86	67	151	14	0	232	29	30	45	0	104	8	91	27	0	126	548	0
17:15	17	46	13	0	76	62	145	11	0	218	18	26	59	0	103	6	116	21	0	143	540	0
17:30	11	34	8	0	53	49	154	17	0	220	30	28	44	0	102	6	111	27	0	144	519	0
17:45	16	52	16	0	84	66	138	10	0	214	19	18	47	0	84	15	92	24	0	131	513	0
Total	58	195	46	0	299	244	588	52	0	884	96	102	195	0	393	35	410	99	0	544	2120	0
Grand Total	250	550	164	0	964	720	2029	226	0	2975	525	671	940	0	2136	114	1492	421	0	2027	8102	0
Apprch %	25.9%	57.1%	17.0%	0.0%		24.2%	68.2%	7.6%	0.0%		24.6%	31.4%	44.0%	0.0%		5.6%	73.6%	20.8%	0.0%			
Total %	3.1%	6.8%	2.0%	0.0%	11.9%	8.9%	25.0%	2.8%	0.0%	36.7%	6.5%	8.3%	11.6%	0.0%	26.4%	1.4%	18.4%	5.2%	0.0%	25.0%	100.0%	

AM PEAK HOUR	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	15	16	15	0	46	26	117	10	0	153	67	82	83	0	232	9	88	24	0	121	552
7:45	21	32	11	0	64	43	182	35	0	260	63	77	87	0	227	8	76	35	0	119	670
8:00	41	56	5	0	102	21	129	31	0	181	39	84	91	0	214	7	86	23	0	116	613
8:15	33	40	8	0	81	28	76	14	0	118	30	71	84	0	185	8	71	24	0	103	487
Total Volume	110	144	39	0	293	118	504	90	0	712	199	314	345	0	858	32	321	106	0	459	2322
% App Total	37.5%	49.1%	13.3%	0.0%		16.6%	70.8%	12.6%	0.0%		23.2%	36.6%	40.2%	0.0%		7.0%	69.9%	23.1%	0.0%		
PHF	.671	.643	.650	.000	.718	.686	.692	.643	.000	.685	.743	.935	.948	.000	.925	.889	.912	.757	.000	.948	.866

PM PEAK HOUR	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	9	40	13	0	62	72	147	15	0	234	21	25	39	0	85	9	129	31	0	169	550
16:30	9	46	12	0	67	77	146	11	0	234	40	29	49	0	118	10	93	40	0	143	562
16:45	11	48	13	0	72	54	146	14	0	214	32	21	33	0	86	10	103	26	0	139	511
17:00	14	63	9	0	86	67	151	14	0	232	29	30	45	0	104	8	91	27	0	126	548
Total Volume	43	197	47	0	287	270	590	54	0	914	122	105	166	0	393	37	416	124	0	577	2171
% App Total	15.0%	68.6%	16.4%	0.0%		29.5%	64.6%	5.9%	0.0%		31.0%	26.7%	42.2%	0.0%		6.4%	72.1%	21.5%	0.0%		
PHF	.768	.782	.904	.000	.834	.877	.977	.900	.000	.976	.763	.875	.847	.000	.833	.925	.806	.775	.000	.854	.966

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-005 Land Park Dr & Fruitridge Rd
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	4	0
7:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30	0	0	0	0	0	0	0	0	0	0	1	3	0	1	4	0	0	2	2	2	6	3
7:45	1	0	1	2	2	0	0	1	1	1	2	2	4	3	8	0	0	0	0	0	11	6
Total	1	0	1	2	2	0	0	2	1	2	3	7	6	4	16	0	0	2	2	2	22	9
8:00	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0
8:15	0	1	0	0	1	0	0	0	0	0	0	2	1	1	3	0	1	0	0	1	5	1
8:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0
8:45	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2	0	0	1	2	4	1
Total	1	4	1	0	6	0	0	2	0	2	0	2	1	1	3	2	1	1	1	4	15	2
16:00	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	2	3
16:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
16:30	1	0	0	2	1	0	0	0	0	0	0	2	0	0	2	0	1	0	3	1	4	5
16:45	0	4	0	3	4	0	0	0	1	0	0	0	0	1	0	0	1	1	2	2	6	7
Total	2	4	0	6	6	0	0	0	1	0	0	4	0	1	4	0	2	1	7	3	13	15
17:00	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4	0
17:15	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
17:30	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
17:45	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4	0
Total	1	13	0	0	14	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	17	0
Grand Total	5	21	2	8	28	0	0	4	2	4	3	15	8	6	26	2	3	4	10	9	67	26
Apprch %	17.9%	75.0%	7.1%			0.0%	0.0%	100.0%			11.5%	57.7%	30.8%			22.2%	33.3%	44.4%				
Total %	7.5%	31.3%	3.0%		41.8%	0.0%	0.0%	6.0%		6.0%	4.5%	22.4%	11.9%		38.8%	3.0%	4.5%	6.0%		13.4%	100.0%	

AM PEAK HOUR	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	0	0	0	0	1	3	0	1	4	0	0	2	2	2	6
7:45	1	0	1	2	2	0	0	1	1	1	2	2	4	3	8	0	0	0	0	0	11
8:00	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
8:15	0	1	0	0	1	0	0	0	0	0	0	2	1	1	3	0	1	0	0	1	5
Total Volume	1	2	2	2	5	0	0	2	1	2	3	7	5	5	15	0	1	2	2	3	25
% App Total	20.0%	40.0%	40.0%			0.0%	0.0%	100.0%			20.0%	46.7%	33.3%			0.0%	33.3%	66.7%			
PHF	.250	.500	.500		.625	.000	.000	.500		.500	.375	.583	.313		.469	.000	.250	.250		.375	.568

PM PEAK HOUR	Land Park Dr Southbound					Fruitridge Rd Westbound					Land Park Dr Northbound					Fruitridge Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
16:30	1	0	0	2	1	0	0	0	0	0	0	2	0	0	2	0	1	0	3	1	4
16:45	0	4	0	3	4	0	0	0	1	0	0	0	0	1	0	0	1	1	2	2	6
17:00	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
Total Volume	1	6	0	5	7	0	0	0	1	0	0	4	1	1	5	0	2	1	5	3	15
% App Total	14.3%	85.7%	0.0%			0.0%	0.0%	0.0%			0.0%	80.0%	20.0%			0.0%	66.7%	33.3%			
PHF	.250	.375	.000		.438	.000	.000	.000		.000	.000	.500	.250		.625	.000	.500	.250		.375	.625

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 1

Groups Printed- Unshifted

	Land Park Drive Southbound					Sutterville Road Westbound					Del Rio Road Northwestbound					Land Park Drive Northbound					Sutterville Road Eastbound					
Start Time	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Int. Total
07:00	3	5	2	11	21	1	6	75	3	85	1	20	14	3	38	5	35	10	1	51	20	177	3	2	202	397
07:15	3	8	7	12	30	3	5	81	3	92	0	19	14	2	35	6	53	17	1	77	26	156	5	4	191	425
07:30	4	8	10	19	41	0	7	87	5	99	1	29	23	2	55	4	82	8	0	94	28	116	4	7	155	444
07:45	16	15	24	46	101	2	10	86	7	105	0	17	28	4	49	5	97	16	2	120	23	83	8	3	117	492
Total	26	36	43	88	193	6	28	329	18	381	2	85	79	11	177	20	267	51	4	342	97	532	20	16	665	1758
08:00	14	14	26	37	91	2	7	95	6	110	0	30	20	2	52	9	67	14	0	90	12	81	7	3	103	446
08:15	5	7	16	9	37	3	8	92	10	113	0	18	19	3	40	13	57	13	0	83	14	135	5	5	159	432
08:30	6	5	6	13	30	0	9	81	7	97	0	26	20	5	51	10	49	9	2	70	10	155	9	6	180	428
08:45	4	12	8	11	35	4	10	87	9	110	2	19	16	2	39	12	32	17	0	61	16	176	17	13	222	467
Total	29	38	56	70	193	9	34	355	32	430	2	93	75	12	182	44	205	53	2	304	52	547	38	27	664	1773
16:00	17	23	45	30	115	1	18	110	7	136	4	11	10	2	27	4	18	6	0	28	24	119	15	10	168	474
16:15	18	27	40	35	120	2	9	108	5	124	4	22	13	6	45	12	18	7	3	40	10	116	14	17	157	486
16:30	23	18	33	38	112	2	16	97	5	120	3	22	13	6	44	9	22	14	5	50	15	95	25	13	148	474
16:45	23	31	54	23	131	3	9	92	3	107	2	17	12	6	37	9	18	13	1	41	22	105	12	12	151	467
Total	81	99	172	126	478	8	52	407	20	487	13	72	48	20	153	34	76	40	9	159	71	435	66	52	624	1901
17:00	29	20	44	39	132	2	11	108	2	123	2	17	16	9	44	5	34	17	2	58	16	109	18	12	155	512
17:15	22	33	39	44	138	1	15	104	4	124	0	11	14	3	28	9	21	12	2	44	18	113	15	12	158	492
17:30	27	35	64	36	162	2	7	100	6	115	1	9	10	2	22	15	24	14	4	57	10	82	14	14	120	476
17:45	23	24	54	34	135	3	23	77	8	111	3	14	19	4	40	3	17	15	1	36	15	103	20	13	151	473
Total	101	112	201	153	567	8	56	389	20	473	6	51	59	18	134	32	96	58	9	195	59	407	67	51	584	1953
Grand Total	237	285	472	437	1431	31	170	1480	90	1771	23	301	261	61	646	130	644	202	24	1000	279	1921	191	146	2537	7385
Apprch %	16.6	19.9	33	30.5		1.8	9.6	83.6	5.1		3.6	46.6	40.4	9.4		13	64.4	20.2	2.4		11	75.7	7.5	5.8		
Total %	3.2	3.9	6.4	5.9	19.4	0.4	2.3	20	1.2	24	0.3	4.1	3.5	0.8	8.7	1.8	8.7	2.7	0.3	13.5	3.8	26	2.6	2	34.4	

All Traffic Data

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City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015

	Land Park Drive Southbound					Sutterville Road Westbound					Del Rio Road Northwestbound					Land Park Drive Northbound					Sutterville Road Eastbound					
Start Time	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30																										
07:30	4	8	10	19	41	0	7	87	5	99	**1**	29	23	2	**55**	4	82	8	0	94	**28**	116	4	**7**	155	444
07:45	**16**	**15**	24	**46**	**101**	2	**10**	86	7	105	0	17	**28**	**4**	49	5	**97**	**16**	**2**	**120**	23	83	**8**	3	117	**492**
08:00	14	14	**26**	37	91	2	7	**95**	6	110	0	**30**	20	2	52	9	67	14	0	90	12	81	7	3	103	446
08:15	5	7	16	9	37	**3**	8	92	**10**	**113**	0	18	19	3	40	**13**	57	13	0	83	14	**135**	5	5	**159**	432
Total Volume	39	44	76	111	270	7	32	360	28	427	1	94	90	11	196	31	303	51	2	387	77	415	24	18	534	1814
% App. Total	14.4	16.3	28.1	41.1		1.6	7.5	84.3	6.6		0.5	48	45.9	5.6		8	78.3	13.2	0.5		14.4	77.7	4.5	3.4		
PHF	.609	.733	.731	.603	.668	.583	.800	.947	.700	.945	.250	.783	.804	.688	.891	.596	.781	.797	.250	.806	.688	.769	.750	.643	.840	.922

All Traffic Data

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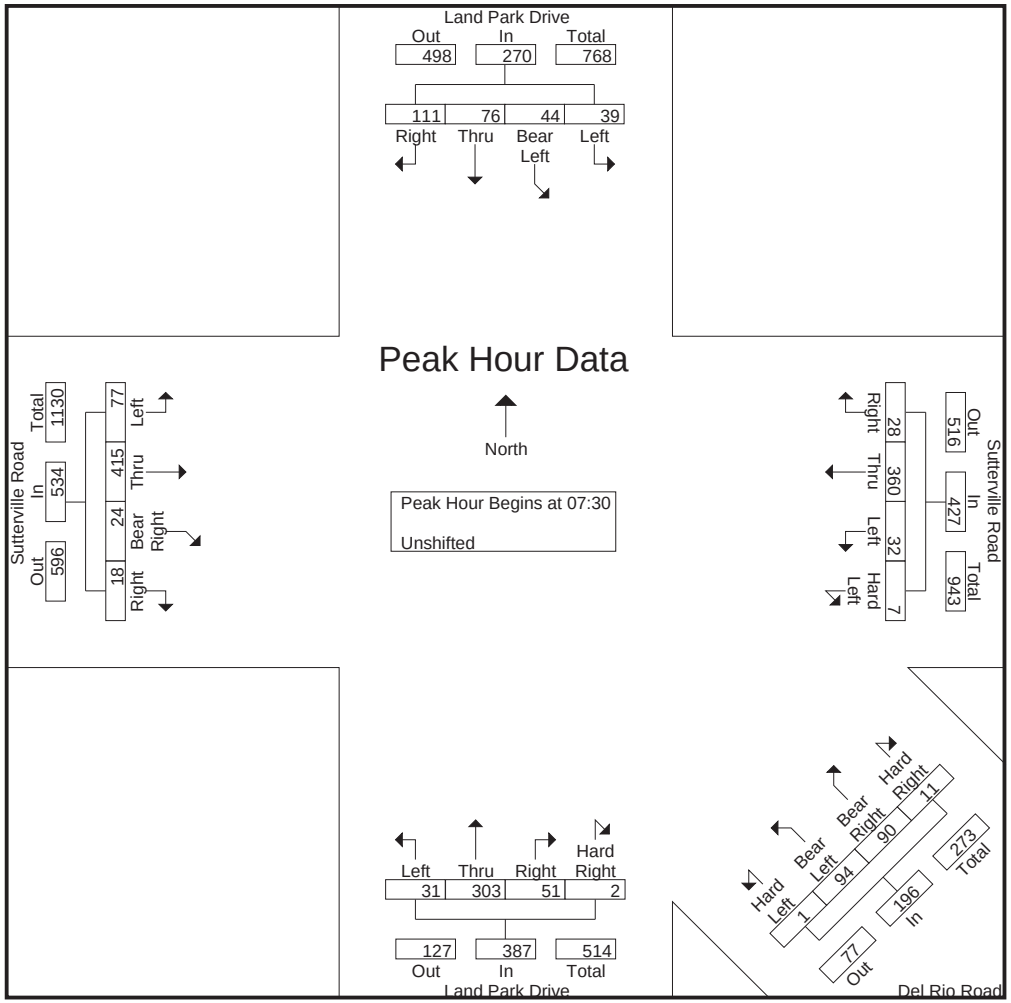
City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 3



All Traffic Data

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City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015

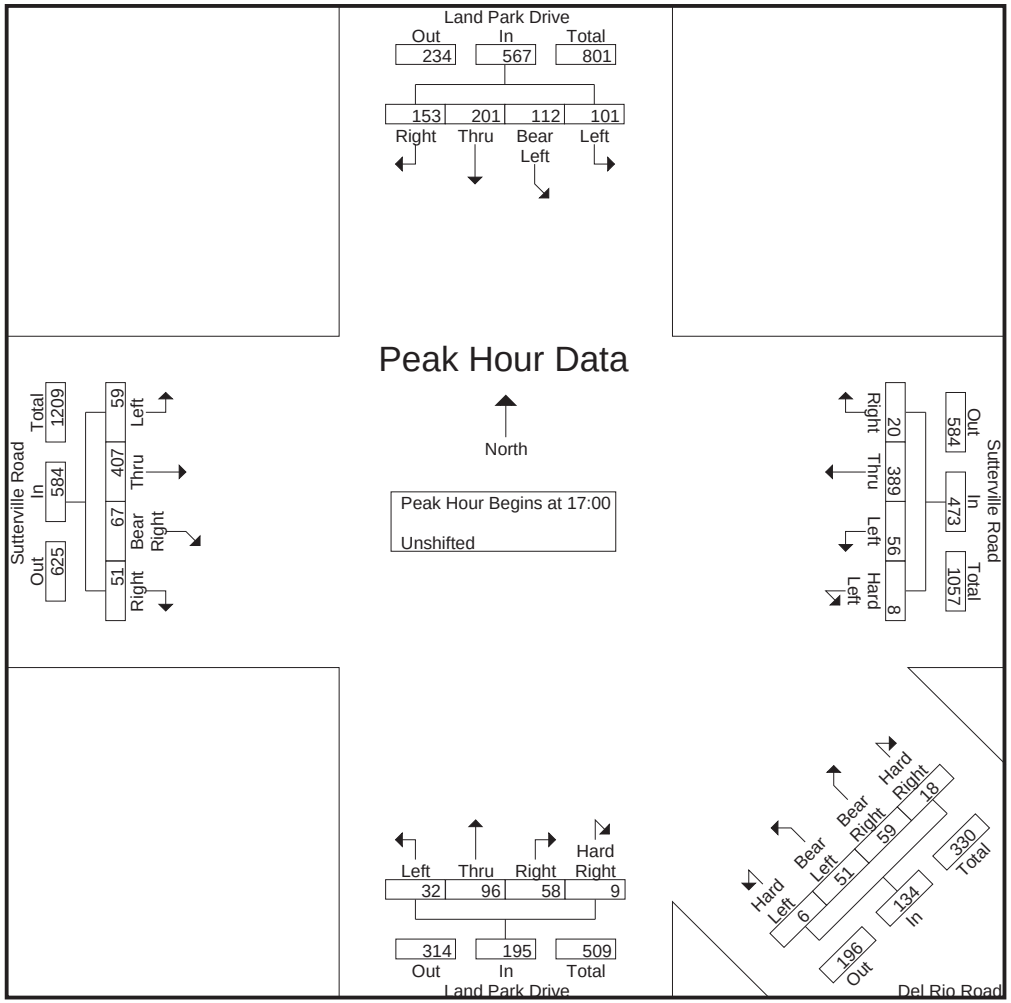
	Land Park Drive Southbound					Sutterville Road Westbound					Del Rio Road Northwestbound					Land Park Drive Northbound					Sutterville Road Eastbound					
Start Time	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 17:00																										
17:00	**29**	20	44	39	132	2	11	**108**	2	123	2	**17**	16	**9**	**44**	5	**34**	**17**	2	**58**	16	109	18	12	155	**512**
17:15	22	33	39	**44**	138	1	15	104	4	**124**	0	11	14	3	28	9	21	12	2	44	**18**	**113**	15	12	**158**	492
17:30	27	**35**	**64**	36	**162**	2	7	100	6	115	1	9	10	2	22	**15**	24	14	**4**	57	10	82	14	**14**	120	476
17:45	23	24	54	34	135	**3**	**23**	77	**8**	111	**3**	14	**19**	4	40	3	17	15	1	36	15	103	**20**	13	151	473
Total Volume	101	112	201	153	567	8	56	389	20	473	6	51	59	18	134	32	96	58	9	195	59	407	67	51	584	1953
% App. Total	17.8	19.8	35.4	27		1.7	11.8	82.2	4.2		4.5	38.1	44	13.4		16.4	49.2	29.7	4.6		10.1	69.7	11.5	8.7		
PHF	.871	.800	.785	.869	.875	.667	.609	.900	.625	.954	.500	.750	.776	.500	.761	.533	.706	.853	.563	.841	.819	.900	.838	.911	.924	.954

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 5



All Traffic Data

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City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 1

Groups Printed- Bank 1

	Land Park Drive Southbound						Sutterville Road Westbound						Del Rio Road Northwestbound						Land Park Drive Northbound						Sutterville Road Eastbound								
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	0	0	4	0	0	0	0	0	2	0	0	0	1	0	1	1	0	2	0	0	2	2	0	0	0	0	0	0	9	3	12
07:15	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	1	0	2	0	0	1	2	0	0	0	0	0	0	4	3	7
07:30	0	0	0	0	0	0	0	0	0	1	3	1	0	1	5	0	1	6	0	2	0	0	0	2	0	0	0	0	4	0	8	9	17
07:45	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	3	1	0	0	1	0	3	1	0	0	0	0	1	0	11	2	13
Total	0	0	0	0	4	0	0	0	0	1	12	1	0	2	7	0	5	9	0	6	1	0	6	7	0	0	0	0	5	0	32	17	49
08:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	5	1	6
08:15	0	0	0	1	0	1	0	0	0	0	3	0	0	0	1	0	1	1	0	2	0	0	3	2	0	0	0	0	6	0	13	4	17
08:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	2	2	0	0	0	0	2	0	0	0	0	1	2	1	7	3	10
08:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	3
Total	0	0	0	1	2	1	0	0	0	0	6	0	0	0	4	0	4	4	0	2	0	0	6	2	0	0	0	1	10	1	28	8	36
16:00	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	5	0	0	1	0	0	4	1	0	0	0	0	1	0	14	1	15
16:15	0	0	2	1	0	3	0	0	0	0	2	0	0	0	1	0	2	1	0	0	0	0	3	0	0	0	0	0	7	0	14	4	18
16:30	0	2	0	1	0	3	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	6	3	9
16:45	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	1	0	0	2	1	3	5	8
Total	0	4	2	2	0	8	0	0	0	0	8	0	0	0	2	1	9	3	0	1	0	0	7	1	0	1	0	0	13	1	37	13	50
17:00	0	2	1	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
17:15	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	2
17:30	0	3	2	1	0	6	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	1	1	6	7	13
17:45	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	6	1	7
Total	0	6	3	1	0	10	0	1	0	0	5	1	0	0	0	0	5	0	0	0	0	0	2	0	0	2	0	0	1	2	13	13	26
Grand Total	0	10	5	4	6	19	0	1	0	1	31	2	0	2	13	1	23	16	0	9	1	0	21	10	0	3	0	1	29	4	110	51	161
Apprch %	0	52.6	26.3	21.1			0	50	0	50			0	12.5	81.2	6.2			0	90	10	0			0	75	0	25					
Total %	0	19.6	9.8	7.8		37.3	0	2	0	2		3.9	0	3.9	25.5	2		31.4	0	17.6	2	0		19.6	0	5.9	0	2		7.8	68.3	31.7	

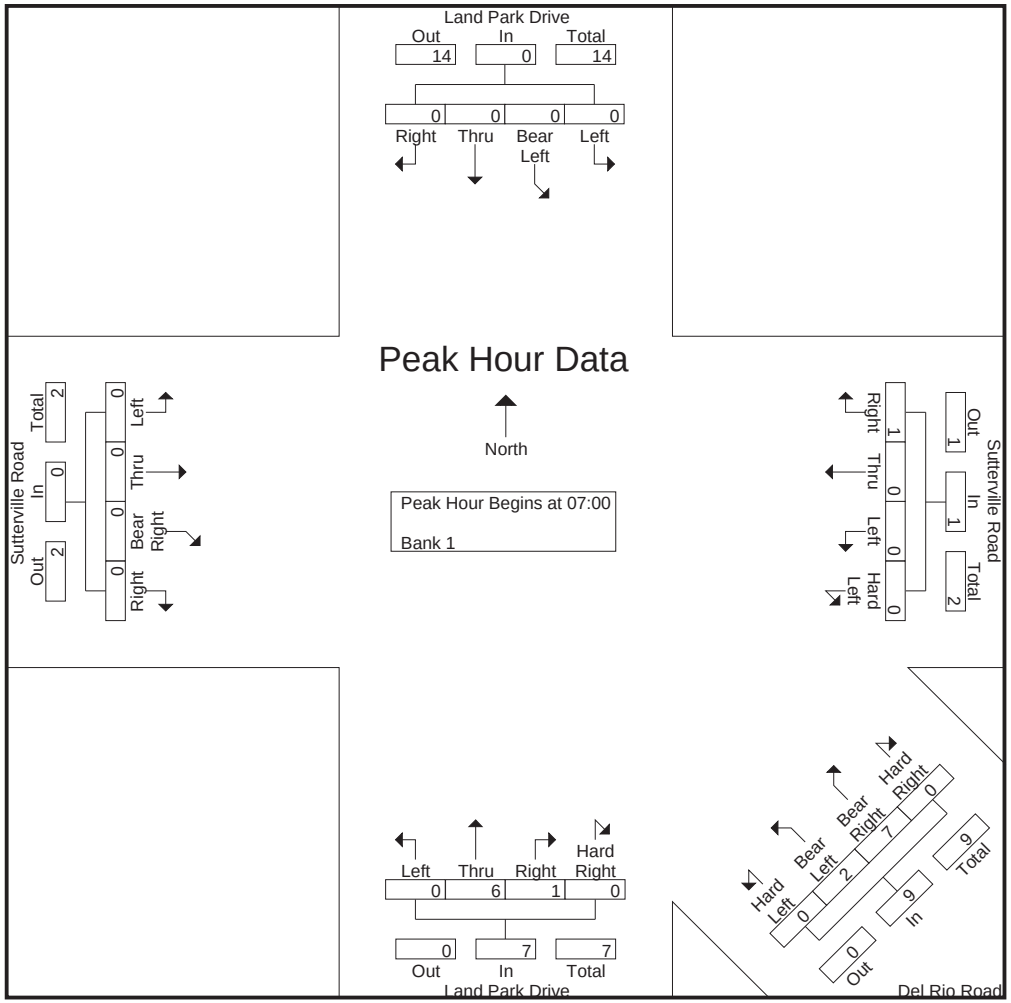
	Land Park Drive Southbound					Sutterville Road Westbound					Del Rio Road Northwestbound					Land Park Drive Northbound					Sutterville Road Eastbound					
Start Time	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:00																										
07:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	**2**	0	0	**2**	0	0	0	0	0	3
07:15	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1	0	2	0	0	2	0	0	0	0	0	3
07:30	0	0	0	0	0	0	0	0	**1**	**1**	0	1	**5**	0	**6**	0	2	0	0	2	0	0	0	0	0	**9**
07:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	**1**	0	1	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	1	1	0	2	7	0	9	0	6	1	0	7	0	0	0	0	0	17
% App. Total	0	0	0	0		0	0	0	100		0	22.2	77.8	0		0	85.7	14.3	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500	.350	.000	.375	.000	.750	.250	.000	.875	.000	.000	.000	.000	.000	.472

All Traffic Data

(916) 771-8700
orders@atdtraffic.com

City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 2



All Traffic Data

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orders@atdtraffic.com

City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015

	Land Park Drive Southbound					Sutterville Road Westbound					Del Rio Road Northwestbound					Land Park Drive Northbound					Sutterville Road Eastbound					
Start Time	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 16:45																										
16:45	0	2	0	0	2	0	0	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0	0	0	**1**	0	0	**1**	5
17:00	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
17:30	0	**3**	**2**	**1**	**6**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	**7**
Total Volume	0	8	3	1	12	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	3	0	0	3	17
% App. Total	0	66.7	25	8.3		0	0	0	0		0	0	50	50		0	0	0	0		0	100	0	0		
PHF	.000	.667	.375	.250	.500	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.607

All Traffic Data

(916) 771-8700
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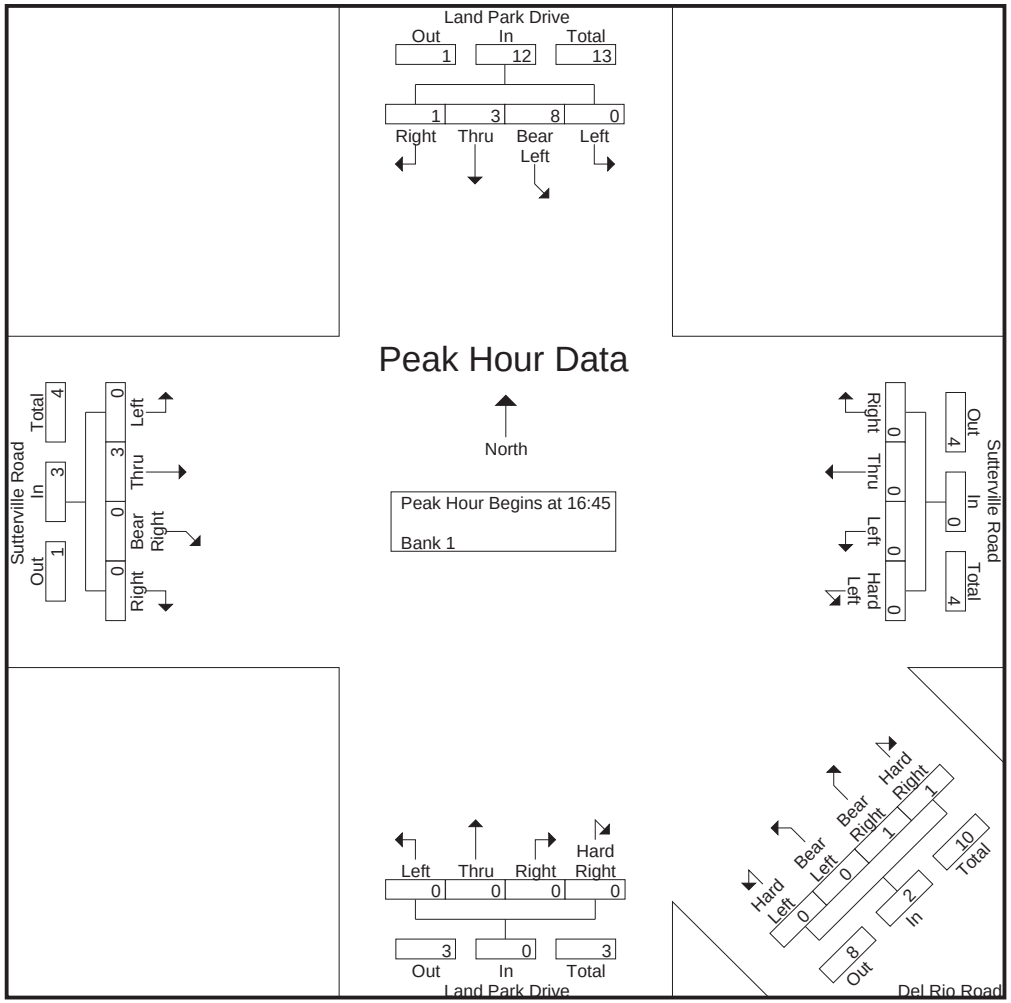
City of Sacramento
All Vehicles on Unshifted Tab
Peds & Bikes on Bank 1 Tab

File Name : 15-7872-006 Land Park Drive-Del Rio Road-Sutterville Road
Site Code : 00000000
Start Date : 11/10/2015
Page No : 4



ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-007 Freeport Blvd & Meer Way
Date : 11/10/2015

Unshifted Count = All Vehicles & Uturns

	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	8	76	2	9	95	0	0	9	0	9	6	248	0	0	254	1	0	3	0	4	362	9
7:15	6	105	1	11	123	0	1	14	0	15	4	330	3	0	337	0	0	5	0	5	480	11
7:30	5	131	1	12	149	0	0	16	0	16	4	365	3	1	373	0	0	5	0	5	543	13
7:45	10	174	1	10	195	0	0	16	0	16	4	341	4	1	350	0	0	3	0	3	564	11
Total	29	486	5	42	562	0	1	55	0	56	18	1284	10	2	1314	1	0	16	0	17	1949	44
8:00	7	173	1	19	200	0	0	21	0	21	4	296	3	2	305	0	0	5	0	5	531	21
8:15	16	129	1	7	153	0	0	11	0	11	4	279	6	3	292	0	0	2	0	2	458	10
8:30	9	146	2	11	168	0	0	10	0	10	3	285	3	4	295	0	0	3	0	3	476	15
8:45	28	167	1	12	208	0	0	17	0	17	4	252	6	9	271	1	0	3	0	4	500	21
Total	60	615	5	49	729	0	0	59	0	59	15	1112	18	18	1163	1	0	13	0	14	1965	67
16:00	19	281	1	13	314	0	0	19	0	19	5	179	9	10	203	0	0	4	0	4	540	23
16:15	31	339	1	9	380	0	0	6	0	6	4	166	3	13	186	0	0	7	0	7	579	22
16:30	15	318	0	9	342	0	0	10	0	10	5	182	4	15	206	0	0	4	0	4	562	24
16:45	17	309	2	10	338	0	0	8	0	8	2	203	3	6	214	0	0	2	0	2	562	16
Total	82	1247	4	41	1374	0	0	43	0	43	16	730	19	44	809	0	0	17	0	17	2243	85
17:00	26	354	0	15	395	0	0	12	0	12	3	179	4	15	201	0	0	3	0	3	611	30
17:15	20	367	7	10	404	0	0	8	0	8	4	183	6	15	208	0	0	3	0	3	623	25
17:30	13	377	7	7	404	0	0	12	0	12	5	181	2	12	200	0	0	9	0	9	625	19
17:45	18	316	5	16	355	0	0	9	0	9	5	190	4	8	207	0	0	8	0	8	579	24
Total	77	1414	19	48	1558	0	0	41	0	41	17	733	16	50	816	0	0	23	0	23	2438	98
Grand Total	248	3762	33	180	4223	0	1	198	0	199	66	3859	63	114	4102	2	0	69	0	71	8595	294
Apprch %	5.9%	89.1%	0.8%	4.3%		0.0%	0.5%	99.5%	0.0%		1.6%	94.1%	1.5%	2.8%		2.8%	0.0%	97.2%	0.0%			
Total %	2.9%	43.8%	0.4%	2.1%	49.1%	0.0%	0.0%	2.3%	0.0%	2.3%	0.8%	44.9%	0.7%	1.3%	47.7%	0.0%	0.0%	0.8%	0.0%	0.8%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	6	105	1	11	123	0	1	14	0	15	4	330	3	0	337	0	0	5	0	5	480
7:30	5	131	1	12	149	0	0	16	0	16	4	365	3	1	373	0	0	5	0	5	543
7:45	10	174	1	10	195	0	0	16	0	16	4	341	4	1	350	0	0	3	0	3	564
8:00	7	173	1	19	200	0	0	21	0	21	4	296	3	2	305	0	0	5	0	5	531
Total Volume	28	583	4	52	667	0	1	67	0	68	16	1332	13	4	1365	0	0	18	0	18	2118
% App Total	4.2%	87.4%	0.6%	7.8%		0.0%	1.5%	98.5%	0.0%		1.2%	97.6%	1.0%	0.3%		0.0%	0.0%	100.0%	0.0%		
PHF	.700	.838	1.000	.684	.834	.000	.250	.798	.000	.810	1.000	.912	.813	.500	.915	.000	.000	.900	.000	.900	.939

PM PEAK HOUR	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	26	354	0	15	395	0	0	12	0	12	3	179	4	15	201	0	0	3	0	3	611
17:15	20	367	7	10	404	0	0	8	0	8	4	183	6	15	208	0	0	3	0	3	623
17:30	13	377	7	7	404	0	0	12	0	12	5	181	2	12	200	0	0	9	0	9	625
17:45	18	316	5	16	355	0	0	9	0	9	5	190	4	8	207	0	0	8	0	8	579
Total Volume	77	1414	19	48	1558	0	0	41	0	41	17	733	16	50	816	0	0	23	0	23	2438
% App Total	4.9%	90.8%	1.2%	3.1%		0.0%	0.0%	100.0%	0.0%		2.1%	89.8%	2.0%	6.1%		0.0%	0.0%	100.0%	0.0%		
PHF	.740	.938	.679	.750	.964	.000	.000	.854	.000	.854	.850	.964	.667	.833	.981	.000	.000	.639	.000	.639	.975

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-007 Freeport Blvd & Meer Way
Date : 11/10/2015

Bank 1 Count = Bikes & Peds

	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	5
7:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30	0	1	0	0	1	0	0	1	1	1	0	1	0	1	1	0	0	0	4	0	3	6
7:45	0	0	0	0	0	0	0	1	2	1	0	0	0	2	0	0	0	0	3	0	1	7
Total	0	1	0	0	1	0	0	2	6	2	0	1	0	3	1	0	0	0	10	0	4	19
8:00	0	1	0	1	1	0	0	0	1	0	0	2	0	0	2	0	0	0	1	0	3	3
8:15	0	2	0	1	2	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	4	4
8:30	0	0	0	1	0	0	0	0	8	0	0	1	0	1	1	0	0	0	4	0	1	14
8:45	0	2	0	0	2	0	0	0	1	0	0	2	0	2	2	0	0	2	3	2	6	6
Total	0	5	0	3	5	0	0	0	13	0	0	7	0	3	7	0	0	2	8	2	14	27
16:00	2	2	0	1	4	0	0	0	5	0	0	1	0	2	1	0	0	0	3	0	5	11
16:15	0	2	0	1	2	0	0	0	6	0	0	1	0	1	1	0	0	0	3	0	3	11
16:30	1	4	0	0	5	0	0	0	5	0	0	0	0	1	0	0	0	0	4	0	5	10
16:45	0	3	0	0	3	0	0	1	3	1	0	2	0	0	2	0	0	0	3	0	6	6
Total	3	11	0	2	14	0	0	1	19	1	0	4	0	4	4	0	0	0	13	0	19	38
17:00	1	2	0	0	3	0	0	0	5	0	1	1	0	1	2	0	0	0	1	0	5	7
17:15	0	0	0	1	0	0	0	0	2	0	0	1	0	0	1	0	0	0	1	0	1	4
17:30	2	2	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	5	0	4	9
17:45	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Total	4	5	0	1	9	0	0	0	11	0	1	2	0	1	3	0	0	0	7	0	12	20
Grand Total	7	22	0	6	29	0	0	3	49	3	1	14	0	11	15	0	0	2	38	2	49	104
Apprch %	24.1%	75.9%	0.0%			0.0%	0.0%	100.0%			6.7%	93.3%	0.0%			0.0%	0.0%	100.0%				
Total %	14.3%	44.9%	0.0%		59.2%	0.0%	0.0%	6.1%		6.1%	2.0%	28.6%	0.0%		30.6%	0.0%	0.0%	4.1%		4.1%	100.0%	

AM PEAK HOUR	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	1	0	0	1	0	0	1	1	1	0	1	0	1	1	0	0	0	4	0	3
7:45	0	0	0	0	0	0	0	1	2	1	0	0	0	2	0	0	0	0	3	0	1
8:00	0	1	0	1	1	0	0	0	1	0	0	2	0	0	2	0	0	0	1	0	3
Total Volume	0	2	0	1	2	0	0	2	5	2	0	3	0	3	3	0	0	0	8	0	7
% App Total	0.0%	100.0%	0.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.500	.000		.500	.000	.000	.500		.500	.000	.375	.000		.375	.000	.000	.000		.000	.583

PM PEAK HOUR	Freeport Blvd Southbound					Meer Way Westbound					Freeport Blvd Northbound					Meer Way Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	2	0	0	3	0	0	0	5	0	1	1	0	1	2	0	0	0	1	0	5
17:15	0	0	0	1	0	0	0	0	2	0	0	1	0	0	1	0	0	0	1	0	1
17:30	2	2	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	5	0	4
17:45	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	4	5	0	1	9	0	0	0	11	0	1	2	0	1	3	0	0	0	7	0	12
% App Total	44.4%	55.6%	0.0%			0.0%	0.0%	0.0%			33.3%	66.7%	0.0%			0.0%	0.0%	0.0%			
PHF	.500	.625	.000		.563	.000	.000	.000		.000	.250	.500	.000		.375	.000	.000	.000		.000	.600

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-009 Driveway 8A-9A & Wentworth Avenue
Date : 11/10/2015

Unshifted Count = All Vehicles

	Driveway 8A Southbound					Wentworth Avenue Westbound					Driveway 9A Northbound					Wentworth Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	3	0	0	0	3	0	0	4	0	4	0	0	3	0	3	10	0
7:15	0	0	0	0	0	3	0	0	0	3	0	0	4	0	4	0	0	2	0	2	9	0
7:30	0	0	0	0	0	4	0	0	0	4	1	0	6	0	7	0	0	1	0	1	12	0
7:45	0	0	0	0	0	5	0	0	0	5	1	0	10	0	11	0	0	6	0	6	22	0
Total	0	0	0	0	0	15	0	0	0	15	2	0	24	0	26	0	0	12	0	12	53	0
8:00	0	0	0	0	0	6	0	0	0	6	5	0	7	0	12	0	0	5	0	5	23	0
8:15	0	0	0	0	0	7	0	0	0	7	3	0	9	0	12	0	0	3	0	3	22	0
8:30	0	0	0	0	0	10	0	0	0	10	2	0	11	0	13	0	0	3	0	3	26	0
8:45	0	0	0	0	0	5	0	0	0	5	1	0	7	0	8	0	0	3	0	3	16	0
Total	0	0	0	0	0	28	0	0	0	28	11	0	34	0	45	0	0	14	0	14	87	0
16:00	0	0	0	0	0	6	0	1	0	7	4	0	21	0	25	0	0	7	0	7	39	0
16:15	1	0	0	0	1	15	0	0	0	15	7	0	16	0	23	0	0	2	0	2	41	0
16:30	0	0	0	0	0	16	0	0	0	16	6	0	10	0	16	0	0	7	0	7	39	0
16:45	0	0	0	0	0	21	0	0	0	21	4	0	13	0	17	0	0	4	0	4	42	0
Total	1	0	0	0	1	58	0	1	0	59	21	0	60	0	81	0	0	20	0	20	161	0
17:00	0	0	0	0	0	17	0	2	0	19	6	0	18	0	24	0	0	3	0	3	46	0
17:15	1	0	0	0	1	17	0	0	0	17	3	0	17	0	20	0	0	8	0	8	46	0
17:30	0	0	0	0	0	14	0	0	0	14	3	0	21	0	24	0	0	6	0	6	44	0
17:45	1	0	0	0	1	21	0	1	0	22	2	0	13	0	15	0	0	5	0	5	43	0
Total	2	0	0	0	2	69	0	3	0	72	14	0	69	0	83	0	0	22	0	22	179	0
Grand Total	3	0	0	0	3	170	0	4	0	174	48	0	187	0	235	0	0	68	0	68	480	0
Apprch %	100.0%	0.0%	0.0%	0.0%		97.7%	0.0%	2.3%	0.0%		20.4%	0.0%	79.6%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	0.6%	0.0%	0.0%	0.0%	0.6%	35.4%	0.0%	0.8%	0.0%	36.3%	10.0%	0.0%	39.0%	0.0%	49.0%	0.0%	0.0%	14.2%	0.0%	14.2%	100.0%	

AM PEAK HOUR	Driveway 8A Southbound					Wentworth Avenue Westbound					Driveway 9A Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	5	0	0	0	5	1	0	10	0	11	0	0	6	0	6	22
8:00	0	0	0	0	0	6	0	0	0	6	5	0	7	0	12	0	0	5	0	5	23
8:15	0	0	0	0	0	7	0	0	0	7	3	0	9	0	12	0	0	3	0	3	22
8:30	0	0	0	0	0	10	0	0	0	10	2	0	11	0	13	0	0	3	0	3	26
Total Volume	0	0	0	0	0	28	0	0	0	28	11	0	37	0	48	0	0	17	0	17	93
% App Total	0.0%	0.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		22.9%	0.0%	77.1%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.700	.000	.000	.000	.700	.550	.000	.841	.000	.923	.000	.000	.708	.000	.708	.894

PM PEAK HOUR	Driveway 8A Southbound					Wentworth Avenue Westbound					Driveway 9A Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	17	0	2	0	19	6	0	18	0	24	0	0	3	0	3	46
17:15	1	0	0	0	1	17	0	0	0	17	3	0	17	0	20	0	0	8	0	8	46
17:30	0	0	0	0	0	14	0	0	0	14	3	0	21	0	24	0	0	6	0	6	44
17:45	1	0	0	0	1	21	0	1	0	22	2	0	13	0	15	0	0	5	0	5	43
Total Volume	2	0	0	0	2	69	0	3	0	72	14	0	69	0	83	0	0	22	0	22	179
% App Total	100.0%	0.0%	0.0%	0.0%		95.8%	0.0%	4.2%	0.0%		16.9%	0.0%	83.1%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.500	.000	.000	.000	.500	.821	.000	.375	.000	.818	.583	.000	.821	.000	.865	.000	.000	.688	.000	.688	.973

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-009 Driveway 8A-9A & Wentworth Avenue
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Driveway 8A Southbound					Wentworth Avenue Westbound					Driveway 9A Northbound					Wentworth Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	100.0%		100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Driveway 8A Southbound					Wentworth Avenue Westbound					Driveway 9A Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0		0	0	0	0		0	0	0	1		1	0	0	0		0	1
8:00	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
8:15	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
8:30	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Total Volume	0	0	0		0	0	0	0		0	0	0	1		1	0	0	0		0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.250		.250	.000	.000	.000		.000	.250

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-109 Driveway 8C-9B & Wentworth Avenue
Date : 11/10/2015

Unshifted Count = All Vehicles

	Driveway 8C Southbound					Wentworth Avenue Westbound					Driveway 9B Northbound					Wentworth Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	1	0	0	1	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	4	0
7:15	0	0	0	0	0	1	0	0	0	1	2	0	2	0	4	0	0	1	0	1	6	0
7:30	0	1	0	0	1	2	0	1	0	3	2	0	5	0	7	0	0	0	0	0	11	0
7:45	2	1	0	0	3	3	0	2	0	5	1	0	6	0	7	0	0	0	0	0	15	0
Total	2	3	0	0	5	6	0	3	0	9	5	0	16	0	21	0	0	1	0	1	36	0
8:00	2	0	1	0	3	1	0	0	0	1	0	0	3	0	3	1	0	0	0	1	8	0
8:15	3	0	0	0	3	2	0	2	0	4	1	0	4	0	5	0	0	1	0	1	13	0
8:30	2	0	0	0	2	3	0	2	0	5	0	0	7	0	7	0	0	0	0	0	14	0
8:45	3	0	1	0	4	6	0	11	0	17	1	0	9	0	10	0	0	0	0	0	31	0
Total	10	0	2	0	12	12	0	15	0	27	2	0	23	0	25	1	0	1	0	2	66	0
16:00	11	2	1	0	14	9	0	4	0	13	0	1	16	0	17	1	0	0	0	1	45	0
16:15	10	1	2	0	13	8	0	3	0	11	2	0	12	0	14	0	0	0	0	0	38	0
16:30	10	3	0	0	13	12	0	9	0	21	2	0	10	0	12	1	0	1	0	2	48	0
16:45	7	1	2	0	10	8	0	6	0	14	8	0	14	0	22	1	0	0	0	1	47	0
Total	38	7	5	0	50	37	0	22	0	59	12	1	52	0	65	3	0	1	0	4	178	0
17:00	4	1	2	0	7	5	0	1	0	6	3	1	17	0	21	1	0	0	0	1	35	0
17:15	5	1	1	0	7	6	0	5	0	11	4	0	13	0	17	1	0	0	0	1	36	0
17:30	9	1	0	0	10	8	0	3	0	11	6	0	19	0	25	0	0	0	0	0	46	0
17:45	7	1	1	0	9	7	0	2	0	9	3	0	20	0	23	0	0	1	0	1	42	0
Total	25	4	4	0	33	26	0	11	0	37	16	1	69	0	86	2	0	1	0	3	159	0
Grand Total	75	14	11	0	100	81	0	51	0	132	35	2	160	0	197	6	0	4	0	10	439	0
Apprch %	75.0%	14.0%	11.0%	0.0%		61.4%	0.0%	38.6%	0.0%		17.8%	1.0%	81.2%	0.0%		60.0%	0.0%	40.0%	0.0%			
Total %	17.1%	3.2%	2.5%	0.0%	22.8%	18.5%	0.0%	11.6%	0.0%	30.1%	8.0%	0.5%	36.4%	0.0%	44.9%	1.4%	0.0%	0.9%	0.0%	2.3%	100.0%	

AM PEAK HOUR	Driveway 8C Southbound					Wentworth Avenue Westbound					Driveway 9B Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	2	0	1	0	3	1	0	0	0	1	0	0	3	0	3	1	0	0	0	1	8
8:15	3	0	0	0	3	2	0	2	0	4	1	0	4	0	5	0	0	1	0	1	13
8:30	2	0	0	0	2	3	0	2	0	5	0	0	7	0	7	0	0	0	0	0	14
8:45	3	0	1	0	4	6	0	11	0	17	1	0	9	0	10	0	0	0	0	0	31
Total Volume	10	0	2	0	12	12	0	15	0	27	2	0	23	0	25	1	0	1	0	2	66
% App Total	83.3%	0.0%	16.7%	0.0%		44.4%	0.0%	55.6%	0.0%		8.0%	0.0%	92.0%	0.0%		50.0%	0.0%	50.0%	0.0%		
PHF	.833	.000	.500	.000	.750	.500	.000	.341	.000	.397	.500	.000	.639	.000	.625	.250	.000	.250	.000	.500	.532

PM PEAK HOUR	Driveway 8C Southbound					Wentworth Avenue Westbound					Driveway 9B Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	11	2	1	0	14	9	0	4	0	13	0	1	16	0	17	1	0	0	0	1	45
16:15	10	1	2	0	13	8	0	3	0	11	2	0	12	0	14	0	0	0	0	0	38
16:30	10	3	0	0	13	12	0	9	0	21	2	0	10	0	12	1	0	1	0	2	48
16:45	7	1	2	0	10	8	0	6	0	14	8	0	14	0	22	1	0	0	0	1	47
Total Volume	38	7	5	0	50	37	0	22	0	59	12	1	52	0	65	3	0	1	0	4	178
% App Total	76.0%	14.0%	10.0%	0.0%		62.7%	0.0%	37.3%	0.0%		18.5%	1.5%	80.0%	0.0%		75.0%	0.0%	25.0%	0.0%		
PHF	.864	.583	.625	.000	.893	.771	.000	.611	.000	.702	.375	.250	.813	.000	.739	.750	.000	.250	.000	.500	.927

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-109 Driveway 8C-9B & Wentworth Avenue
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Driveway 8C Southbound					Wentworth Avenue Westbound					Driveway 9B Northbound					Wentworth Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
7:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Grand Total	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1	3	0
Apprch %	0.0%	0.0%	0.0%			50.0%	0.0%	50.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%				
Total %	0.0%	0.0%	0.0%		0.0%	33.3%	0.0%	33.3%		66.7%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	33.3%		33.3%	100.0%	

AM PEAK HOUR	Driveway 8C Southbound					Wentworth Avenue Westbound					Driveway 9B Northbound					Wentworth Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
8:15	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
8:30	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
8:45	0	0	0		0	1	0	0		1	0	0	0		0	0	0	0		0	1
Total Volume	0	0	0		0	1	0	0		1	0	0	0		0	0	0	0		0	1
% App Total	0.0%	0.0%	0.0%			100.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.250	.000	.000		.250	.000	.000	.000		.000	.000	.000	.000		.000	.250

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-108 Freeport Boulevard & Driveway 8D
Date : 11/10/2015

Unshifted Count = All Vehicles

	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 8D Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	0
7:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
7:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Total	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	10	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
8:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
8:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Total	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	10	0
16:00	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
16:15	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
16:30	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	8	0
16:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3	0
Total	0	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	19	0
17:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7	0
17:15	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7	0
17:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Total	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	18	0
Grand Total	0	0	48	0	48	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	57	0
Apprch %	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	0.0%	0.0%	84.2%	0.0%	84.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.8%	0.0%	15.8%	100.0%	

AM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 8D Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
7:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
7:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	10
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.625

PM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 8D Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	8
16:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
17:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7
17:15	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7
Total Volume	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	25
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.679	.000	.679	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.000	.750	.781

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-108 Freeport Boulevard & Driveway 8D
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 8D Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	100.0%		100.0%	100.0%	

AM PEAK HOUR	Freeport Boulevard Southbound				Westbound				Freeport Boulevard Northbound				Driveway 8D Eastbound					
START TIME	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																	
Peak Hour For Entire Intersection Begins at 07:00																	
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% App Total	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	100.0%		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-409 Freeport Boulevard & Driveway 9C
Date : 11/10/2015

Unshifted Count = All Vehicles

	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9C Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9	0
7:15	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
7:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	6	0
7:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0
Total	0	0	18	0	18	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	23	0
8:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7	0
8:15	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
8:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5	0
8:45	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	12	0
Total	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	29	0
16:00	0	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	16	0
16:15	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	30	0
16:30	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	24	0
16:45	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	13	0
Total	0	0	58	0	58	0	0	0	0	0	0	0	0	0	0	0	0	25	0	25	83	0
17:00	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	22	0
17:15	0	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	24	0
17:30	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	18	0
17:45	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	27	0
Total	0	0	63	0	63	0	0	0	0	0	0	0	0	0	0	0	0	28	0	28	91	0
Grand Total	0	0	163	0	163	0	0	0	0	0	0	0	0	0	0	0	0	63	0	63	226	0
Apprch %	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	0.0%	0.0%	72.1%	0.0%	72.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.9%	0.0%	27.9%	100.0%	

AM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9C Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7
8:15	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5
8:45	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	12
Total Volume	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	29
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.600	.000	.600	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.625	.000	.625	.604

PM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9C Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	22
17:15	0	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	24
17:30	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	18
17:45	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	27
Total Volume	0	0	63	0	63	0	0	0	0	0	0	0	0	0	0	0	0	28	0	28	91
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.829	.000	.829	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.875	.000	.875	.843

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-509 Freeport Boulevard & Driveway 9D
Date : 11/10/2015

Unshifted Count = All Vehicles

	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9D Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	11	0
7:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	10	0
7:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5	0
7:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	10	0
Total	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	26	0	26	36	0
8:00	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	11	0
8:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	10	0
8:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	12	0
8:45	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	11	0
Total	0	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	28	0	28	44	0
16:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	26	0
16:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	18	0
16:30	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	22	0
16:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	25	0	25	27	0
Total	0	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	80	0	80	93	0
17:00	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	30	0
17:15	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	25	0
17:30	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	26	0
17:45	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	24	0	24	29	0
Total	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	85	0	85	110	0
Grand Total	0	0	64	0	64	0	0	0	0	0	0	0	0	0	0	0	0	219	0	219	283	0
Apprch %	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%			
Total %	0.0%	0.0%	22.6%	0.0%	22.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	77.4%	0.0%	77.4%	100.0%	

AM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9D Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	11
8:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	10
8:30	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	12
8:45	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	11
Total Volume	0	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	28	0	28	44
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.800	.000	.800	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.875	.000	.875	.917

PM PEAK HOUR	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9D Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	30
17:15	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	25
17:30	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	26
17:45	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	24	0	24	29
Total Volume	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	85	0	85	110
% App Total	0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.000	.781	.000	.781	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.885	.000	.885	.917

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-509 Freeport Boulevard & Driveway 9D
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Freeport Boulevard Southbound					Westbound					Freeport Boulevard Northbound					Driveway 9D Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	100.0%		100.0%	100.0%	

PM PEAK HOUR	Freeport Boulevard Southbound				Westbound				Freeport Boulevard Northbound				Driveway 9D Eastbound				
START TIME	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																	
Peak Hour For Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-209 Driveway 9E & Potrero Way
Date : 11/10/2015

Unshifted Count = All Vehicles

	Driveway 9E Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	0	0	0	2	0	0	7	0	7	0	0	0	0	0	1	0	0	0	1	10	0
7:15	1	1	2	0	4	0	0	12	0	12	0	0	0	0	0	2	0	0	0	2	18	0
7:30	1	0	2	0	3	0	0	3	0	3	0	0	0	0	0	2	0	0	0	2	8	0
7:45	5	2	0	0	7	0	0	9	0	9	0	1	0	0	1	5	0	0	0	5	22	0
Total	9	3	4	0	16	0	0	31	0	31	0	1	0	0	1	10	0	0	0	10	58	0
8:00	4	1	1	0	6	0	0	13	0	13	0	0	0	0	0	1	0	0	0	1	20	0
8:15	2	0	4	0	6	0	0	7	0	7	0	2	0	0	2	1	0	0	0	1	16	0
8:30	5	2	1	0	8	0	0	6	0	6	0	1	0	0	1	4	0	0	0	4	19	0
8:45	4	1	0	0	5	0	0	7	0	7	0	2	0	0	2	4	0	0	0	4	18	0
Total	15	4	6	0	25	0	0	33	0	33	0	5	0	0	5	10	0	0	0	10	73	0
16:00	16	3	2	0	21	0	0	22	0	22	0	4	0	0	4	4	0	0	0	4	51	0
16:15	8	5	7	0	20	0	0	21	0	21	0	4	0	0	4	2	0	0	0	2	47	0
16:30	15	3	4	0	22	0	0	25	0	25	0	5	0	0	5	1	0	0	0	1	53	0
16:45	6	1	2	0	9	0	0	25	0	25	0	4	0	0	4	3	0	0	0	3	41	0
Total	45	12	15	0	72	0	0	93	0	93	0	17	0	0	17	10	0	0	0	10	192	0
17:00	13	2	2	0	17	0	0	27	0	27	0	5	0	0	5	4	0	0	0	4	53	0
17:15	13	2	3	0	18	0	0	27	0	27	0	2	0	0	2	2	0	0	0	2	49	0
17:30	11	4	7	0	22	0	0	26	0	26	0	4	0	0	4	4	0	0	0	4	56	0
17:45	11	2	7	0	20	0	0	21	0	21	0	2	0	0	2	2	0	0	0	2	45	0
Total	48	10	19	0	77	0	0	101	0	101	0	13	0	0	13	12	0	0	0	12	203	0
Grand Total	117	29	44	0	190	0	0	258	0	258	0	36	0	0	36	42	0	0	0	42	526	0
Apprch %	61.6%	15.3%	23.2%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%			
Total %	22.2%	5.5%	8.4%	0.0%	36.1%	0.0%	0.0%	49.0%	0.0%	49.0%	0.0%	6.8%	0.0%	0.0%	6.8%	8.0%	0.0%	0.0%	0.0%	8.0%	100.0%	

AM PEAK HOUR	Driveway 9E Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	5	2	0	0	7	0	0	9	0	9	0	1	0	0	1	5	0	0	0	5	22
8:00	4	1	1	0	6	0	0	13	0	13	0	0	0	0	0	1	0	0	0	1	20
8:15	2	0	4	0	6	0	0	7	0	7	0	2	0	0	2	1	0	0	0	1	16
8:30	5	2	1	0	8	0	0	6	0	6	0	1	0	0	1	4	0	0	0	4	19
Total Volume	16	5	6	0	27	0	0	35	0	35	0	4	0	0	4	11	0	0	0	11	77
% App Total	59.3%	18.5%	22.2%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.800	.625	.375	.000	.844	.000	.000	.673	.000	.673	.000	.500	.000	.000	.500	.550	.000	.000	.000	.550	.875

PM PEAK HOUR	Driveway 9E Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	13	2	2	0	17	0	0	27	0	27	0	5	0	0	5	4	0	0	0	4	53
17:15	13	2	3	0	18	0	0	27	0	27	0	2	0	0	2	2	0	0	0	2	49
17:30	11	4	7	0	22	0	0	26	0	26	0	4	0	0	4	4	0	0	0	4	56
17:45	11	2	7	0	20	0	0	21	0	21	0	2	0	0	2	2	0	0	0	2	45
Total Volume	48	10	19	0	77	0	0	101	0	101	0	13	0	0	13	12	0	0	0	12	203
% App Total	62.3%	13.0%	24.7%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.923	.625	.679	.000	.875	.000	.000	.935	.000	.935	.000	.650	.000	.000	.650	.750	.000	.000	.000	.750	.906

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-209 Driveway 9E & Potrero Way
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Driveway 9E Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
Grand Total	1	1	0	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4	0
Apprch %	50.0%	50.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	25.0%	25.0%	0.0%		50.0%	0.0%	0.0%	50.0%		50.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Driveway 9E Southbound				Potrero Way Westbound				Driveway Northbound				Potrero Way Eastbound				
START TIME	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	LEFT	THRU	RIGHT	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																	
Peak Hour For Entire Intersection Begins at 07:45																	
7:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
% App Total	0.0%	100.0%	0.0%		0.0%	0.0%	100.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-309 Driveways 9FGH & Potrero Way
Date : 11/10/2015

Unshifted Count = All Vehicles

	Driveways 9FGH Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0
7:15	2	0	0	0	2	0	0	5	0	5	0	1	0	0	1	0	0	0	0	0	8	0
7:30	3	0	1	0	4	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	7	0
7:45	1	0	1	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4	0
Total	8	0	2	0	10	0	0	10	0	10	0	2	0	0	2	0	0	0	0	0	22	0
8:00	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
8:15	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
8:30	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
8:45	1	0	0	0	1	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	4	0
Total	4	0	0	0	4	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	10	0
16:00	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Total	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
17:00	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
17:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	4	0	0	0	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	6	0
Grand Total	20	1	2	0	23	0	0	14	0	14	0	6	0	0	6	0	0	0	0	0	43	0
Apprch %	87.0%	4.3%	8.7%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	46.5%	2.3%	4.7%	0.0%	53.5%	0.0%	0.0%	32.6%	0.0%	32.6%	0.0%	14.0%	0.0%	0.0%	14.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Driveways 9FGH Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
7:15	2	0	0	0	2	0	0	5	0	5	0	1	0	0	1	0	0	0	0	0	8
7:30	3	0	1	0	4	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	7
7:45	1	0	1	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4
Total Volume	8	0	2	0	10	0	0	10	0	10	0	2	0	0	2	0	0	0	0	0	22
% App Total	80.0%	0.0%	20.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.667	.000	.500	.000	.625	.000	.000	.500	.000	.500	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.688

PM PEAK HOUR	Driveways 9FGH Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	5	0	0	0	5	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	7
% App Total	100.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.417	.000	.000	.000	.417	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.438

ALL TRAFFIC DATA

City of Sacramento
All Vehicles On Unshifted
Heavy Trucks On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7872-309 Driveways 9FGH & Potrero Way
Date : 11/10/2015

Bank 1 Count = Heavy Trucks

	Driveways 9FGH Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:15	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	4	0
7:30	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	0	3	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	8	0
8:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Grand Total	6	0	0	0	6	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	11	0
Apprch %	100.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	54.5%	0.0%	0.0%		54.5%	0.0%	0.0%	45.5%		45.5%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	Driveways 9FGH Southbound					Potrero Way Westbound					Driveway Northbound					Potrero Way Eastbound					
START TIME	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	LEFT	THRU	RIGHT		APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	2	0	0		2	0	0	0		0	0	0	0		0	0	0	0		0	2
7:15	0	0	0		0	0	0	4		4	0	0	0		0	0	0	0		0	4
7:30	1	0	0		1	0	0	1		1	0	0	0		0	0	0	0		0	2
7:45	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Total Volume	3	0	0		3	0	0	5		5	0	0	0		0	0	0	0		0	8
% App Total	100.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.375	.000	.000		.375	.000	.000	.313		.313	.000	.000	.000		.000	.000	.000	.000		.000	.500

Prepared by NDS/ATD

VOLUME

Wentworth Avenue east of Mead Avenue

Day: Tuesday
Date: 11/10/2015

City: Sacramento
Project #: 15-7873-001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	832	799	1,631

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	0		0		0		12:00	0	0	11		18		29	
00:15	0	0	0		2		2		12:15	0	0	11		14		25	
00:30	0	0	0		0		0		12:30	0	0	11		8		19	
00:45	0	0	0		0	2	0	2	12:45	0	0	11	44	5	45	16	89
01:00	0	0	0		0		0		13:00	0	0	11		14		25	
01:15	0	0	0		0		0		13:15	0	0	16		13		29	
01:30	0	0	0		0		0		13:30	0	0	13		20		33	
01:45	0	0	0		0		0		13:45	0	0	10	50	9	56	19	106
02:00	0	0	0		0		0		14:00	0	0	15		10		25	
02:15	0	0	0		0		0		14:15	0	0	15		18		33	
02:30	0	0	0		0		0		14:30	0	0	19		17		36	
02:45	0	0	0		0		0		14:45	0	0	24	73	12	57	36	130
03:00	0	0	0		0		0		15:00	0	0	27		23		50	
03:15	0	0	0		1		1		15:15	0	0	19		21		40	
03:30	0	0	0		0		0		15:30	0	0	23		20		43	
03:45	0	0	0		0	1	0	1	15:45	0	0	24	93	27	91	51	184
04:00	0	0	0		0		0		16:00	0	0	20		17		37	
04:15	0	0	1		0		1		16:15	0	0	25		22		47	
04:30	0	0	0		0		0		16:30	0	0	21		23		44	
04:45	0	0	0	1	0		0	1	16:45	0	0	9	75	25	87	34	162
05:00	0	0	0		0		0		17:00	0	0	17		21		38	
05:15	0	0	0		1		1		17:15	0	0	25		20		45	
05:30	0	0	0		1		1		17:30	0	0	25		24		49	
05:45	0	0	3	3	0	2	3	5	17:45	0	0	9	76	17	82	26	158
06:00	0	0	2		0		2		18:00	0	0	11		15		26	
06:15	0	0	5		1		6		18:15	0	0	16		23		39	
06:30	0	0	3		1		4		18:30	0	0	11		11		22	
06:45	0	0	1	11	3	5	4	16	18:45	0	0	4	42	13	62	17	104
07:00	0	0	12		7		19		19:00	0	0	9		8		17	
07:15	0	0	11		6		17		19:15	0	0	4		4		8	
07:30	0	0	19		10		29		19:30	0	0	6		10		16	
07:45	0	0	15	57	10	33	25	90	19:45	0	0	2	21	9	31	11	52
08:00	0	0	22		15		37		20:00	0	0	4		10		14	
08:15	0	0	17		7		24		20:15	0	0	4		10		14	
08:30	0	0	21		7		28		20:30	0	0	8		11		19	
08:45	0	0	19	79	10	39	29	118	20:45	0	0	3	19	8	39	11	58
09:00	0	0	19		14		33		21:00	0	0	4		4		8	
09:15	0	0	10		15		25		21:15	0	0	5		6		11	
09:30	0	0	9		10		19		21:30	0	0	1		4		5	
09:45	0	0	21	59	8	47	29	106	21:45	0	0	2	12	1	15	3	27
10:00	0	0	10		9		19		22:00	0	0	1		2		3	
10:15	0	0	8		13		21		22:15	0	0	2		4		6	
10:30	0	0	17		7		24		22:30	0	0	2		0		2	
10:45	0	0	12	47	10	39	22	86	22:45	0	0	0	5	2	8	2	13
11:00	0	0	12		16		28		23:00	0	0	0		0		0	
11:15	0	0	21		15		36		23:15	0	0	0		3		3	
11:30	0	0	22		7		29		23:30	0	0	0		2		2	
11:45	0	0	10	65	14	52	24	117	23:45	0	0	0		1	6	1	6
TOTALS				322		220		**542**	**TOTALS**				510		579		**1089**
SPLIT %				59.4%		40.6%		**33.2%**	**SPLIT %**				46.8%		53.2%		**66.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	832	799	1,631

AM Peak Hour			08:00	11:15	**08:00**	**PM Peak Hour**	14:45	15:00	**15:00**
AM Pk Volume			79	54	**118**	**PM Pk Volume**	93	91	**184**
Pk Hr Factor			0.898	0.750	**0.797**	**Pk Hr Factor**	0.861	0.843	**0.902**
7 - 9 Volume	0	0	136	72	**208**	**4 - 6 Volume**	0	0	151	169	**320**
7 - 9 Peak Hour			08:00	07:30	**08:00**	**4 - 6 Peak Hour**	16:45	16:15	**16:45**
7 - 9 Pk Volume	0	0	79	42	**118**	**4 - 6 Pk Volume**	0	0	76	91	**166**
Pk Hr Factor	0.000	0.000	0.898	0.700	**0.797**	**Pk Hr Factor**	0.000	0.000	0.760	0.910	**0.847**

Prepared by NDS/ATD

VOLUME

Mead Avenue north of Wentworth Avenue

Day: Tuesday
Date: 11/10/2015

City: Sacramento
Project #: 15-7873-002

DAILY TOTALS	NB	SB	EB	WB	Total
	334	343	0	0	677

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	8		8		0	0	16	
00:15	0		1		0	0	1		12:15	4		4		0	0	8	
00:30	0		0		0	0	0		12:30	3		8		0	0	11	
00:45	0		0	1	0	0	0	1	12:45	2	17	2	22	0	0	4	39
01:00	0		0		0	0	0		13:00	5		6		0	0	11	
01:15	0		0		0	0	0		13:15	3		5		0	0	8	
01:30	0		0		0	0	0		13:30	4		9		0	0	13	
01:45	0		0		0	0	0		13:45	7	19	5	25	0	0	12	44
02:00	0		0		0	0	0		14:00	7		2		0	0	9	
02:15	0		0		0	0	0		14:15	4		5		0	0	9	
02:30	0		0		0	0	0		14:30	7		8		0	0	15	
02:45	0		0		0	0	0		14:45	5	23	14	29	0	0	19	52
03:00	0		0		0	0	0		15:00	11		12		0	0	23	
03:15	1		0		0	0	1		15:15	12		9		0	0	21	
03:30	0		0		0	0	0		15:30	7		12		0	0	19	
03:45	0	1	0		0	0	0	1	15:45	8	38	7	40	0	0	15	78
04:00	0		0		0	0	0		16:00	7		11		0	0	18	
04:15	0		1		0	0	1		16:15	7		12		0	0	19	
04:30	1		0		0	0	1		16:30	10		11		0	0	21	
04:45	0	1	0	1	0	0	0	2	16:45	7	31	1	35	0	0	8	66
05:00	1		0		0	0	1		17:00	6		12		0	0	18	
05:15	1		1		0	0	2		17:15	4		7		0	0	11	
05:30	0		0		0	0	0		17:30	13		10		0	0	23	
05:45	1	3	0	1	0	0	1	4	17:45	5	28	4	33	0	0	9	61
06:00	0		1		0	0	1		18:00	7		6		0	0	13	
06:15	1		1		0	0	2		18:15	9		6		0	0	15	
06:30	2		1		0	0	3		18:30	7		3		0	0	10	
06:45	2	5	0	3	0	0	2	8	18:45	5	28	5	20	0	0	10	48
07:00	4		5		0	0	9		19:00	7		2		0	0	9	
07:15	6		4		0	0	10		19:15	3		1		0	0	4	
07:30	5		4		0	0	9		19:30	4		5		0	0	9	
07:45	4	19	9	22	0	0	13	41	19:45	7	21	1	9	0	0	8	30
08:00	6		5		0	0	11		20:00	3		3		0	0	6	
08:15	5		7		0	0	12		20:15	4		3		0	0	7	
08:30	2		5		0	0	7		20:30	4		2		0	0	6	
08:45	9	22	10	27	0	0	19	49	20:45	1	12	1	9	0	0	2	21
09:00	13		5		0	0	18		21:00	1		2		0	0	3	
09:15	4		0		0	0	4		21:15	2		3		0	0	5	
09:30	2		1		0	0	3		21:30	0		2		0	0	2	
09:45	2	21	10	16	0	0	12	37	21:45	0	3	1	8	0	0	1	11
10:00	7		3		0	0	10		22:00	1		1		0	0	2	
10:15	1		3		0	0	4		22:15	3		1		0	0	4	
10:30	3		6		0	0	9		22:30	0		0		0	0	0	
10:45	3	14	7	19	0	0	10	33	22:45	2	6	0	2	0	0	2	8
11:00	5		4		0	0	9		23:00	0		0		0	0	0	
11:15	6		4		0	0	10		23:15	2		1		0	0	3	
11:30	5		9		0	0	14		23:30	0		0		0	0	0	
11:45	4	20	3	20	0	0	7	40	23:45	0	2	0	1	0	0	0	3
TOTALS		106		110				**216**	**TOTALS**		228		233				**461**
SPLIT %		49.1%		50.9%				**31.9%**	**SPLIT %**		49.5%		50.5%				**68.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	334	343	0	0	677

AM Peak Hour	08:15	08:00					**08:15**		**PM Peak Hour**	15:00	14:45					**14:45**		
AM Pk Volume	29	27					**56**		**PM Pk Volume**	38	47					**82**		
Pk Hr Factor	0.558	0.675					**0.737**		**Pk Hr Factor**	0.792	0.839					**0.891**		
7 - 9 Volume	41	49	0	0			**90**		**4 - 6 Volume**	59	68	0	0			**127**		
7 - 9 Peak Hour	08:00	08:00					**08:00**		**4 - 6 Peak Hour**	16:00	16:15					**16:00**		
7 - 9 Pk Volume	22	27	0	0			**49**		**4 - 6 Pk Volume**	31	36	0	0			**66**		
Pk Hr Factor	0.611	0.675	0.000	0.000			**0.645**		**Pk Hr Factor**	0.775	0.750	0.000	0.000			**0.786**		

15-7874 Sacramento

Raley's Shopping Center Freeport Boulevard
Vehicle Occupancy Driveways 9C & 9D
Tuesday, November 10, 2015

	Driveway 9C				
	Inbound Vehicle Occupancy				
AM	1	2	3	4+	Total
7:00 AM	5	2	0	0	7
7:15 AM	5	0	0	0	5
7:30 AM	4	0	0	0	4
7:45 AM	2	0	0	0	2
8:00 AM	4	1	0	0	5
8:15 AM	4	1	0	0	5
8:30 AM	3	1	0	0	4
8:45 AM	9	1	0	0	10
Totals	36	6	0	0	42

	Driveway 9C				
	Outbound Vehicle Occupancy				
AM	1	2	3	4+	Total
7:00 AM	1	0	1	0	2
7:15 AM	0	0	0	0	0
7:30 AM	2	0	0	0	2
7:45 AM	1	0	0	0	1
8:00 AM	2	0	0	0	2
8:15 AM	0	0	0	0	0
8:30 AM	1	0	0	0	1
8:45 AM	2	0	0	0	2
Totals	9	0	1	0	10

	Driveway 9C				
	Inbound Vehicle Occupancy				
PM	1	2	3	4+	Total
4:00 PM	7	6	0	0	13
4:15 PM	14	3	3	0	20
4:30 PM	11	3	0	0	14
4:45 PM	9	2	0	0	11
5:00 PM	13	0	1	0	14
5:15 PM	11	5	0	0	16
5:30 PM	9	4	1	0	14
5:45 PM	15	4	0	0	19
Totals	89	27	5	0	121

	Driveway 9C				
	Outbound Vehicle Occupancy				
PM	1	2	3	4+	Total
4:00 PM	3	0	0	0	3
4:15 PM	10	0	0	0	10
4:30 PM	10	0	0	0	10
4:45 PM	1	1	0	0	2
5:00 PM	8	0	0	0	8
5:15 PM	3	5	0	0	8
5:30 PM	4	0	0	0	4
5:45 PM	6	1	1	0	8
Totals	45	7	1	0	53

15-7874 Sacramento

Raley's Shopping Center Freeport Boulevard
Vehicle Occupancy Driveways 9C & 9D
Tuesday, November 10, 2015

	Driveway 9D				
	Inbound Vehicle Occupancy				
AM	1	2	3	4+	Total
7:00 AM	4	0	0	0	4
7:15 AM	1	0	0	0	1
7:30 AM	1	0	0	1	2
7:45 AM	2	1	0	0	3
8:00 AM	4	0	0	0	4
8:15 AM	2	1	0	0	3
8:30 AM	3	1	0	0	4
8:45 AM	4	1	0	0	5
Totals	21	4	0	1	26

	Driveway 9D				
	Outbound Vehicle Occupancy				
AM	1	2	3	4+	Total
7:00 AM	7	0	0	0	7
7:15 AM	8	0	1	0	9
7:30 AM	3	0	0	0	3
7:45 AM	7	0	0	0	7
8:00 AM	5	2	0	0	7
8:15 AM	7	0	0	0	7
8:30 AM	8	0	0	0	8
8:45 AM	6	0	0	0	6
Totals	51	2	1	0	54

	Driveway 9D				
	Inbound Vehicle Occupancy				
PM	1	2	3	4+	Total
4:00 PM	3	1	1	0	5
4:15 PM	2	1	0	0	3
4:30 PM	3	0	0	0	3
4:45 PM	2	0	0	0	2
5:00 PM	7	1	0	0	8
5:15 PM	6	1	0	0	7
5:30 PM	5	0	0	0	5
5:45 PM	3	2	0	0	5
Totals	31	6	1	0	38

	Driveway 9D				
	Outbound Vehicle Occupancy				
PM	1	2	3	4+	Total
4:00 PM	13	7	0	1	21
4:15 PM	9	4	1	1	15
4:30 PM	15	2	1	1	19
4:45 PM	20	5	0	0	25
5:00 PM	18	2	1	1	22
5:15 PM	16	1	1	0	18
5:30 PM	20	0	1	0	21
5:45 PM	16	6	2	0	24
Totals	127	27	7	4	165

15-7874 Sacramento

Raley's Shopping Center Freeport Boulevard
Pedestrians & Bicycles Entering and Exiting Shopping Center
O & D TE=Transit Center East, TW=Transit Center West
Tuesday, November 10, 2015

Driveway 9A

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	2	0
7:30 AM	0	0	2	0
7:45 AM	2	0	1	0
8:00 AM	1	1	2	0
8:15 AM	1	0	1	1
8:30 AM	4	0	3	0
8:45 AM	1	1	0	0
Total	9	2	11	1

Driveway 9B

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Total	0	0	0	0

Driveway 9A

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	1	0	2	0
4:15 PM	4	0	5	0
4:30 PM	3	0	2	0
4:45 PM	3	0	2	0
5:00 PM	3	0	3	1
5:15 PM	1	0	3	0
5:30 PM	0	0	1	0
5:45 PM	1	0	1	0
Total	16	0	19	1

Driveway 9B

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
Total	0	0	0	0

Driveway 9C

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	2	0	0	0
7:30 AM	0	0	2	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	1	0
8:30 AM	1	0	0	0
8:45 AM	1	0	0	0
Total	4	0	3	0

Driveway 9D

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	1
7:45 AM	0	0	0	1
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Total	0	0	0	2

Driveway 9C

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	1, 1TE	0
4:15 PM	0	0	0	0
4:30 PM	1, 1TE	1	0	0
4:45 PM	2	0	2	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	1	0	0
5:45 PM	0	0	0	0
Total	4	2	4	0

Driveway 9D

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	1	0
4:15 PM	0	0	0	0
4:30 PM	0	0	1	0
4:45 PM	0	0	0	1
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
Total	0	0	2	1

Driveway 9E

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	1	0	2	0
7:15 AM	5	2	2	0
7:30 AM	2	0	2	1
7:45 AM	3	0	2	0
8:00 AM	1	1	3	0
8:15 AM	1	0	4	0
8:30 AM	7	1	12	0
8:45 AM	7	0	7	1
Total	27	4	34	2

Driveway 9FGH

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Total	0	0	0	0

Driveway 9E

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	12	0	5	0
4:15 PM	5	1	9	0
4:30 PM	3	1	4	0
4:45 PM	6	1	6	1
5:00 PM	6	0	8	0
5:15 PM	4	0	3	0
5:30 PM	1	1	0	0
5:45 PM	5	1	3	0
Total	42	5	38	1

Driveway 9FGH

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
Total	0	0	0	0

Sidewalk Freeport

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	2	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	1 TW	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	1	0	0	0
Total	4	0	0	0

Sidewalk Wentworth

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	2	0
7:30 AM	1	0	0	0
7:45 AM	0	0	0	0
8:00 AM	1	0	0	0
8:15 AM	1	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Total	3	0	2	0

Sidewalk Freeport

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	1 TW	0	2, 2 TW	0
4:15 PM	2	0	1	0
4:30 PM	0	0	1 TW	0
4:45 PM	0	0	1 TW	0
5:00 PM	0	0	2	0
5:15 PM	0	0	0	0
5:30 PM	1 TW	0	0	0
5:45 PM	0	0	0	0
Total	4	0	9	0

Sidewalk Wentworth

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	2	0
4:45 PM	1	0	2	0
5:00 PM	0	0	0	0
5:15 PM	0	0	1	0
5:30 PM	1	0	1	0
5:45 PM	0	1	0	0
Total	2	1	6	0

Sidewalk Potrero

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
Total	0	0	0	0

Sidewalk Potrero

	Inbound		Outbound	
	Peds	Bikes	Peds	Bikes
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
Total	0	0	0	0

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7006-001 I-5 NB Ramps & Sutterville Road
Date : 1/7/2016

Unshifted Count = All Vehicles & Uturns

	I-5 NB Ramps Southbound					Sutterville Road Westbound					I-5 NB Ramps Northbound					Sutterville Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	36	82	0	118	0	0	62	0	62	2	43	0	0	45	225	0
7:15	0	0	0	0	0	0	46	122	0	168	0	1	51	0	52	2	63	0	0	65	285	0
7:30	0	0	0	0	0	0	46	132	0	178	0	1	51	0	52	4	72	0	0	76	306	0
7:45	0	0	0	0	0	0	81	149	0	230	1	0	52	0	53	2	90	0	0	92	375	0
Total	0	0	0	0	0	0	209	485	0	694	1	2	216	0	219	10	268	0	0	278	1191	0
8:00	0	0	0	0	0	0	66	121	0	187	0	0	46	0	46	5	65	0	0	70	303	0
8:15	0	0	0	0	0	0	45	130	0	175	1	1	41	0	43	3	62	0	0	65	283	0
8:30	0	0	0	0	0	0	32	92	0	124	0	0	49	0	49	0	58	0	0	58	231	0
8:45	0	0	0	0	0	0	41	94	0	135	1	0	48	0	49	2	60	0	0	62	246	0
Total	0	0	0	0	0	0	184	437	0	621	2	1	184	0	187	10	245	0	0	255	1063	0
16:00	0	0	0	0	0	0	82	92	0	174	0	0	52	0	52	11	148	0	0	159	385	0
16:15	0	0	0	0	0	0	81	80	0	161	0	1	56	0	57	19	95	0	0	114	332	0
16:30	0	0	0	0	0	0	100	87	0	187	0	0	65	0	65	3	120	0	0	123	375	0
16:45	0	0	0	0	0	0	112	86	0	198	2	0	53	0	55	2	93	0	0	95	348	0
Total	0	0	0	0	0	0	375	345	0	720	2	1	226	0	229	35	456	0	0	491	1440	0
17:00	0	0	0	0	0	0	93	89	0	182	2	0	72	0	74	3	87	0	0	90	346	0
17:15	0	0	0	0	0	0	115	78	0	193	0	0	79	0	79	5	90	0	0	95	367	0
17:30	0	0	0	0	0	0	119	67	0	186	1	2	60	0	63	8	105	0	0	113	362	0
17:45	0	0	0	0	0	0	138	71	0	209	1	0	62	0	63	2	111	0	0	113	385	0
Total	0	0	0	0	0	0	465	305	0	770	4	2	273	0	279	18	393	0	0	411	1460	0
Grand Total	0	0	0	0	0	0	1233	1572	0	2805	9	6	899	0	914	73	1362	0	0	1435	5154	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	44.0%	56.0%	0.0%		1.0%	0.7%	98.4%	0.0%		5.1%	94.9%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.9%	30.5%	0.0%	54.4%	0.2%	0.1%	17.4%	0.0%	17.7%	1.4%	26.4%	0.0%	0.0%	27.8%	100.0%	

AM PEAK HOUR	I-5 NB Ramps Southbound					Sutterville Road Westbound					I-5 NB Ramps Northbound					Sutterville Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	46	122	0	168	0	1	51	0	52	2	63	0	0	65	285
7:30	0	0	0	0	0	0	46	132	0	178	0	1	51	0	52	4	72	0	0	76	306
7:45	0	0	0	0	0	0	81	149	0	230	1	0	52	0	53	2	90	0	0	92	375
8:00	0	0	0	0	0	0	66	121	0	187	0	0	46	0	46	5	65	0	0	70	303
Total Volume	0	0	0	0	0	0	239	524	0	763	1	2	200	0	203	13	290	0	0	303	1269
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	31.3%	68.7%	0.0%		0.5%	1.0%	98.5%	0.0%		4.3%	95.7%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.738	.879	.000	.829	.250	.500	.962	.000	.958	.650	.806	.000	.000	.823	.846

PM PEAK HOUR	I-5 NB Ramps Southbound					Sutterville Road Westbound					I-5 NB Ramps Northbound					Sutterville Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	93	89	0	182	2	0	72	0	74	3	87	0	0	90	346
17:15	0	0	0	0	0	0	115	78	0	193	0	0	79	0	79	5	90	0	0	95	367
17:30	0	0	0	0	0	0	119	67	0	186	1	2	60	0	63	8	105	0	0	113	362
17:45	0	0	0	0	0	0	138	71	0	209	1	0	62	0	63	2	111	0	0	113	385
Total Volume	0	0	0	0	0	0	465	305	0	770	4	2	273	0	279	18	393	0	0	411	1460
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	60.4%	39.6%	0.0%		1.4%	0.7%	97.8%	0.0%		4.4%	95.6%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.842	.857	.000	.921	.500	.250	.864	.000	.883	.563	.885	.000	.000	.909	.948

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7006-002 I-5 SB Ramps & Sutterville Road
Date : 1/7/2016

Unshifted Count = All Vehicles & Uturns

	I-5 SB Ramps Southbound					Sutterville Road Westbound					I-5 SB Ramps Northbound					Sutterville Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	45	1	0	0	46	36	0	0	0	36	0	0	0	0	0	0	0	0	0	0	82	0
7:15	65	1	1	0	67	45	0	0	0	45	0	0	0	0	0	0	0	0	0	0	112	0
7:30	75	1	2	0	78	47	0	0	0	47	0	0	0	0	0	0	1	1	0	2	127	0
7:45	91	1	0	0	92	82	1	0	0	83	0	0	0	0	0	0	1	1	0	2	177	0
Total	276	4	3	0	283	210	1	0	0	211	0	0	0	0	0	0	2	2	0	4	498	0
8:00	69	0	0	0	69	65	0	0	0	65	0	0	0	0	0	0	1	0	0	1	135	0
8:15	66	2	0	0	68	45	1	0	0	46	0	0	0	0	0	0	0	0	0	0	114	0
8:30	57	1	0	0	58	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	89	0
8:45	62	0	0	0	62	43	0	0	0	43	0	0	0	0	0	0	0	1	0	1	106	0
Total	254	3	0	0	257	184	1	0	0	185	0	0	0	0	0	0	1	1	0	2	444	0
16:00	153	1	0	0	154	80	0	0	1	81	0	0	0	0	0	0	0	0	0	0	235	1
16:15	114	4	0	0	118	78	2	0	0	80	0	0	0	0	0	0	0	0	0	0	198	0
16:30	123	2	1	0	126	98	0	0	0	98	0	0	0	0	0	0	1	1	0	2	226	0
16:45	88	2	1	0	91	111	4	0	0	115	0	0	0	0	0	0	5	1	0	6	212	0
Total	478	9	2	0	489	367	6	0	1	374	0	0	0	0	0	0	6	2	0	8	871	1
17:00	90	1	0	0	91	91	1	0	2	94	0	0	0	0	0	0	0	2	0	2	187	2
17:15	92	1	0	0	93	117	0	0	0	117	0	0	0	0	0	0	1	0	0	1	211	0
17:30	113	1	2	0	116	120	1	0	0	121	0	0	0	0	0	0	2	1	0	3	240	0
17:45	111	0	0	0	111	133	0	0	0	133	0	0	0	0	0	0	1	2	0	3	247	0
Total	406	3	2	0	411	461	2	0	2	465	0	0	0	0	0	0	4	5	0	9	885	2
Grand Total	1414	19	7	0	1440	1222	10	0	3	1235	0	0	0	0	0	0	13	10	0	23	2698	3
Apprch %	98.2%	1.3%	0.5%	0.0%		98.9%	0.8%	0.0%	0.2%		0.0%	0.0%	0.0%	0.0%		0.0%	56.5%	43.5%	0.0%			
Total %	52.4%	0.7%	0.3%	0.0%	53.4%	45.3%	0.4%	0.0%	0.1%	45.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.4%	0.0%	0.9%	100.0%	

AM PEAK HOUR	I-5 SB Ramps Southbound					Sutterville Road Westbound					I-5 SB Ramps Northbound					Sutterville Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	75	1	2	0	78	47	0	0	0	47	0	0	0	0	0	0	1	1	0	2	127
7:45	91	1	0	0	92	82	1	0	0	83	0	0	0	0	0	0	1	1	0	2	177
8:00	69	0	0	0	69	65	0	0	0	65	0	0	0	0	0	0	1	0	0	1	135
8:15	66	2	0	0	68	45	1	0	0	46	0	0	0	0	0	0	0	0	0	0	114
Total Volume	301	4	2	0	307	239	2	0	0	241	0	0	0	0	0	0	3	2	0	5	553
% App Total	98.0%	1.3%	0.7%	0.0%		99.2%	0.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	60.0%	40.0%	0.0%		
PHF	.827	.500	.250	.000	.834	.729	.500	.000	.000	.726	.000	.000	.000	.000	.000	.000	.750	.500	.000	.625	.781

PM PEAK HOUR	I-5 SB Ramps Southbound					Sutterville Road Westbound					I-5 SB Ramps Northbound					Sutterville Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	90	1	0	0	91	91	1	0	2	94	0	0	0	0	0	0	0	2	0	2	187
17:15	92	1	0	0	93	117	0	0	0	117	0	0	0	0	0	0	1	0	0	1	211
17:30	113	1	2	0	116	120	1	0	0	121	0	0	0	0	0	0	2	1	0	3	240
17:45	111	0	0	0	111	133	0	0	0	133	0	0	0	0	0	0	1	2	0	3	247
Total Volume	406	3	2	0	411	461	2	0	2	465	0	0	0	0	0	0	4	5	0	9	885
% App Total	98.8%	0.7%	0.5%	0.0%		99.1%	0.4%	0.0%	0.4%		0.0%	0.0%	0.0%	0.0%		0.0%	44.4%	55.6%	0.0%		
PHF	.898	.750	.250	.000	.886	.867	.500	.000	.250	.874	.000	.000	.000	.000	.000	.000	.500	.625	.000	.750	.896

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7006-003 I-5 NB Ramps & Seamas Avenue
Date : 1/7/2016

Unshifted Count = All Vehicles & Uturns

	I-5 NB Ramps Southbound					Seamas Avenue Westbound					I-5 NB Ramps Northbound					Seamas Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	25	92	0	117	4	2	11	0	17	41	53	0	0	94	228	0
7:15	0	0	0	0	0	0	35	89	0	124	5	1	16	0	22	59	68	0	0	127	273	0
7:30	0	0	0	0	0	0	58	130	0	188	8	0	34	0	42	60	85	0	0	145	375	0
7:45	0	0	0	0	0	0	93	119	0	212	10	1	20	0	31	62	103	0	0	165	408	0
Total	0	0	0	0	0	0	211	430	0	641	27	4	81	0	112	222	309	0	0	531	1284	0
8:00	0	0	0	0	0	0	130	107	0	237	6	0	50	0	56	64	60	0	0	124	417	0
8:15	0	0	0	0	0	0	76	107	0	183	9	0	38	0	47	54	57	0	0	111	341	0
8:30	0	0	0	0	0	0	47	89	0	136	14	1	32	0	47	49	55	0	0	104	287	0
8:45	0	0	0	0	0	0	42	85	0	127	8	0	40	0	48	32	69	0	0	101	276	0
Total	0	0	0	0	0	0	295	388	0	683	37	1	160	0	198	199	241	0	0	440	1321	0
16:00	0	0	0	0	0	0	79	95	0	174	12	2	51	0	65	17	102	0	0	119	358	0
16:15	0	0	0	0	0	0	65	71	0	136	22	2	52	0	76	20	98	0	0	118	330	0
16:30	0	0	0	0	0	0	96	80	0	176	21	0	54	0	75	10	84	0	0	94	345	0
16:45	0	0	0	0	0	0	94	84	0	178	18	0	50	0	68	16	80	0	0	96	342	0
Total	0	0	0	0	0	0	334	330	0	664	73	4	207	0	284	63	364	0	0	427	1375	0
17:00	0	0	0	0	0	0	97	87	0	184	17	1	42	0	60	14	65	0	0	79	323	0
17:15	0	0	0	0	0	0	117	66	0	183	29	1	53	0	83	13	91	0	0	104	370	0
17:30	0	0	0	0	0	0	105	83	0	188	23	0	41	0	64	18	79	0	0	97	349	0
17:45	0	0	0	0	0	0	105	69	0	174	29	0	78	0	107	14	80	0	0	94	375	0
Total	0	0	0	0	0	0	424	305	0	729	98	2	214	0	314	59	315	0	0	374	1417	0
Grand Total	0	0	0	0	0	0	1264	1453	0	2717	235	11	662	0	908	543	1229	0	0	1772	5397	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	46.5%	53.5%	0.0%		25.9%	1.2%	72.9%	0.0%		30.6%	69.4%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.4%	26.9%	0.0%	50.3%	4.4%	0.2%	12.3%	0.0%	16.8%	10.1%	22.8%	0.0%	0.0%	32.8%	100.0%	

AM PEAK HOUR	I-5 NB Ramps Southbound					Seamas Avenue Westbound					I-5 NB Ramps Northbound					Seamas Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	58	130	0	188	8	0	34	0	42	60	85	0	0	145	375
7:45	0	0	0	0	0	0	93	119	0	212	10	1	20	0	31	62	103	0	0	165	408
8:00	0	0	0	0	0	0	130	107	0	237	6	0	50	0	56	64	60	0	0	124	417
8:15	0	0	0	0	0	0	76	107	0	183	9	0	38	0	47	54	57	0	0	111	341
Total Volume	0	0	0	0	0	0	357	463	0	820	33	1	142	0	176	240	305	0	0	545	1541
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	43.5%	56.5%	0.0%		18.8%	0.6%	80.7%	0.0%		44.0%	56.0%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.687	.890	.000	.865	.825	.250	.710	.000	.786	.938	.740	.000	.000	.826	.924

PM PEAK HOUR	I-5 NB Ramps Southbound					Seamas Avenue Westbound					I-5 NB Ramps Northbound					Seamas Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	97	87	0	184	17	1	42	0	60	14	65	0	0	79	323
17:15	0	0	0	0	0	0	117	66	0	183	29	1	53	0	83	13	91	0	0	104	370
17:30	0	0	0	0	0	0	105	83	0	188	23	0	41	0	64	18	79	0	0	97	349
17:45	0	0	0	0	0	0	105	69	0	174	29	0	78	0	107	14	80	0	0	94	375
Total Volume	0	0	0	0	0	0	424	305	0	729	98	2	214	0	314	59	315	0	0	374	1417
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	58.2%	41.8%	0.0%		31.2%	0.6%	68.2%	0.0%		15.8%	84.2%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.906	.876	.000	.969	.845	.500	.686	.000	.734	.819	.865	.000	.000	.899	.945

ALL TRAFFIC DATA

City of Sacramento
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7006-004 I-5 SB Ramps & Seamas Avenue
Date : 1/7/2016

Unshifted Count = All Vehicles & Uturns

	I-5 SB Ramps Southbound					Seamas Avenue Westbound					I-5 SB Ramps Northbound					Seamas Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	42	0	7	0	49	19	10	0	0	29	0	0	0	0	0	0	53	11	0	64	142	0
7:15	51	1	11	0	63	30	10	0	0	40	0	0	0	0	0	0	78	19	0	97	200	0
7:30	56	0	6	0	62	41	26	0	0	67	0	0	0	0	0	0	87	13	0	100	229	0
7:45	55	0	8	0	63	66	36	0	0	102	0	0	0	0	0	0	111	16	0	127	292	0
Total	204	1	32	0	237	156	82	0	0	238	0	0	0	0	0	0	329	59	0	388	863	0
8:00	30	0	15	0	45	87	48	0	0	135	0	0	0	0	0	0	94	18	0	112	292	0
8:15	37	1	10	0	48	52	34	0	0	86	0	0	0	0	0	0	79	17	0	96	230	0
8:30	30	0	6	0	36	40	20	0	0	60	0	0	0	0	0	0	69	19	0	88	184	0
8:45	49	1	8	0	58	25	25	0	0	50	0	0	0	0	0	0	52	15	0	67	175	0
Total	146	2	39	0	187	204	127	0	0	331	0	0	0	0	0	0	294	69	0	363	881	0
16:00	86	2	20	0	108	57	30	0	0	87	0	0	0	0	0	0	34	19	0	53	248	0
16:15	90	1	33	0	124	59	30	0	0	89	0	0	0	0	0	0	25	24	0	49	262	0
16:30	67	1	22	0	90	80	37	0	0	117	0	0	0	0	0	0	29	30	0	59	266	0
16:45	64	1	24	0	89	59	48	0	0	107	0	0	0	0	0	0	34	36	0	70	266	0
Total	307	5	99	0	411	255	145	0	0	400	0	0	0	0	0	0	122	109	0	231	1042	0
17:00	52	2	25	0	79	76	43	0	0	119	0	0	0	0	0	0	25	38	0	63	261	0
17:15	77	1	22	0	100	82	61	0	0	143	0	0	0	0	0	0	29	45	0	74	317	0
17:30	57	0	25	0	82	80	48	0	0	128	0	0	0	0	0	0	38	50	0	88	298	0
17:45	65	0	23	0	88	80	52	0	0	132	0	0	0	0	0	0	34	46	0	80	300	0
Total	251	3	95	0	349	318	204	0	0	522	0	0	0	0	0	0	126	179	0	305	1176	0
Grand Total	908	11	265	0	1184	933	558	0	0	1491	0	0	0	0	0	0	871	416	0	1287	3962	0
Apprch %	76.7%	0.9%	22.4%	0.0%		62.6%	37.4%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	67.7%	32.3%	0.0%			
Total %	22.9%	0.3%	6.7%	0.0%	29.9%	23.5%	14.1%	0.0%	0.0%	37.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.0%	10.5%	0.0%	32.5%	100.0%	

AM PEAK HOUR	I-5 SB Ramps Southbound					Seamas Avenue Westbound					I-5 SB Ramps Northbound					Seamas Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	56	0	6	0	62	41	26	0	0	67	0	0	0	0	0	0	87	13	0	100	229
7:45	55	0	8	0	63	66	36	0	0	102	0	0	0	0	0	0	111	16	0	127	292
8:00	30	0	15	0	45	87	48	0	0	135	0	0	0	0	0	0	94	18	0	112	292
8:15	37	1	10	0	48	52	34	0	0	86	0	0	0	0	0	0	79	17	0	96	230
Total Volume	178	1	39	0	218	246	144	0	0	390	0	0	0	0	0	0	371	64	0	435	1043
% App Total	81.7%	0.5%	17.9%	0.0%		63.1%	36.9%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	85.3%	14.7%	0.0%		
PHF	.795	.250	.650	.000	.865	.707	.750	.000	.000	.722	.000	.000	.000	.000	.000	.000	.836	.889	.000	.856	.893

PM PEAK HOUR	I-5 SB Ramps Southbound					Seamas Avenue Westbound					I-5 SB Ramps Northbound					Seamas Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	52	2	25	0	79	76	43	0	0	119	0	0	0	0	0	0	25	38	0	63	261
17:15	77	1	22	0	100	82	61	0	0	143	0	0	0	0	0	0	29	45	0	74	317
17:30	57	0	25	0	82	80	48	0	0	128	0	0	0	0	0	0	38	50	0	88	298
17:45	65	0	23	0	88	80	52	0	0	132	0	0	0	0	0	0	34	46	0	80	300
Total Volume	251	3	95	0	349	318	204	0	0	522	0	0	0	0	0	0	126	179	0	305	1176
% App Total	71.9%	0.9%	27.2%	0.0%		60.9%	39.1%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	41.3%	58.7%	0.0%		
PHF	.815	.375	.950	.000	.873	.970	.836	.000	.000	.913	.000	.000	.000	.000	.000	.000	.829	.895	.000	.866	.927

Land Park Commercial

Trip Generation and Distribution Memorandum

DKS Associates
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO:	Aelita Milatzo, Samar Hajeer	
FROM:	John Long, Vic Maslanka	
DATE:	6 December 2015	
SUBJECT:	Land Park Commercial Center - Trip Generation and Trip Distribution Estimates	P 15213-000

This memorandum summarizes the estimation of trip generation and trip distribution for the proposed Land Park Commercial Center to be located on the west side of Freeport Boulevard north of Wentworth Avenue in the City of Sacramento.

Project Description

The project is proposed to be constructed on the currently vacant site of the former Capital Nursery facility. A retail shopping center is proposed. The shopping center would include a Raley's Supermarket. An existing Raley's supermarket is currently located immediately south of the project site across Wentworth Avenue.

Two development / circulation schemes are presently proposed. The schemes are identical, other than minor building differences and a connection to an adjacent Bank of America banking facility:

- Scheme A – 55,000 square foot grocery store and 53,980 square feet of retail space
- Scheme B – 55,000 square foot grocery store and 53,165 square feet of retail space

The amount of development shown above is exclusive of the existing Bank of America facility.

Trip Generation of Existing Raley's Supermarket

Trip generation studies were undertaken at the existing Raley's Supermarket on Tuesday, November 10, 2015. Counts were undertaken from 7:00 to 9:00 a.m. and from 4:00 to 6:00 p.m. (in 15-minute intervals), to correspond to the typical peak periods of commuter travel. The following data was collected:

- Motorized vehicle counts – movements at each driveway by entry / exit and by turning movement. These counts also categorized heavy vehicles (any vehicle with 6 or more wheels).

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Suite 340
Sacramento, CA 95826-3225

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916 368-1020 fax
www.dksassociates.com

- Bicycle counts – entering and exiting bicycles
- Pedestrian counts – entering and exiting pedestrians
- Transit access counts – two Regional Transit bus stops are located along Freeport Boulevard (one on each side) adjacent to the existing Raley's site. Pedestrian trips entering and exiting the Raley's site from the bus stops were recorded.
- Average vehicle occupancy – At two of the driveways, vehicle occupancy (number of persons per vehicle) was recorded to provide a representative sample.

Table 1 summarizes the counts for the two-hour a.m. and p.m. peak commuter periods. Table 2 presents the percentage of person trips by travel mode. During the a.m. peak period, about 84 percent of the person trips are made by motorized vehicle. During the p.m. peak period, about 92 percent of the person trips are made by motorized vehicle.

Table 1
Recorded Peak Period Data
Existing Raley's Supermarket

Mode	A.M. Peak (7:00 to 9:00 a.m.)			P.M. Peak (4:00 to 6:00 p.m.)		
	Entering	Exiting	Total	Entering	Exiting	Total
Motorized Vehicle Trips (vehicles)	268	236	504	652	691	1,343
Heavy Vehicle Trips (vehicles, included above)	9	9	18	0	1	1
Percent Heavy Vehicle Trips	3.4%	3.8%	3.6%	0.0%	0.1%	0.1%
Average Auto Occupancy (persons per vehicle)	1.19	1.09	1.14	1.28	1.28	1.28
Person trips by motorized vehicles	319	258	577	837	888	1,724
Pedestrian Trips	46	50	96	65	73	138
Transit Trips	1	0	1	3	5	8
Bicycle Trips	6	5	11	8	3	11
Total Person Trips	372	313	685	913	969	1,881

Source: DKS Associates, 2015.

For motorized vehicle trips, the peak hour of trip generation occurred from 8:00 to 9:00 a.m. during the morning peak, and from 5:00 to 6:00 p.m. during the afternoon / evening peak. Table 3 presents the vehicular peak hour trip generation. Table 3 also presents the vehicular trip generation estimates from the Institute of Transportation Engineers' Trip Generation, Ninth Edition, for both

a supermarket and a shopping center. The existing Raley's Supermarket size is 60,989 square feet. The trip generation of the existing facility is higher than the estimates based upon the ITE data.

Table 2
Percentage of Person Trips by Mode
Existing Raley's Supermarket

Mode	A.M. Peak (7:00 to 9:00 a.m.)			P.M. Peak (4:00 to 6:00 p.m.)		
	Entering	Exiting	Total	Entering	Exiting	Total
Person Trips by Motorized Vehicle	85.8%	82.4%	84.2%	91.7%	91.6%	91.7%
Pedestrian Trips	12.4%	16.0%	14.0%	7.1%	7.5%	7.3%
Transit Trips	0.3%	0.0%	0.1%	0.3%	0.5%	0.4%
Bicycle Trips	1.6%	1.6%	1.6%	0.9%	0.3%	0.6%

Source: DKS Associates, 2015.

Table 3
Vehicular Trip Generation
Existing Raley's Supermarket

Source	Vehicle Trips						
	Daily	A.M. Peak Hour (8:00 to 9:00 a.m.)			P.M. Peak Hour (5:00 to 6:00 p.m.)		
		Entering	Exiting	Total	Entering	Exiting	Total
Counts	-	149	132	281	383	363	701
ITE Trip Generation, Land Use Code 820 (Shopping Center), 60,989 square feet	2,619	37	22	59	108	118	226
ITE Trip Generation, Land Use Code 850 (Supermarket), 60,989 square feet	6,236	128	79	207	295	283	578

Source: DKS Associates, 2015, and ITE *Trip Generation, Ninth Edition*, 2012.

Vehicular Trip Generation of Proposed Development

Vehicular trip generation of the proposed retail development is based upon the following factors:

- Vehicular trip generation collected at the existing Raley's Supermarket
- Person trip generation / mode choice information collected at the existing Raley's Supermarket
- ITE *Trip Generation, Ninth Edition*
- ITE *Trip Generation Handbook, Third Edition.*

The following methodology was utilized:

1. Because the trip generation at the existing Raley's Supermarket is higher than the ITE data, the local data was used for the first 55,000 square feet of development. Although the proposed supermarket is somewhat smaller than the existing supermarket (55,000 square feet versus 60,989 square feet), no reduction for the reduced size was taken.

2. For the daily trip generation of the supermarket, the ratio of daily trips to peak hour trips from the ITE data was applied to the existing counts. The number of daily trips is 7.94 times the sum of the a.m. and p.m. peak commuter hour trips.

3. For the remaining retail development, the estimation began with ITE estimates. Because the rate of trips per square foot decreases as a shopping center increases in size, shopping center trip generation was calculated for 55,000 square feet and full development (108,980 square feet [Scheme A] or 108,165 square feet [Scheme B]). The difference is the ITE estimate for the remaining retail development (53,980 [Scheme A] or 53,165 [Scheme B] square feet).

4. The vehicular trip generation for the non-supermarket retail development was adjusted to reflect higher non-motorized vehicular mode share at the existing Raley's Supermarket than reflected in typical ITE data. It was assumed that the ITE data typically reflects about 95 percent person trips by motorized-vehicle mode.

5. The number of pass-by trips have also been estimated. Pass-by trips are defined as those trips already on the roadway network (passing by the site) which access the project site. These trips are an intermediate destination on a linked trip. For example, a pass-by trip could be home to grocery store to work, or work to retail use to home. While pass-by trips are new to the project site, and are included in the number of external trips, they are not new to the adjacent roadway network. ITE *Trip Generation Handbook, Third Edition,* provides pass-by trip data for various uses. For land use 820 (shopping center), the average pass-by trip percentage is 34 percent for the p.m. peak hour. For land use 850

(supermarket), the average pass-by trip percentage is 36 percent for the p.m. peak hour. These values were applied to the corresponding project components for all time periods.

6. The resulting trip generation estimates are summarized in Tables 4 and 5 for Schemes A and B, respectively. The project is estimated to generate over 6,500 daily vehicle trips, over 200 a.m. peak hour vehicle trips, and almost 600 p.m. peak hour vehicle trips.

Table 4
Vehicular Trip Generation
Proposed Retail Development – Scheme A

Source	Vehicle Trips						
	Daily	A.M. Peak Hour (8:00 to 9:00 a.m.)			P.M. Peak Hour (5:00 to 6:00 p.m.)		
		Entering	Exiting	Total	Entering	Exiting	Total
Existing Raley's Supermarket	7,801	149	132	281	383	363	701
ITE Trip Generation, Land Use Code 820 (Shopping Center), 55,000 square feet	4,604	67	41	108	193	209	401
ITE Trip Generation, Land Use Code 820 (Shopping Center), 108,980 square feet	7,181	102	62	164	305	330	635
Difference (Retail)	2,577	35	21	56	112	121	233
Adjustment for Non-Motorized Vehicle Modes	-191	-4	-2	-6	-4	-4	-8
Net Retail Development (53,980 square feet)	2,386	31	19	50	108	117	225
Pass-By Trips (Supermarket)	-2,808	-54	-48	-101	-122	-131	-252
Pass-By Trips (Retail)	-811	-10	-6	-17	-37	-40	-77
Total Pass-By Trips	-3,619	-64	-54	-118	-159	-171	-329
Total	6,568	116	97	213	287	309	597

Source: DKS Associates, 2015, ITE *Trip Generation, Ninth Edition*, 2012, and ITE *Trip Generation Handbook, Third Edition*, 2014.

Table 5
Vehicular Trip Generation
Proposed Retail Development – Scheme B

Source	Vehicle Trips						
	Daily	A.M. Peak Hour (8:00 to 9:00 a.m.)			P.M. Peak Hour (5:00 to 6:00 p.m.)		
		Entering	Exiting	Total	Entering	Exiting	Total
Existing Raley's Supermarket	7,801	149	132	281	383	363	701
ITE Trip Generation, Land Use Code 820 (Shopping Center), 55,000 square feet	4,604	67	41	108	193	209	401
ITE Trip Generation, Land Use Code 820 (Shopping Center), 108,165 square feet	7,181	102	62	164	305	330	635
Difference (Retail)	2,542	34	21	55	110	120	230
Adjustment for Non-Motorized Vehicle Modes	-189	-4	-2	-6	-4	-4	-8
Net Retail Development (53,165 square feet)	2,353	30	19	49	107	115	222
Pass-By Trips (Supermarket)	-2,808	-54	-48	-101	-122	-131	-252
Pass-By Trips (Retail)	-800	-10	-6	-17	-36	-39	-75
Total Pass-By Trips	-3,608	-64	-54	-118	-158	-170	-327
Total	6,546	115	97	212	287	308	596

Source: DKS Associates, 2015, ITE *Trip Generation, Ninth Edition*, 2012, and ITE *Trip Generation Handbook, Third Edition*, 2014.

Trip Distribution

Peak hour vehicular trip distribution is based on the counts recorded at the existing Raley's Supermarket, local characteristics of the City street system, and data from SACOG's regional travel models. Distribution is illustrated in Figures 1 through 4.

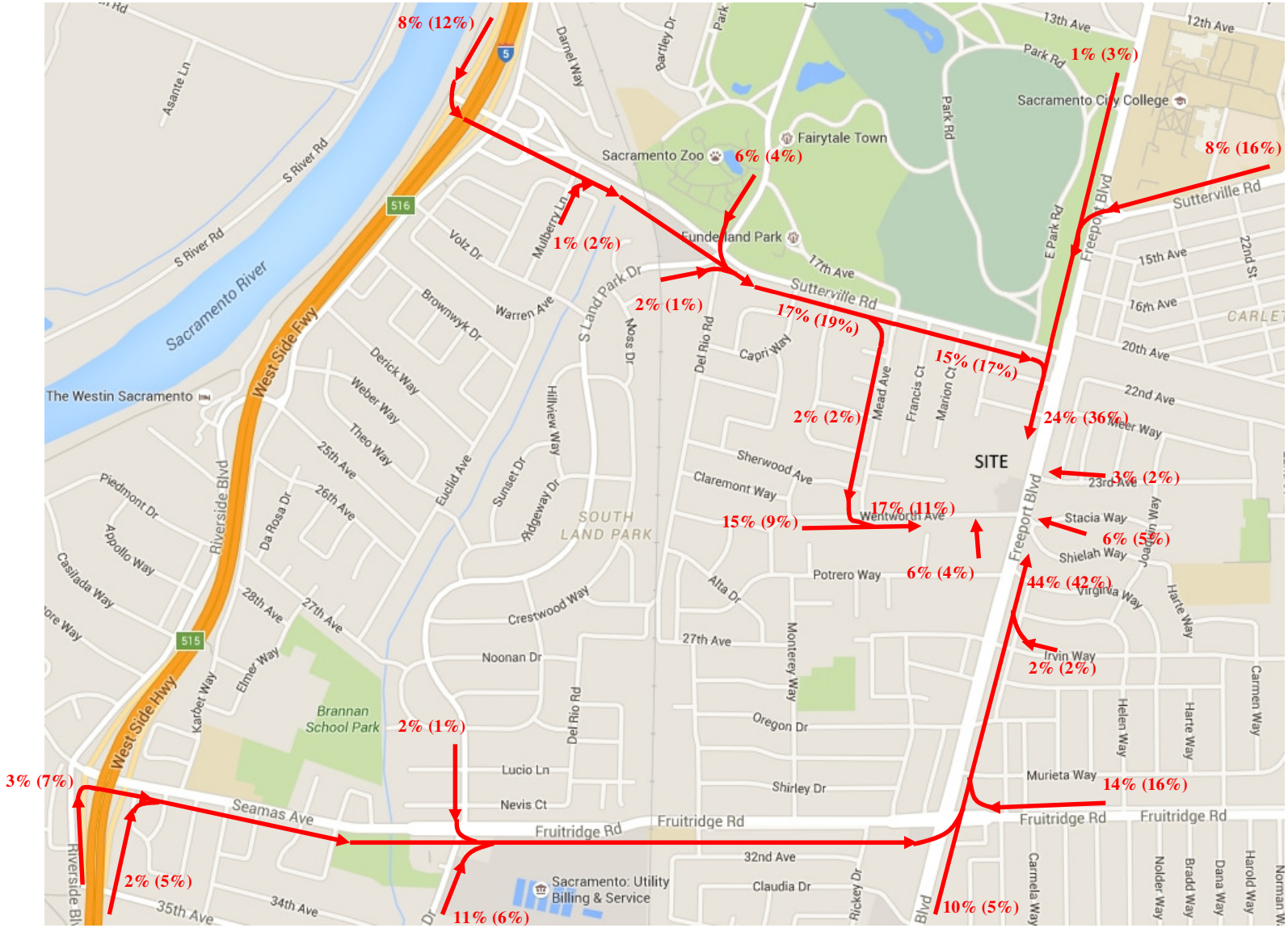


Figure 1
Existing Plus Project Entering Trip Distribution **AM Peak Hour (PM Peak Hour)**

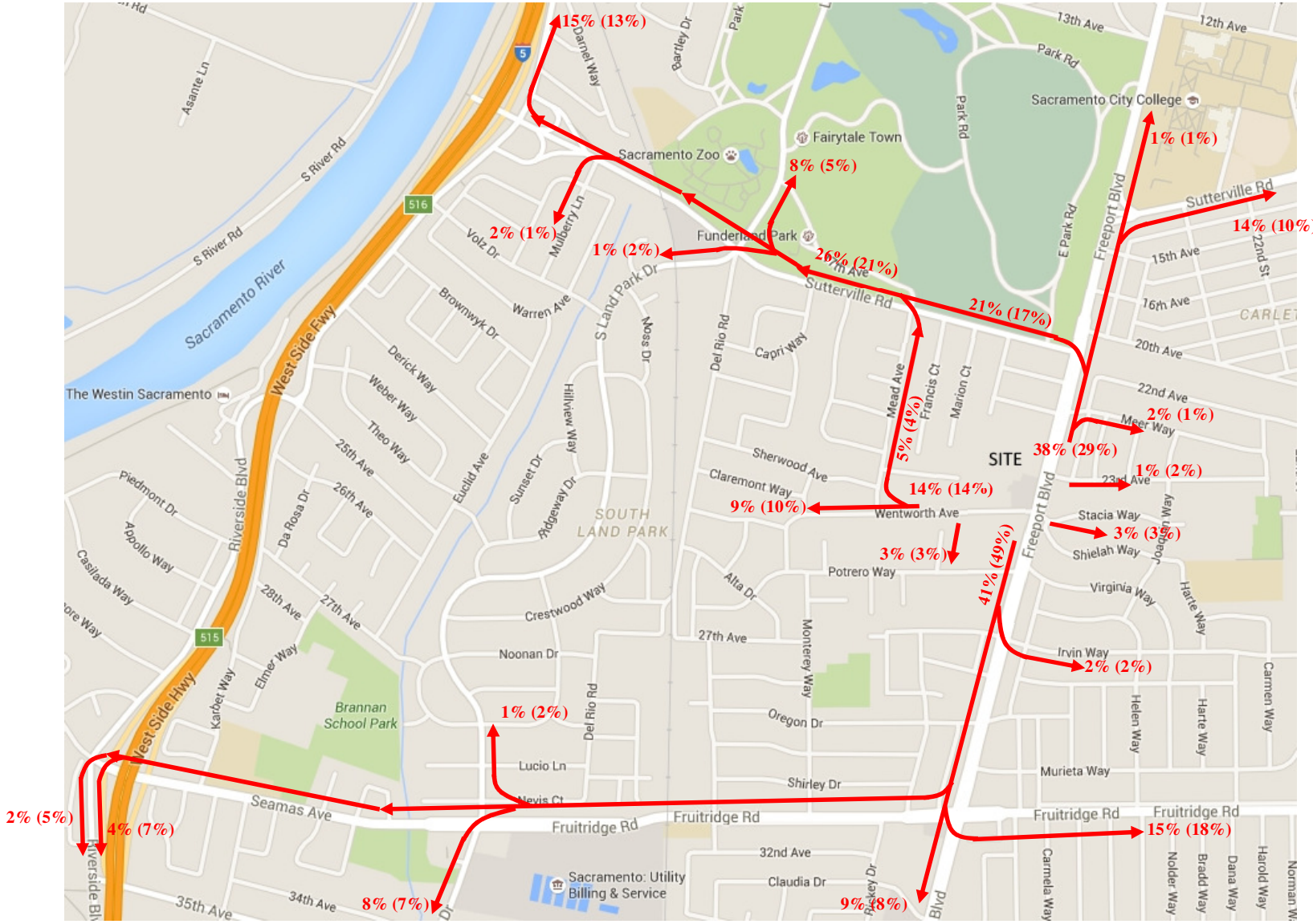


Figure 2
Existing Plus Project Exiting Trip Distribution **AM Peak Hour (PM Peak Hour)**

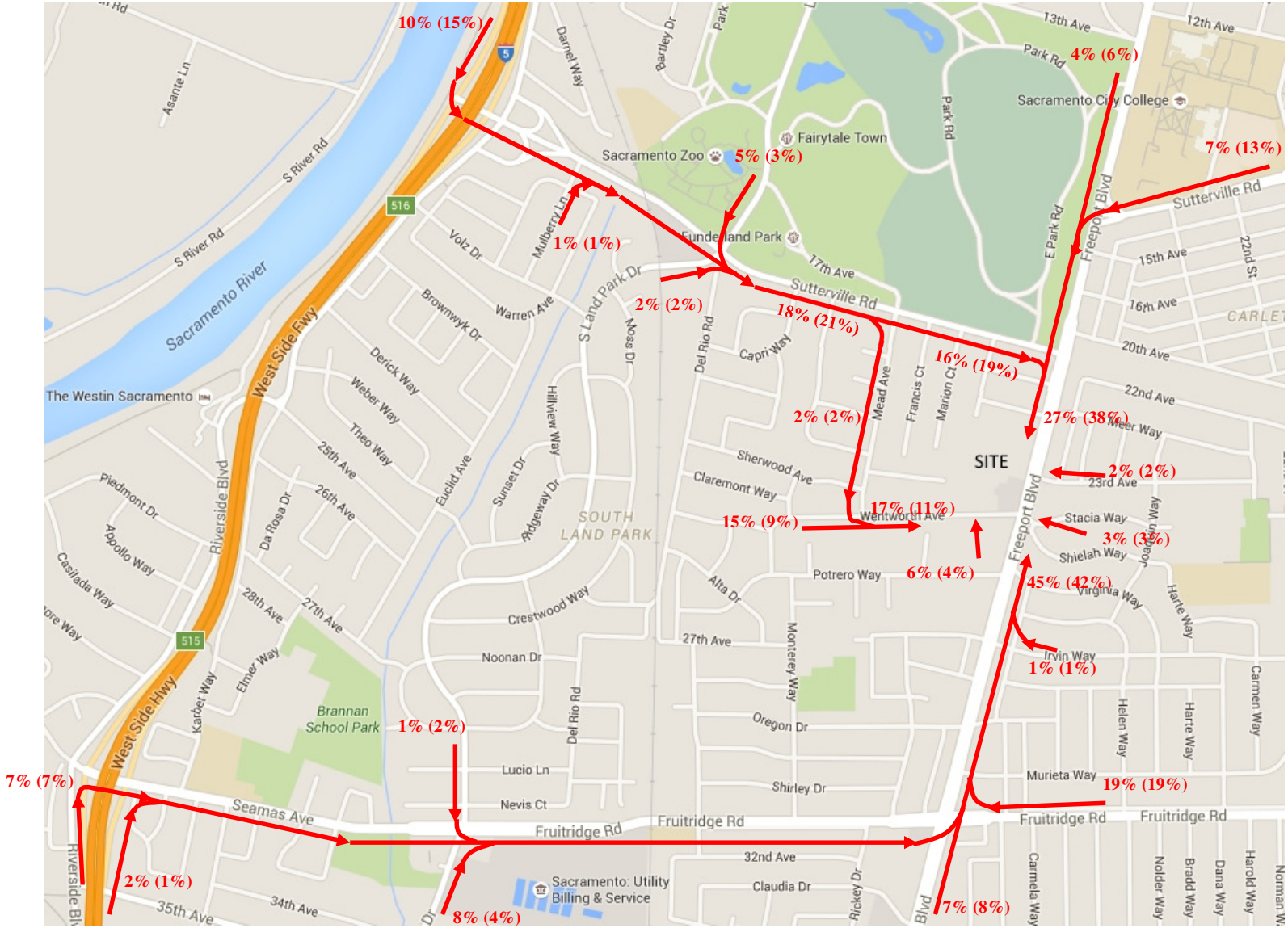


Figure 3
Cumulative With Project Entering Trip Distribution **AM Peak Hour (PM Peak Hour)**

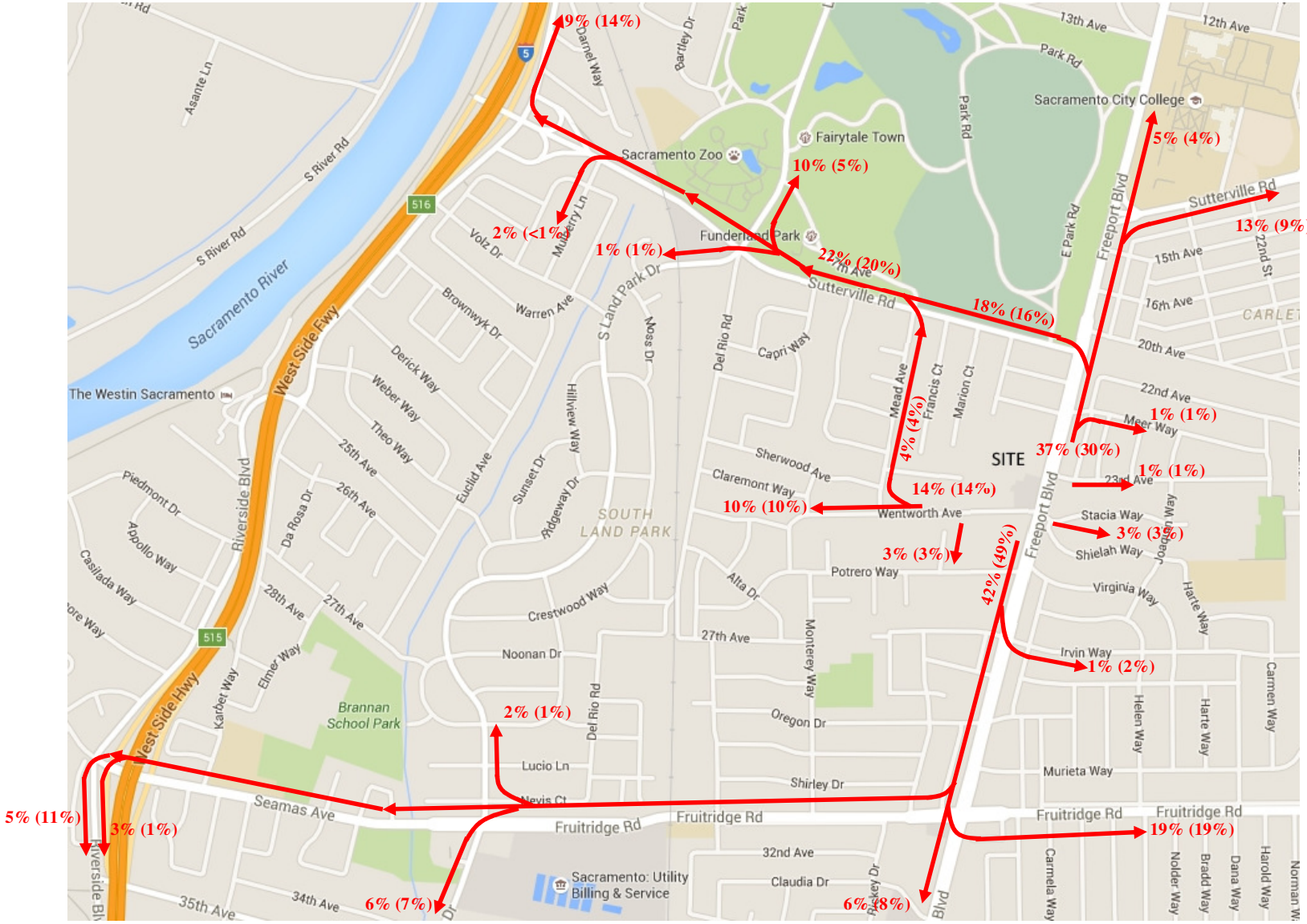


Figure 4
Cumulative With Project Exiting Trip Distribution **AM Peak Hour (PM Peak Hour)**

Freeway System Volume Estimates

Based upon the trip generation and trip distribution estimates described above, Tables 6 and 7 summarize the estimated project traffic on the I-5 freeway system for Schemes A and B, respectively.

Table 6
Freeway System Volume Estimates – Scheme A

Scenario	I-5 Mainline Location	Vehicle Trips						
		Daily	A.M. Peak Hour (8:00 to 9:00 a.m.)			P.M. Peak Hour (5:00 to 6:00 p.m.)		
			Northbound	Southbound	Total	Northbound	Southbound	Total
Existing Plus Project	North of Sutterville Road	788	15	9	24	40	34	75
	South of Seamas Avenue	328	2	4	6	14	22	36
	Total	1,117	-	-	30	-	-	111
Cumulative With Project	North of Sutterville Road	788	9	12	21	43	43	86
	South of Seamas Avenue	131	2	3	5	3	3	6
	Total	919	-	-	26	-	-	92

Source: DKS Associates, 2015.

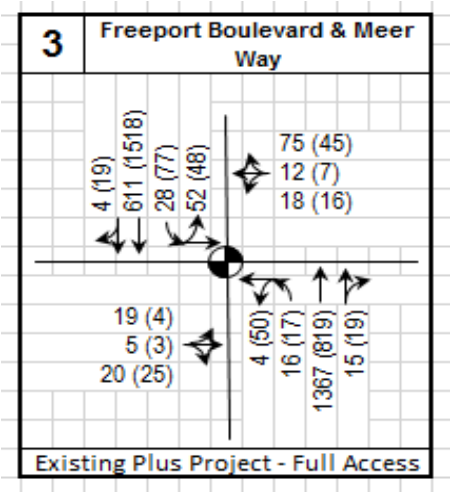
Table 7
Freeway System Volume Estimates – Scheme B

Scenario	I-5 Mainline Location	Vehicle Trips						
		Daily	A.M. Peak Hour (8:00 to 9:00 a.m.)			P.M. Peak Hour (5:00 to 6:00 p.m.)		
			Northbound	Southbound	Total	Northbound	Southbound	Total
Existing Plus Project	North of Sutterville Road	786	14	9	24	40	34	74
	South of Seamas Avenue	327	2	4	6	14	22	36
	Total	1,113	-	-	30	-	-	110
Cumulative With Project	North of Sutterville Road	786	9	12	21	43	43	86
	South of Seamas Avenue	131	2	3	5	3	3	6
	Total	917	-	-	26	-	-	92

Source: DKS Associates, 2015.

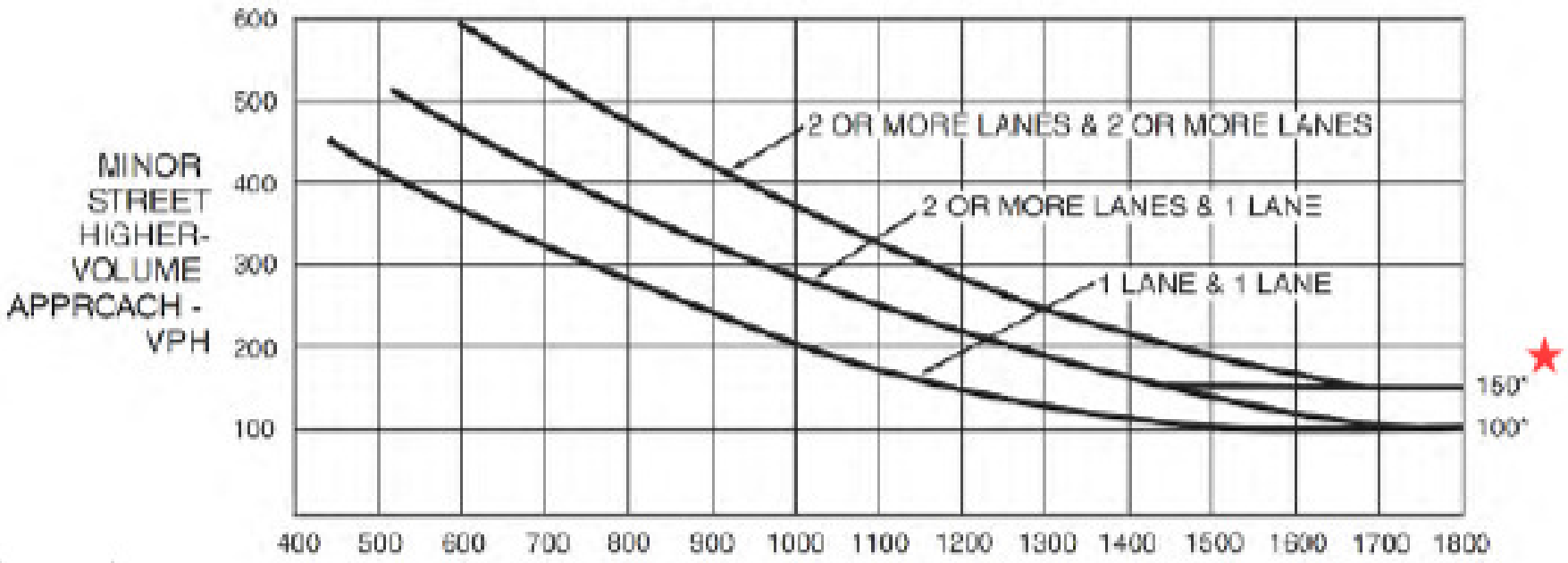
Land Park Commercial

Traffic Signal Warrant – Freeport Boulevard and Meer Way



Approach Volumes By Direction	AM	PM
Northbound	1,402	905
Southbound	695	1,662
Eastbound	44	32
Westbound	102	68
Northbound Left Turn	20	51
Southbound Left Turn	80	125
Highest Minor Street Volume	102	68
Major Street Volume	2,097	2,567
Highest Minor Street Volume Plus Highest Left Turn Volume	182	193
Major Street Volume Minus Highest Left Turn Volume	2,017	2,442

Figure 4C-3. Warrant 3, Peak Hour



★ AM and PM Peak Hour With Major Street Left Turn

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Land Park Commercial

Intersection Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	323	677	956	742	482	413
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	323	0	956	0	482	413
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	657	302	1313	587	577	2587
Arrive On Green	0.19	0.00	0.25	0.00	0.32	0.73
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	323	0	956	0	482	413
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	8.4	0.0	24.8	0.0	25.2	3.6
Cycle Q Clear(g_c), s	8.4	0.0	24.8	0.0	25.2	3.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	657	302	1313	587	577	2587
V/C Ratio(X)	0.49	0.00	0.73	0.00	0.84	0.16
Avail Cap(c_a), veh/h	657	302	1313	587	577	2587
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	0.0	32.9	0.0	31.3	4.1
Incr Delay (d2), s/veh	2.6	0.0	3.6	0.0	13.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	12.8	0.0	14.5	1.8
LnGrp Delay(d),s/veh	38.7	0.0	36.5	0.0	44.7	4.2
LnGrp LOS	D		D		D	A
Approach Vol, veh/h	323		956			895
Approach Delay, s/veh	38.7		36.5			26.0
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		23.0		77.0			36.0	41.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		19.1		73.1			32.5	37.1
Max Q Clear Time (g_c+I1), s		10.4		5.6			27.2	26.8
Green Ext Time (p_c), s		0.8		14.4			0.8	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	491	0	115	0	2	1	40	231	1176	0	0	524
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.94			0.95			1.00	1.00			1.00
Flt Protected	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (prot)	1681	1617			1779			1770	3539			3539
Flt Permitted	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (perm)	1681	1617			1779			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	491	0	115	0	2	1	40	231	1176	0	0	524
RTOR Reduction (vph)	0	80	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	309	217	0	0	2	0	0	271	1176	0	0	524
Turn Type	Split	NA			NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	25.1	25.1			0.9			14.0	33.1			15.5
Effective Green, g (s)	25.1	25.1			0.9			14.0	33.1			15.5
Actuated g/C Ratio	0.36	0.36			0.01			0.20	0.47			0.22
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			3.0
Lane Grp Cap (vph)	602	579			22			354	1673			783
v/s Ratio Prot	c0.18	0.13			c0.00			c0.15	c0.33			0.15
v/s Ratio Perm												
v/c Ratio	0.51	0.37			0.09			0.77	0.70			0.67
Uniform Delay, d1	17.6	16.6			34.1			26.4	14.6			24.9
Progression Factor	1.00	1.00			1.00			1.00	1.04			1.00
Incremental Delay, d2	3.1	1.8			1.8			9.5	1.4			2.2
Delay (s)	20.8	18.5			36.0			36.1	16.5			27.1
Level of Service	C	B			D			D	B			C
Approach Delay (s)		19.6			36.0				20.2			25.6
Approach LOS		B			D				C			C

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	210
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	210
RTOR Reduction (vph)	164
Lane Group Flow (vph)	47
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	15.5
Effective Green, g (s)	15.5
Actuated g/C Ratio	0.22
Clearance Time (s)	3.9
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	350
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.13
Uniform Delay, d1	21.9
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	22.0
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	68	4	16	1332	13	52	28	583	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	68	4	16	1332	13	52	28	583	4

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1451	2130	294	1831	2126	673	447	587	0	0	1050	1345	0	0
Stage 1	745	745	-	1379	1379	-	-	-	-	-	-	-	-	-
Stage 2	706	1385	-	452	747	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	92	49	702	47	49	398	748	984	-	-	308	508	-	-
Stage 1	372	419	-	152	210	-	-	-	-	-	-	-	-	-
Stage 2	393	209	-	557	418	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	76	49	702	46	49	398	920	920	-	-	309	309	-	-
Mov Cap-2 Maneuver	168	105	-	121	145	-	-	-	-	-	-	-	-	-
Stage 1	372	419	-	152	210	-	-	-	-	-	-	-	-	-
Stage 2	326	209	-	543	418	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	15.9	0.1	2.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	920	-	-	702	398	309	-	-
HCM Lane V/C Ratio	0.022	-	-	0.026	0.171	0.259	-	-
HCM Control Delay (s)	9	-	-	10.3	15.9	20.7	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	1	-	-

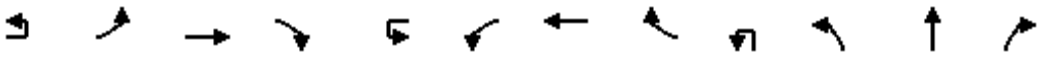
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	74	13	30	13	10	53	3	21	1211	17	10	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.91			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1770	1668			1673			1770	3532			1770
Flt Permitted	0.71	1.00			0.97			0.95	1.00			0.95
Satd. Flow (perm)	1318	1668			1636			1770	3532			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	13	30	13	10	53	3	21	1211	17	10	49
RTOR Reduction (vph)	0	18	0	0	32	0	0	0	1	0	0	0
Lane Group Flow (vph)	74	25	0	0	44	0	0	24	1227	0	0	59
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			3.5	24.1			3.5
Effective Green, g (s)	26.2	26.2			26.2			3.5	24.1			3.5
Actuated g/C Ratio	0.40	0.40			0.40			0.05	0.37			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	531	672			659			95	1309			95
v/s Ratio Prot		0.02						0.01	c0.35			c0.03
v/s Ratio Perm	c0.06				0.03							
v/c Ratio	0.14	0.04			0.07			0.25	0.94			0.62
Uniform Delay, d1	12.3	11.8			11.9			29.5	19.7			30.1
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	0.5	0.1			0.2			6.3	13.8			26.8
Delay (s)	12.8	11.9			12.1			35.8	33.5			56.9
Level of Service	B	B			B			D	C			E
Approach Delay (s)		12.5			12.1				33.5			
Approach LOS		B			B				C			

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

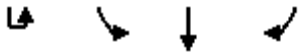
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	548	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3513	
Flt Permitted	1.00	
Satd. Flow (perm)	3513	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	548	29
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	571	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	24.1	
Effective Green, g (s)	24.1	
Actuated g/C Ratio	0.37	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1302	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.44	
Uniform Delay, d1	15.4	
Progression Factor	1.00	
Incremental Delay, d2	1.1	
Delay (s)	16.4	
Level of Service	B	
Approach Delay (s)	20.2	
Approach LOS	C	

Intersection Summary



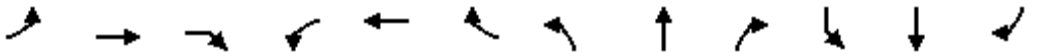
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	1	198	525	61	3	347	529	196	10	81	844	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	198	525	61	3	347	529	196	10	81	844	562
RTOR Reduction (vph)	0	0	0	43	0	0	0	141	0	0	0	215
Lane Group Flow (vph)	0	199	525	18	0	350	529	55	0	91	844	347
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		11.0	27.2	27.2		9.0	25.2	25.2		7.6	27.3	27.3
Effective Green, g (s)		11.0	27.2	27.2		9.0	25.2	25.2		7.6	27.3	27.3
Actuated g/C Ratio		0.12	0.30	0.30		0.10	0.28	0.28		0.08	0.30	0.30
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		216	1071	479		344	993	444		149	1075	481
v/s Ratio Prot		c0.11	0.15			0.10	c0.15			c0.05	c0.24	
v/s Ratio Perm				0.01				0.03				0.22
v/c Ratio		0.92	0.49	0.04		1.02	0.53	0.12		0.61	0.79	0.72
Uniform Delay, d1		39.0	25.6	22.1		40.4	27.3	24.1		39.7	28.6	27.9
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		40.0	1.6	0.2		53.0	2.0	0.6		7.2	3.8	5.3
Delay (s)		78.9	27.2	22.2		93.4	29.4	24.6		46.9	32.4	33.1
Level of Service		E	C	C		F	C	C		D	C	C
Approach Delay (s)			39.9				49.4				33.6	
Approach LOS			D				D				C	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	19.5
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	4	159	317	91
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	159	317	91
RTOR Reduction (vph)	0	0	0	64
Lane Group Flow (vph)	0	163	317	27
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		6.8	26.6	26.6
Effective Green, g (s)		6.8	26.6	26.6
Actuated g/C Ratio		0.08	0.30	0.30
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		259	1048	468
v/s Ratio Prot		0.05	0.09	
v/s Ratio Perm				0.02
v/c Ratio		0.63	0.30	0.06
Uniform Delay, d1		40.3	24.4	22.6
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		4.7	0.2	0.1
Delay (s)		45.0	24.6	22.7
Level of Service		D	C	C
Approach Delay (s)			30.1	
Approach LOS			C	

Intersection Summary



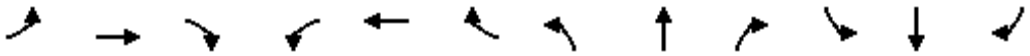
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	415	42	39	360	28	31	303	53	83	76	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.99		1.00	0.99			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1770	3490		1770	1843			3453			3271	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (perm)	1770	3490		1770	1843			3453			3271	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	77	415	42	39	360	28	31	303	53	83	76	111
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	94	0
Lane Group Flow (vph)	77	457	0	39	386	0	0	387	0	0	176	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	8.5	28.7		13.0	33.7			21.3			19.1	
Effective Green, g (s)	8.5	28.7		13.0	33.7			21.3			19.1	
Actuated g/C Ratio	0.07	0.23		0.10	0.27			0.17			0.15	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	120	801		184	496			588			499	
v/s Ratio Prot	c0.04	0.13		0.02	c0.21			c0.11			c0.05	
v/s Ratio Perm												
v/c Ratio	0.64	0.57		0.21	0.78			0.66			0.35	
Uniform Delay, d1	56.8	42.7		51.3	42.2			48.4			47.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	23.5	2.9		2.6	11.4			5.7			2.0	
Delay (s)	80.2	45.6		53.9	53.6			54.1			49.4	
Level of Service	F	D		D	D			D			D	
Approach Delay (s)		50.6			53.6			54.1			49.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	95	90	11
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.93		
Flt Protected	0.98		
Satd. Flow (prot)	1692		
Flt Permitted	0.98		
Satd. Flow (perm)	1692		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	95	90	11
RTOR Reduction (vph)	171	0	0
Lane Group Flow (vph)	25	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.12		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	209		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.12		
Uniform Delay, d1	48.7		
Progression Factor	1.00		
Incremental Delay, d2	1.2		
Delay (s)	49.9		
Level of Service	D		
Approach Delay (s)	49.9		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	321	106	118	504	90	199	314	345	110	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.96		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3407		1770	3459			3288			3405	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3407		1770	3459			3288			3405	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	321	106	118	504	90	199	314	345	110	144	39
RTOR Reduction (vph)	0	42	0	0	19	0	0	155	0	0	16	0
Lane Group Flow (vph)	32	385	0	118	575	0	0	703	0	0	277	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.9	17.2		6.9	17.2			18.1			16.5	
Effective Green, g (s)	6.9	17.2		6.9	17.2			18.1			16.5	
Actuated g/C Ratio	0.09	0.23		0.09	0.23			0.24			0.22	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	162	781		162	793			793			749	
v/s Ratio Prot	0.02	c0.11		0.07	c0.17			c0.21			c0.08	
v/s Ratio Perm												
v/c Ratio	0.20	0.49		0.73	0.72			0.89			0.37	
Uniform Delay, d1	31.5	25.1		33.1	26.7			27.5			24.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.7	2.2		24.8	5.7			14.0			1.4	
Delay (s)	34.2	27.3		57.9	32.4			41.4			26.2	
Level of Service	C	C		E	C			D			C	
Approach Delay (s)		27.8			36.6			41.4			26.2	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	84	1	12	33	15	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	84	1	12	33	15	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	85	0	0	153	159	85	163	152	41
Stage 1	-	-	-	-	-	-	87	87	-	65	65	-
Stage 2	-	-	-	-	-	-	66	72	-	98	87	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1512	-	-	814	733	974	802	740	1030
Stage 1	-	-	-	-	-	-	921	823	-	946	841	-
Stage 2	-	-	-	-	-	-	945	835	-	908	823	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1512	-	-	807	726	974	778	733	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	807	726	-	778	733	-
Stage 1	-	-	-	-	-	-	920	822	-	945	834	-
Stage 2	-	-	-	-	-	-	936	828	-	886	822	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	8.9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	958	1559	-	-	1512	-	-	811
HCM Lane V/C Ratio	0.026	0.001	-	-	0.008	-	-	0.015
HCM Control Delay (s)	8.9	7.3	0	-	7.4	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	49	17	28	9	0	11	0	37	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	17	28	9	0	11	0	37	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	66	0	0	123	123	58	141	131	9
Stage 1	-	-	-	-	-	-	58	58	-	65	65	-
Stage 2	-	-	-	-	-	-	65	65	-	76	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1611	-	-	1536	-	-	852	767	1008	829	760	1073
Stage 1	-	-	-	-	-	-	954	847	-	946	841	-
Stage 2	-	-	-	-	-	-	946	841	-	933	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1611	-	-	1536	-	-	840	753	1008	788	746	1073
Mov Cap-2 Maneuver	-	-	-	-	-	-	840	753	-	788	746	-
Stage 1	-	-	-	-	-	-	954	847	-	946	826	-
Stage 2	-	-	-	-	-	-	929	826	-	899	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.6	8.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	964	1611	-	-	1536	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-	0.018	-	-	-
HCM Control Delay (s)	8.9	0	-	-	7.4	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	748	353	503	478	415	864
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	748	0	503	0	415	864
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1070	492	853	382	594	2162
Arrive On Green	0.31	0.00	0.48	0.00	0.34	0.61
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	748	0	503	0	415	864
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	19.1	0.0	10.3	0.0	20.3	12.6
Cycle Q Clear(g_c), s	19.1	0.0	10.3	0.0	20.3	12.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1070	492	853	382	594	2162
V/C Ratio(X)	0.70	0.00	0.59	0.00	0.70	0.40
Avail Cap(c_a), veh/h	1070	492	853	382	594	2162
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	22.3	0.0	28.9	10.0
Incr Delay (d2), s/veh	3.8	0.0	3.0	0.0	6.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	5.2	0.0	11.0	6.3
LnGrp Delay(d),s/veh	34.1	0.0	25.3	0.0	35.5	10.6
LnGrp LOS	C		C		D	B
Approach Vol, veh/h	748		503			1279
Approach Delay, s/veh	34.1		25.3			18.7
Approach LOS	C		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.0		65.0			37.0	28.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		31.1		61.1			33.5	24.1
Max Q Clear Time (g_c+I1), s		21.1		14.6			22.3	12.3
Green Ext Time (p_c), s		2.2		13.4			1.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	348	0	266	10	7	12	28	118	660	0	0	1245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.87			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			1.00
Satd. Flow (prot)	1681	1526			1729			1770	3539			3539
Flt Permitted	0.95	0.99			0.60			0.95	1.00			1.00
Satd. Flow (perm)	1681	1526			1051			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	348	0	266	10	7	12	28	118	660	0	0	1245
RTOR Reduction (vph)	0	199	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	313	102	0	0	18	0	0	146	660	0	0	1245
Turn Type	Split	NA		Perm	NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	17.5	17.5			4.5			7.4	37.1			26.1
Effective Green, g (s)	17.5	17.5			4.5			7.4	37.1			26.1
Actuated g/C Ratio	0.25	0.25			0.06			0.11	0.53			0.37
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	420	381			67			187	1875			1319
v/s Ratio Prot	c0.19	0.07						c0.08	0.19			c0.35
v/s Ratio Perm					c0.02							
v/c Ratio	0.75	0.27			0.27			0.78	0.35			0.94
Uniform Delay, d1	24.2	21.1			31.2			30.5	9.5			21.2
Progression Factor	1.00	1.00			1.00			1.00	1.07			1.00
Incremental Delay, d2	11.4	1.7			9.4			26.9	0.5			14.6
Delay (s)	35.6	22.8			40.6			57.4	10.7			35.8
Level of Service	D	C			D			E	B			D
Approach Delay (s)		29.3			40.6				19.2			31.2
Approach LOS		C			D				B			C

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	420
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	420
RTOR Reduction (vph)	211
Lane Group Flow (vph)	209
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	26.1
Effective Green, g (s)	26.1
Actuated g/C Ratio	0.37
Clearance Time (s)	3.9
Lane Grp Cap (vph)	590
v/s Ratio Prot	
v/s Ratio Perm	0.13
v/c Ratio	0.35
Uniform Delay, d1	15.9
Progression Factor	1.00
Incremental Delay, d2	1.7
Delay (s)	17.5
Level of Service	B
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	23	0	0	41	50	17	733	16	48	77	1414	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	41	50	17	733	16	48	77	1414	19

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2175	2557	717	1832	2558	375	1069	1433	0	0	588	749	0	0
Stage 1	1674	1674	-	875	875	-	-	-	-	-	-	-	-	-
Stage 2	501	883	-	957	1683	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	26	26	372	47	26	623	300	470	-	-	609	856	-	-
Stage 1	99	151	-	310	365	-	-	-	-	-	-	-	-	-
Stage 2	521	362	-	277	149	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	24	26	372	44	26	623	313	313	-	-	717	717	-	-
Mov Cap-2 Maneuver	78	95	-	127	68	-	-	-	-	-	-	-	-	-
Stage 1	99	151	-	310	365	-	-	-	-	-	-	-	-	-
Stage 2	487	362	-	260	149	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	11.2	1.6	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	372	623	717	-	-
HCM Lane V/C Ratio	0.214	-	-	0.062	0.066	0.174	-	-
HCM Control Delay (s)	19.6	-	-	15.3	11.2	11.1	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.2	0.2	0.6	-	-

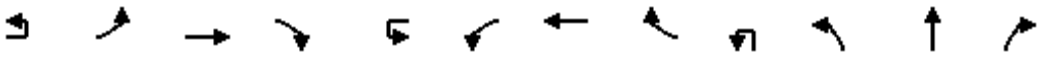
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	137	15	62	32	17	38	7	37	592	12	23	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.88			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1770	1638			1721			1770	3529			1770
Flt Permitted	0.75	1.00			0.90			0.95	1.00			0.95
Satd. Flow (perm)	1394	1638			1586			1770	3529			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	15	62	32	17	38	7	37	592	12	23	44
RTOR Reduction (vph)	0	39	0	0	24	0	0	0	2	0	0	0
Lane Group Flow (vph)	137	38	0	0	63	0	0	44	602	0	0	67
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	25.6	25.6			25.6			3.5	26.7			6.5
Effective Green, g (s)	25.6	25.6			25.6			3.5	26.7			6.5
Actuated g/C Ratio	0.37	0.37			0.37			0.05	0.38			0.09
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	509	599			580			88	1346			164
v/s Ratio Prot		0.02						0.02	0.17			c0.04
v/s Ratio Perm	c0.10				0.04							
v/c Ratio	0.27	0.06			0.11			0.50	0.45			0.41
Uniform Delay, d1	15.6	14.4			14.7			32.4	16.1			29.9
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	1.3	0.2			0.4			18.9	1.1			7.4
Delay (s)	16.9	14.6			15.0			51.3	17.2			37.3
Level of Service	B	B			B			D	B			D
Approach Delay (s)		16.1			15.0				19.5			
Approach LOS		B			B				B			

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1345	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3501	
Flt Permitted	1.00	
Satd. Flow (perm)	3501	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1345	105
RTOR Reduction (vph)	8	0
Lane Group Flow (vph)	1442	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	29.7	
Effective Green, g (s)	29.7	
Actuated g/C Ratio	0.42	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1485	
v/s Ratio Prot	c0.41	
v/s Ratio Perm		
v/c Ratio	0.97	
Uniform Delay, d1	19.7	
Progression Factor	1.00	
Incremental Delay, d2	17.4	
Delay (s)	37.1	
Level of Service	D	
Approach Delay (s)	37.1	
Approach LOS	D	

Intersection Summary

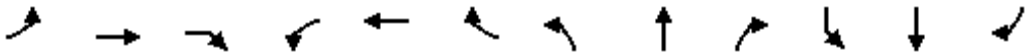


Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	9	157	418	72	8	449	564	182	34	78	449	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	157	418	72	8	449	564	182	34	78	449	316
RTOR Reduction (vph)	0	0	0	50	0	0	0	128	0	0	0	221
Lane Group Flow (vph)	0	166	418	22	0	457	564	54	0	112	449	95
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		10.6	27.2	27.2		10.0	26.6	26.6		7.9	26.7	26.7
Effective Green, g (s)		10.6	27.2	27.2		10.0	26.6	26.6		7.9	26.7	26.7
Actuated g/C Ratio		0.12	0.30	0.30		0.11	0.30	0.30		0.09	0.30	0.30
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		210	1079	482		384	1055	472		156	1059	473
v/s Ratio Prot		0.09	0.12			c0.13	c0.16			0.06	0.13	
v/s Ratio Perm				0.01				0.03				0.06
v/c Ratio		0.79	0.39	0.05		1.19	0.53	0.11		0.72	0.42	0.20
Uniform Delay, d1		38.2	24.4	21.9		39.6	26.1	22.7		39.6	25.1	23.3
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		18.1	1.1	0.2		108.7	1.9	0.5		14.6	0.3	0.2
Delay (s)		56.3	25.5	22.0		148.3	28.1	23.2		54.2	25.4	23.5
Level of Service		E	C	C		F	C	C		D	C	C
Approach Delay (s)			32.9				73.0				28.4	
Approach LOS			C				E				C	

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	21	234	858	229
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	234	858	229
RTOR Reduction (vph)	0	0	0	102
Lane Group Flow (vph)	0	255	858	127
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		5.8	24.7	24.7
Effective Green, g (s)		5.8	24.7	24.7
Actuated g/C Ratio		0.07	0.28	0.28
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		223	979	438
v/s Ratio Prot		c0.07	c0.24	
v/s Ratio Perm				0.08
v/c Ratio		1.14	0.88	0.29
Uniform Delay, d1		41.7	30.8	25.4
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		104.4	8.9	0.4
Delay (s)		146.1	39.7	25.7
Level of Service		F	D	C
Approach Delay (s)			57.5	
Approach LOS			E	

Intersection Summary



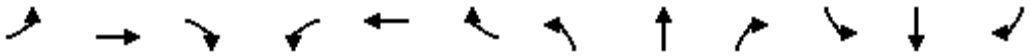
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	407	118	64	389	20	32	96	67	213	201	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3420		1770	1849			3329			3333	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3420		1770	1849			3329			3333	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	59	407	118	64	389	20	32	96	67	213	201	153
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	38	0
Lane Group Flow (vph)	59	525	0	64	407	0	0	195	0	0	529	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	3.5	18.7		5.0	20.7			14.3			19.1	
Effective Green, g (s)	3.5	18.7		5.0	20.7			14.3			19.1	
Actuated g/C Ratio	0.04	0.19		0.05	0.21			0.14			0.19	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	61	639		88	382			476			636	
v/s Ratio Prot	c0.03	0.15		0.04	c0.22			c0.06			c0.16	
v/s Ratio Perm												
v/c Ratio	0.97	0.82		0.73	1.07			0.41			0.83	
Uniform Delay, d1	48.2	39.0		46.8	39.6			39.0			38.9	
Progression Factor	1.00	1.00		0.82	0.71			1.00			1.00	
Incremental Delay, d2	106.2	11.4		35.4	60.9			2.6			12.1	
Delay (s)	154.4	50.4		74.0	89.0			41.6			51.0	
Level of Service	F	D		E	F			D			D	
Approach Delay (s)		60.9			87.0			41.6			51.0	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	57	59	18
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.92		
Flt Protected	0.98		
Satd. Flow (prot)	1682		
Flt Permitted	0.98		
Satd. Flow (perm)	1682		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	57	59	18
RTOR Reduction (vph)	113	0	0
Lane Group Flow (vph)	21	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.16		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	260		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.08		
Uniform Delay, d1	36.1		
Progression Factor	1.00		
Incremental Delay, d2	0.6		
Delay (s)	36.7		
Level of Service	D		
Approach Delay (s)	36.7		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	416	124	270	590	54	122	105	166	43	197	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1770	3417		1770	3495			3264			3427	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (perm)	1770	3417		1770	3495			3264			3427	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	416	124	270	590	54	122	105	166	43	197	47
RTOR Reduction (vph)	0	35	0	0	8	0	0	132	0	0	21	0
Lane Group Flow (vph)	37	505	0	270	636	0	0	261	0	0	266	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.9	16.8		13.9	23.8			16.5			16.5	
Effective Green, g (s)	6.9	16.8		13.9	23.8			16.5			16.5	
Actuated g/C Ratio	0.09	0.21		0.17	0.30			0.21			0.21	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	152	717		307	1039			673			706	
v/s Ratio Prot	0.02	c0.15		c0.15	0.18			c0.08			c0.08	
v/s Ratio Perm												
v/c Ratio	0.24	0.70		0.88	0.61			0.39			0.38	
Uniform Delay, d1	34.1	29.3		32.2	24.1			27.4			27.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.8	5.7		28.2	2.7			1.7			1.5	
Delay (s)	37.9	35.0		60.4	26.8			29.1			28.9	
Level of Service	D	D		E	C			C			C	
Approach Delay (s)		35.2			36.7			29.1			28.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	124	1	37	100	22	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	124	1	37	100	22	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	125	0	0	322	327	125	342	316	111
Stage 1	-	-	-	-	-	-	131	131	-	185	185	-
Stage 2	-	-	-	-	-	-	191	196	-	157	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1465	-	-	1462	-	-	631	591	926	612	600	942
Stage 1	-	-	-	-	-	-	873	788	-	817	747	-
Stage 2	-	-	-	-	-	-	811	739	-	845	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1462	-	-	608	574	926	564	583	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	608	574	-	564	583	-
Stage 1	-	-	-	-	-	-	871	786	-	815	727	-
Stage 2	-	-	-	-	-	-	777	719	-	795	786	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.8	9.7	11.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	837	1465	-	-	1462	-	-	590
HCM Lane V/C Ratio	0.078	0.002	-	-	0.025	-	-	0.085
HCM Control Delay (s)	9.7	7.5	0	-	7.5	0	-	11.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.3

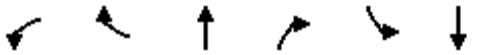
Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	57	22	72	45	0	14	0	71	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	57	22	72	45	0	14	0	71	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	45	0	0	79	0	0	257	257	68	293	268	45
Stage 1	-	-	-	-	-	-	68	68	-	189	189	-
Stage 2	-	-	-	-	-	-	189	189	-	104	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1563	-	-	1519	-	-	696	647	995	659	638	1025
Stage 1	-	-	-	-	-	-	942	838	-	813	744	-
Stage 2	-	-	-	-	-	-	813	744	-	902	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1563	-	-	1519	-	-	670	615	995	589	607	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	615	-	589	607	-
Stage 1	-	-	-	-	-	-	942	838	-	813	708	-
Stage 2	-	-	-	-	-	-	773	708	-	838	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.6	9.3	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	921	1563	-	-	1519	-	-	-
HCM Lane V/C Ratio	0.092	-	-	-	0.047	-	-	-
HCM Control Delay (s)	9.3	0	-	-	7.5	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	332	677	957	756	482	414
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	332	0	957	0	482	414
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	623	287	1348	603	577	2623
Arrive On Green	0.18	0.00	0.26	0.00	0.32	0.74
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	332	0	957	0	482	414
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	8.7	0.0	24.6	0.0	25.2	3.4
Cycle Q Clear(g_c), s	8.7	0.0	24.6	0.0	25.2	3.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	623	287	1348	603	577	2623
V/C Ratio(X)	0.53	0.00	0.71	0.00	0.84	0.16
Avail Cap(c_a), veh/h	623	287	1348	603	577	2623
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	32.2	0.0	31.3	3.8
Incr Delay (d2), s/veh	3.2	0.0	3.2	0.0	13.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	12.6	0.0	14.5	1.7
LnGrp Delay(d),s/veh	40.4	0.0	35.4	0.0	44.7	3.9
LnGrp LOS	D		D		D	A
Approach Vol, veh/h	332		957			896
Approach Delay, s/veh	40.4		35.4			25.9
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		22.0		78.0			36.0	42.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		18.1		74.1			32.5	38.1
Max Q Clear Time (g_c+I1), s		10.7		5.4			27.2	26.6
Green Ext Time (p_c), s		0.7		14.5			0.8	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	491	0	133	0	2	1	40	251	1191	0	0	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.93			0.95			1.00	1.00			1.00
Flt Protected	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (prot)	1681	1609			1779			1770	3539			3539
Flt Permitted	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (perm)	1681	1609			1779			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	491	0	133	0	2	1	40	251	1191	0	0	534
RTOR Reduction (vph)	0	91	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	319	214	0	0	2	0	0	291	1191	0	0	534
Turn Type	Split	NA			NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	19.1	19.1			4.5			15.4	35.5			16.5
Effective Green, g (s)	19.1	19.1			4.5			15.4	35.5			16.5
Actuated g/C Ratio	0.27	0.27			0.06			0.22	0.51			0.24
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	458	439			114			389	1794			834
v/s Ratio Prot	c0.19	0.13			c0.00			c0.16	c0.34			0.15
v/s Ratio Perm												
v/c Ratio	0.70	0.49			0.02			0.75	0.66			0.64
Uniform Delay, d1	22.8	21.3			30.7			25.5	12.8			24.1
Progression Factor	1.00	1.00			1.00			1.00	1.04			1.00
Incremental Delay, d2	8.5	3.8			0.3			12.4	2.0			3.8
Delay (s)	31.3	25.2			31.0			38.0	15.3			27.8
Level of Service	C	C			C			D	B			C
Approach Delay (s)		28.3			31.0				19.8			26.1
Approach LOS		C			C				B			C

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	210
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	210
RTOR Reduction (vph)	161
Lane Group Flow (vph)	50
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	16.5
Effective Green, g (s)	16.5
Actuated g/C Ratio	0.24
Clearance Time (s)	3.9
Lane Grp Cap (vph)	373
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.13
Uniform Delay, d1	21.1
Progression Factor	1.00
Incremental Delay, d2	0.7
Delay (s)	21.8
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	68	4	16	1367	15	52	28	611	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	68	4	16	1367	15	52	28	611	4

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1497	2195	308	1881	2190	691	467	615	0	0	1077	1382	0	0
Stage 1	773	773	-	1415	1415	-	-	-	-	-	-	-	-	-
Stage 2	724	1422	-	466	775	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	85	45	688	44	45	387	726	961	-	-	296	492	-	-
Stage 1	358	407	-	144	202	-	-	-	-	-	-	-	-	-
Stage 2	383	200	-	546	406	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	70	45	688	43	45	387	897	897	-	-	296	296	-	-
Mov Cap-2 Maneuver	160	98	-	115	139	-	-	-	-	-	-	-	-	-
Stage 1	358	407	-	144	202	-	-	-	-	-	-	-	-	-
Stage 2	316	200	-	532	406	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	16.3	0.1	2.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	897	-	-	688	387	296	-	-
HCM Lane V/C Ratio	0.022	-	-	0.026	0.176	0.27	-	-
HCM Control Delay (s)	9.1	-	-	10.4	16.3	21.6	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	1.1	-	-

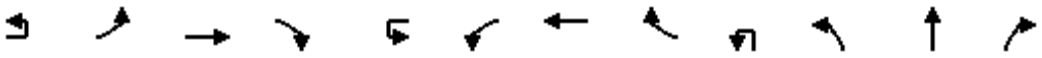
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	13	56	3	36	1247	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.89			0.91			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1770	1649			1678			1770	3532			1770
Flt Permitted	0.77	1.00			0.97			0.95	1.00			0.95
Satd. Flow (perm)	1439	1649			1640			1770	3532			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	13	56	3	36	1247	17	31	51
RTOR Reduction (vph)	0	27	0	0	33	0	0	0	1	0	0	0
Lane Group Flow (vph)	124	33	0	0	49	0	0	39	1263	0	0	82
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			5.5	24.1			3.5
Effective Green, g (s)	26.2	26.2			26.2			5.5	24.1			3.5
Actuated g/C Ratio	0.40	0.40			0.40			0.08	0.37			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	580	664			661			149	1309			95
v/s Ratio Prot		0.02						0.02	c0.36			c0.05
v/s Ratio Perm	c0.09				0.03							
v/c Ratio	0.21	0.05			0.07			0.26	0.96			0.86
Uniform Delay, d1	12.7	11.8			11.9			27.8	20.0			30.5
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	0.8	0.1			0.2			4.2	17.7			60.4
Delay (s)	13.5	12.0			12.1			32.1	37.8			90.9
Level of Service	B	B			B			C	D			F
Approach Delay (s)		13.0			12.1				37.6			
Approach LOS		B			B				D			

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	596	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	22.1	
Effective Green, g (s)	22.1	
Actuated g/C Ratio	0.34	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1194	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.50	
Uniform Delay, d1	17.0	
Progression Factor	1.00	
Incremental Delay, d2	1.5	
Delay (s)	18.5	
Level of Service	B	
Approach Delay (s)	27.2	
Approach LOS	C	

Intersection Summary

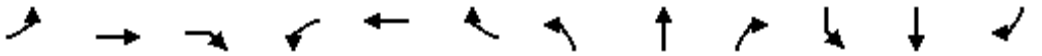


Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	1	219	525	61	3	347	529	212	10	81	856	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	219	525	61	3	347	529	212	10	81	856	562
RTOR Reduction (vph)	0	0	0	42	0	0	0	117	0	0	0	233
Lane Group Flow (vph)	0	220	525	19	0	350	529	95	0	91	856	329
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		12.0	28.2	28.2		10.0	26.2	26.2		5.6	27.4	27.4
Effective Green, g (s)		12.0	28.2	28.2		10.0	26.2	26.2		5.6	27.4	27.4
Actuated g/C Ratio		0.13	0.31	0.31		0.11	0.29	0.29		0.06	0.30	0.30
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		236	1110	496		381	1031	461		110	1078	482
v/s Ratio Prot		c0.12	0.15			0.10	c0.15			0.05	c0.24	
v/s Ratio Perm				0.01				0.06				0.21
v/c Ratio		0.93	0.47	0.04		0.92	0.51	0.21		0.83	0.79	0.68
Uniform Delay, d1		38.5	24.9	21.4		39.5	26.5	24.0		41.7	28.7	27.4
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		40.2	1.4	0.1		26.5	1.8	1.0		37.6	4.1	4.0
Delay (s)		78.7	26.3	21.6		66.0	28.4	25.0		79.3	32.8	31.4
Level of Service		E	C	C		E	C	C		E	C	C
Approach Delay (s)			40.3				39.8				35.1	
Approach LOS			D				D				D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	19.5
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	4	174	326	106
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	174	326	106
RTOR Reduction (vph)	0	0	0	75
Lane Group Flow (vph)	0	178	326	31
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		4.8	26.7	26.7
Effective Green, g (s)		4.8	26.7	26.7
Actuated g/C Ratio		0.05	0.30	0.30
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		183	1051	470
v/s Ratio Prot		c0.05	0.09	
v/s Ratio Perm				0.02
v/c Ratio		0.97	0.31	0.07
Uniform Delay, d1		42.5	24.5	22.7
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		58.2	0.2	0.1
Delay (s)		100.7	24.6	22.7
Level of Service		F	C	C
Approach Delay (s)			46.5	
Approach LOS			D	

Intersection Summary



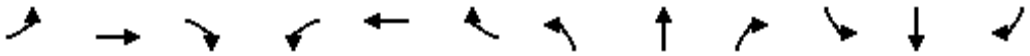
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	425	42	40	376	36	31	303	55	90	76	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.99		1.00	0.99			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1770	3491		1770	1838			3450			3273	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (perm)	1770	3491		1770	1838			3450			3273	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	77	425	42	40	376	36	31	303	55	90	76	111
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	90	0
Lane Group Flow (vph)	77	467	0	40	409	0	0	389	0	0	187	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	4.5	19.7		4.0	19.7			14.3			19.1	
Effective Green, g (s)	4.5	19.7		4.0	19.7			14.3			19.1	
Actuated g/C Ratio	0.04	0.20		0.04	0.20			0.14			0.19	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	79	687		70	362			493			625	
v/s Ratio Prot	c0.04	0.13		0.02	c0.22			c0.11			c0.06	
v/s Ratio Perm												
v/c Ratio	0.97	0.68		0.57	1.13			0.79			0.30	
Uniform Delay, d1	47.7	37.2		47.2	40.1			41.4			34.7	
Progression Factor	1.00	1.00		0.76	0.65			1.00			1.00	
Incremental Delay, d2	94.4	5.4		26.2	84.2			12.1			1.2	
Delay (s)	142.1	42.6		61.9	110.2			53.5			35.9	
Level of Service	F	D		E	F			D			D	
Approach Delay (s)		56.7			105.9			53.5			35.9	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	62.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	95	90	11
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.93		
Flt Protected	0.98		
Satd. Flow (prot)	1692		
Flt Permitted	0.98		
Satd. Flow (perm)	1692		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	95	90	11
RTOR Reduction (vph)	166	0	0
Lane Group Flow (vph)	30	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.16		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	262		
v/s Ratio Prot	c0.02		
v/s Ratio Perm			
v/c Ratio	0.12		
Uniform Delay, d1	36.4		
Progression Factor	1.00		
Incremental Delay, d2	0.9		
Delay (s)	37.3		
Level of Service	D		
Approach Delay (s)	37.3		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	327	106	126	510	91	199	314	358	112	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.96		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3409		1770	3459			3284			3404	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3409		1770	3459			3284			3404	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	327	106	126	510	91	199	314	358	112	144	39
RTOR Reduction (vph)	0	42	0	0	19	0	0	168	0	0	16	0
Lane Group Flow (vph)	32	391	0	126	582	0	0	703	0	0	279	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	2.9	18.2		5.9	21.2			18.1			16.5	
Effective Green, g (s)	2.9	18.2		5.9	21.2			18.1			16.5	
Actuated g/C Ratio	0.04	0.24		0.08	0.28			0.24			0.22	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	68	827		139	977			792			748	
v/s Ratio Prot	0.02	c0.11		c0.07	c0.17			c0.21			c0.08	
v/s Ratio Perm												
v/c Ratio	0.47	0.47		0.91	0.60			0.89			0.37	
Uniform Delay, d1	35.3	24.3		34.3	23.2			27.5			24.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	21.6	1.9		54.6	2.7			14.0			1.4	
Delay (s)	56.9	26.2		88.9	25.9			41.5			26.3	
Level of Service	E	C		F	C			D			C	
Approach Delay (s)		28.3			36.8			41.5			26.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	151	1	12	52	15	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	151	1	12	52	15	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	152	0	0	239	245	152	249	238	60
Stage 1	-	-	-	-	-	-	154	154	-	84	84	-
Stage 2	-	-	-	-	-	-	85	91	-	165	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1535	-	-	1429	-	-	715	657	894	705	663	1005
Stage 1	-	-	-	-	-	-	848	770	-	924	825	-
Stage 2	-	-	-	-	-	-	923	820	-	837	770	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1535	-	-	1429	-	-	708	650	894	682	656	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	708	650	-	682	656	-
Stage 1	-	-	-	-	-	-	847	769	-	923	818	-
Stage 2	-	-	-	-	-	-	913	813	-	815	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	9.2	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	876	1535	-	-	1429	-	-	721
HCM Lane V/C Ratio	0.029	0.001	-	-	0.008	-	-	0.017
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	116	20	28	28	0	18	0	37	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	116	20	28	28	0	18	0	37	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	28	0	0	136	0	0	210	210	126	229	220	28
Stage 1	-	-	-	-	-	-	126	126	-	84	84	-
Stage 2	-	-	-	-	-	-	84	84	-	145	136	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1585	-	-	1448	-	-	747	687	924	726	678	1047
Stage 1	-	-	-	-	-	-	878	792	-	924	825	-
Stage 2	-	-	-	-	-	-	924	825	-	858	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1585	-	-	1448	-	-	736	673	924	686	664	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	736	673	-	686	664	-
Stage 1	-	-	-	-	-	-	878	792	-	924	809	-
Stage 2	-	-	-	-	-	-	906	809	-	824	784	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.8	9.5	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	853	1585	-	-	1448	-	-	-
HCM Lane V/C Ratio	0.064	-	-	-	0.019	-	-	-
HCM Control Delay (s)	9.5	0	-	-	7.5	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	64	84	1361	623	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	84	1361	623	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1496	335	670	0	-	0
Stage 1	647	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	113	661	916	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	661	916	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	345	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	916	-	661	-	-
HCM Lane V/C Ratio	0.092	-	0.097	-	-
HCM Control Delay (s)	9.3	-	11	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	64	36	27	72	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	64	36	27	72	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	63	0	-	0	156	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1540	-	-	-	835	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1540	-	-	-	823	1018
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1540	-	-	-	851
HCM Lane V/C Ratio	0.014	-	-	-	0.102
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	794	353	506	509	415	873
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	794	0	506	0	415	873
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1105	508	853	382	577	2127
Arrive On Green	0.32	0.00	0.40	0.00	0.32	0.60
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	794	0	506	0	415	873
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	20.4	0.0	11.2	0.0	20.6	13.1
Cycle Q Clear(g_c), s	20.4	0.0	11.2	0.0	20.6	13.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1105	508	853	382	577	2127
V/C Ratio(X)	0.72	0.00	0.59	0.00	0.72	0.41
Avail Cap(c_a), veh/h	1105	508	853	382	577	2127
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	26.0	0.0	29.7	10.6
Incr Delay (d2), s/veh	4.0	0.0	3.0	0.0	7.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	0.0	5.7	0.0	11.2	6.5
LnGrp Delay(d),s/veh	34.0	0.0	29.1	0.0	37.3	11.2
LnGrp LOS	C		C		D	B
Approach Vol, veh/h	794		506			1288
Approach Delay, s/veh	34.0		29.1			19.6
Approach LOS	C		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.0		64.0			36.0	28.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		32.1		60.1			32.5	24.1
Max Q Clear Time (g_c+I1), s		22.4		15.1			22.6	13.2
Green Ext Time (p_c), s		2.3		13.5			1.0	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	348	0	315	10	7	12	28	170	694	0	0	1300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.86			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			1.00
Satd. Flow (prot)	1681	1523			1729			1770	3539			3539
Flt Permitted	0.95	1.00			0.60			0.95	1.00			1.00
Satd. Flow (perm)	1681	1523			1051			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	348	0	315	10	7	12	28	170	694	0	0	1300
RTOR Reduction (vph)	0	198	0	0	11	0	0	0	0	0	0	0
Lane Group Flow (vph)	313	152	0	0	18	0	0	198	694	0	0	1300
Turn Type	Split	NA		Perm	NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	17.5	17.5			4.5			7.4	37.1			26.1
Effective Green, g (s)	17.5	17.5			4.5			7.4	37.1			26.1
Actuated g/C Ratio	0.25	0.25			0.06			0.11	0.53			0.37
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	420	380			67			187	1875			1319
v/s Ratio Prot	c0.19	0.10						c0.11	0.20			c0.37
v/s Ratio Perm					c0.02							
v/c Ratio	0.75	0.40			0.27			1.06	0.37			0.99
Uniform Delay, d1	24.2	21.9			31.2			31.3	9.6			21.8
Progression Factor	1.00	1.00			1.00			1.00	1.06			1.00
Incremental Delay, d2	11.4	3.1			9.4			82.2	0.6			21.6
Delay (s)	35.6	25.0			40.6			113.5	10.8			43.3
Level of Service	D	C			D			F	B			D
Approach Delay (s)		30.0			40.6				33.6			37.1
Approach LOS		C			D				C			D

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	420
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	420
RTOR Reduction (vph)	202
Lane Group Flow (vph)	218
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	26.1
Effective Green, g (s)	26.1
Actuated g/C Ratio	0.37
Clearance Time (s)	3.9
Lane Grp Cap (vph)	590
v/s Ratio Prot	
v/s Ratio Perm	0.14
v/c Ratio	0.37
Uniform Delay, d1	16.0
Progression Factor	1.00
Incremental Delay, d2	1.8
Delay (s)	17.7
Level of Service	B
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	23	0	0	41	50	17	819	19	48	77	1518	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	41	50	17	819	19	48	77	1518	19

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2322	2750	769	1972	2750	419	1145	1537	0	0	653	838	0	0
Stage 1	1778	1778	-	963	963	-	-	-	-	-	-	-	-	-
Stage 2	544	972	-	1009	1787	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	20	20	344	37	20	583	268	429	-	-	553	792	-	-
Stage 1	85	134	-	274	332	-	-	-	-	-	-	-	-	-
Stage 2	491	329	-	257	132	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	19	20	344	35	20	583	280	280	-	-	656	656	-	-
Mov Cap-2 Maneuver	67	83	-	112	54	-	-	-	-	-	-	-	-	-
Stage 1	85	134	-	274	332	-	-	-	-	-	-	-	-	-
Stage 2	456	329	-	240	132	-	-	-	-	-	-	-	-	-

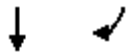
Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	11.6	1.6	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	280	-	-	344	583	656	-	-
HCM Lane V/C Ratio	0.239	-	-	0.067	0.07	0.191	-	-
HCM Control Delay (s)	21.9	-	-	16.2	11.6	11.8	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-	0.2	0.2	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	24	45	7	73	676	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.87			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1770	1621			1723			1770	3530			1770
Flt Permitted	0.71	1.00			0.90			0.95	1.00			0.95
Satd. Flow (perm)	1325	1621			1570			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	24	45	7	73	676	12	68	50
RTOR Reduction (vph)	0	83	0	0	30	0	0	0	2	0	0	0
Lane Group Flow (vph)	242	59	0	0	71	0	0	80	686	0	0	118
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			4.5	31.1			11.5
Effective Green, g (s)	26.2	26.2			26.2			4.5	31.1			11.5
Actuated g/C Ratio	0.33	0.33			0.33			0.06	0.39			0.14
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	433	530			514			99	1372			254
v/s Ratio Prot		0.04						c0.05	0.19			0.07
v/s Ratio Perm	c0.18				0.05							
v/c Ratio	0.56	0.11			0.14			0.81	0.50			0.46
Uniform Delay, d1	22.1	18.8			18.9			37.3	18.6			31.4
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	5.1	0.4			0.6			48.9	1.3			6.0
Delay (s)	27.3	19.2			19.5			86.2	19.9			37.4
Level of Service	C	B			B			F	B			D
Approach Delay (s)		24.3			19.5				26.8			
Approach LOS		C			B				C			

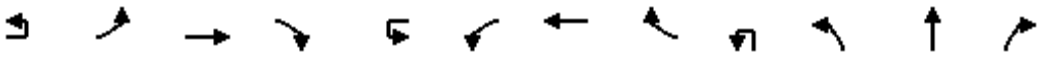
Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



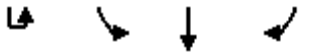
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1436	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3503	
Flt Permitted	1.00	
Satd. Flow (perm)	3503	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1436	105
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	1534	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	38.1	
Effective Green, g (s)	38.1	
Actuated g/C Ratio	0.48	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1668	
v/s Ratio Prot	c0.44	
v/s Ratio Perm		
v/c Ratio	0.92	
Uniform Delay, d1	19.5	
Progression Factor	1.00	
Incremental Delay, d2	9.7	
Delay (s)	29.3	
Level of Service	C	
Approach Delay (s)	29.8	
Approach LOS	C	

Intersection Summary



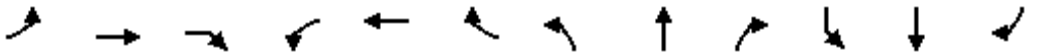
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	9	212	418	72	8	449	564	228	34	78	463	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	212	418	72	8	449	564	228	34	78	463	316
RTOR Reduction (vph)	0	0	0	50	0	0	0	162	0	0	0	226
Lane Group Flow (vph)	0	221	418	22	0	457	564	66	0	112	463	90
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		13.0	28.2	28.2		12.0	27.2	27.2		8.0	26.9	26.9
Effective Green, g (s)		13.0	28.2	28.2		12.0	27.2	27.2		8.0	26.9	26.9
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29		0.08	0.28	0.28
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		243	1057	472		436	1019	456		150	1008	451
v/s Ratio Prot		0.12	0.12			c0.13	c0.16			0.06	0.13	
v/s Ratio Perm				0.01				0.04				0.06
v/c Ratio		0.91	0.40	0.05		1.05	0.55	0.14		0.75	0.46	0.20
Uniform Delay, d1		40.1	26.3	23.5		41.2	28.5	25.0		42.2	27.8	25.6
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		34.0	1.1	0.2		56.3	2.2	0.7		18.2	0.3	0.2
Delay (s)		74.2	27.4	23.7		97.5	30.6	25.6		60.4	28.1	25.8
Level of Service		E	C	C		F	C	C		E	C	C
Approach Delay (s)			41.6				54.2				31.3	
Approach LOS			D				D				C	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	21	290	883	294
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	290	883	294
RTOR Reduction (vph)	0	0	0	120
Lane Group Flow (vph)	0	311	883	174
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		7.8	26.8	26.8
Effective Green, g (s)		7.8	26.8	26.8
Actuated g/C Ratio		0.08	0.28	0.28
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		283	1004	449
v/s Ratio Prot		c0.09	c0.25	
v/s Ratio Perm				0.11
v/c Ratio		1.10	0.88	0.39
Uniform Delay, d1		43.3	32.3	27.2
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		82.6	8.9	0.6
Delay (s)		125.9	41.2	27.7
Level of Service		F	D	C
Approach Delay (s)			56.2	
Approach LOS			E	

Intersection Summary



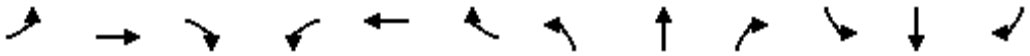
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	447	118	70	432	35	32	96	70	224	201	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3428		1770	1842			3325			3334	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3428		1770	1842			3325			3334	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	59	447	118	70	432	35	32	96	70	224	201	153
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	33	0
Lane Group Flow (vph)	59	565	0	70	464	0	0	198	0	0	545	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	4.5	26.7		7.0	29.7			14.3			19.1	
Effective Green, g (s)	4.5	26.7		7.0	29.7			14.3			19.1	
Actuated g/C Ratio	0.04	0.24		0.06	0.27			0.13			0.17	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	72	832		112	497			432			578	
v/s Ratio Prot	c0.03	0.16		0.04	c0.25			c0.06			c0.16	
v/s Ratio Perm												
v/c Ratio	0.82	0.68		0.62	0.93			0.46			0.94	
Uniform Delay, d1	52.3	37.8		50.2	39.2			44.3			44.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	63.6	4.4		23.5	26.9			3.5			25.7	
Delay (s)	116.0	42.2		73.7	66.0			47.7			70.6	
Level of Service	F	D		E	E			D			E	
Approach Delay (s)		49.2			67.0			47.7			70.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	57	59	18
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.92		
Flt Protected	0.98		
Satd. Flow (prot)	1682		
Flt Permitted	0.98		
Satd. Flow (perm)	1682		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	57	59	18
RTOR Reduction (vph)	115	0	0
Lane Group Flow (vph)	19	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.14		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	237		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.08		
Uniform Delay, d1	41.1		
Progression Factor	1.00		
Incremental Delay, d2	0.7		
Delay (s)	41.7		
Level of Service	D		
Approach Delay (s)	41.7		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	450	124	292	627	60	122	105	183	46	197	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.93			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	3425		1770	3493			3254			3426	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (perm)	1770	3425		1770	3493			3254			3426	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	450	124	292	627	60	122	105	183	46	197	47
RTOR Reduction (vph)	0	32	0	0	9	0	0	145	0	0	20	0
Lane Group Flow (vph)	37	542	0	292	678	0	0	265	0	0	270	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Effective Green, g (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Actuated g/C Ratio	0.07	0.21		0.17	0.31			0.21			0.21	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	130	719		307	1082			671			706	
v/s Ratio Prot	0.02	c0.16		c0.17	0.19			c0.08			c0.08	
v/s Ratio Perm												
v/c Ratio	0.28	0.75		0.95	0.63			0.39			0.38	
Uniform Delay, d1	35.1	29.7		32.7	23.6			27.4			27.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.4	7.2		40.3	2.7			1.7			1.6	
Delay (s)	40.5	36.9		73.0	26.4			29.2			28.9	
Level of Service	D	D		E	C			C			C	
Approach Delay (s)		37.1			40.3			29.2			28.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	293	1	37	143	22	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	293	1	37	143	22	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	165	0	0	294	0	0	534	539	294	554	528	154
Stage 1	-	-	-	-	-	-	300	300	-	228	228	-
Stage 2	-	-	-	-	-	-	234	239	-	326	300	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1413	-	-	1268	-	-	457	449	745	443	456	892
Stage 1	-	-	-	-	-	-	709	666	-	775	715	-
Stage 2	-	-	-	-	-	-	769	708	-	687	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1413	-	-	1268	-	-	437	433	745	400	440	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	437	433	-	400	440	-
Stage 1	-	-	-	-	-	-	707	664	-	773	692	-
Stage 2	-	-	-	-	-	-	733	685	-	636	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	11.1	14.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	653	1413	-	-	1268	-	-	429
HCM Lane V/C Ratio	0.1	0.002	-	-	0.029	-	-	0.117
HCM Control Delay (s)	11.1	7.6	0	-	7.9	0	-	14.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	226	31	72	88	0	25	0	71	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	226	31	72	88	0	25	0	71	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	257	0	0	474	474	242	509	489	88
Stage 1	-	-	-	-	-	-	242	242	-	232	232	-
Stage 2	-	-	-	-	-	-	232	232	-	277	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1508	-	-	1308	-	-	501	489	797	475	480	970
Stage 1	-	-	-	-	-	-	762	705	-	771	713	-
Stage 2	-	-	-	-	-	-	771	713	-	729	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1508	-	-	1308	-	-	479	461	797	414	452	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	479	461	-	414	452	-
Stage 1	-	-	-	-	-	-	762	705	-	771	672	-
Stage 2	-	-	-	-	-	-	726	672	-	664	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.6	11.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	680	1508	-	-	1308	-	-	-
HCM Lane V/C Ratio	0.141	-	-	-	0.055	-	-	-
HCM Control Delay (s)	11.2	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	244	148	854	1434	200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	244	148	854	1434	200

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2257	817	1634	0	-	0
Stage 1	1534	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	35	320	393	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	22	320	393	-	-	-
Mov Cap-2 Maneuver	22	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	275	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.8	2.9	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	393	-	320	-	-
HCM Lane V/C Ratio	0.377	-	0.763	-	-
HCM Control Delay (s)	19.6	-	44.8	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	1.7	-	5.9	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	36	74	110	62	184	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	74	110	62	184	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	172	0	-	0	287	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1405	-	-	-	703	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1405	-	-	-	684	907
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1405	-	-	-	723
HCM Lane V/C Ratio	0.026	-	-	-	0.326
HCM Control Delay (s)	7.6	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	13	56	3	40	1243	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.89			0.91			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1770	1649			1678			1770	3532			1770
Flt Permitted	0.77	1.00			0.97			0.95	1.00			0.95
Satd. Flow (perm)	1439	1649			1640			1770	3532			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	13	56	3	40	1243	17	31	51
RTOR Reduction (vph)	0	27	0	0	33	0	0	0	1	0	0	0
Lane Group Flow (vph)	124	33	0	0	49	0	0	43	1259	0	0	82
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			5.5	24.1			3.5
Effective Green, g (s)	26.2	26.2			26.2			5.5	24.1			3.5
Actuated g/C Ratio	0.40	0.40			0.40			0.08	0.37			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	580	664			661			149	1309			95
v/s Ratio Prot		0.02						0.02	c0.36			c0.05
v/s Ratio Perm	c0.09				0.03							
v/c Ratio	0.21	0.05			0.07			0.29	0.96			0.86
Uniform Delay, d1	12.7	11.8			11.9			27.9	20.0			30.5
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	0.8	0.1			0.2			4.8	17.2			60.4
Delay (s)	13.5	12.0			12.1			32.7	37.2			90.9
Level of Service	B	B			B			C	D			F
Approach Delay (s)		13.0			12.1				37.1			
Approach LOS		B			B				D			

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	596	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	22.1	
Effective Green, g (s)	22.1	
Actuated g/C Ratio	0.34	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1194	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.50	
Uniform Delay, d1	17.0	
Progression Factor	1.00	
Incremental Delay, d2	1.5	
Delay (s)	18.5	
Level of Service	B	
Approach Delay (s)	27.2	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	151	1	12	52	19	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	151	1	12	52	19	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	152	0	0	241	249	152	251	240	62
Stage 1	-	-	-	-	-	-	154	154	-	86	86	-
Stage 2	-	-	-	-	-	-	87	95	-	165	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1429	-	-	713	654	894	702	661	1003
Stage 1	-	-	-	-	-	-	848	770	-	922	824	-
Stage 2	-	-	-	-	-	-	921	816	-	837	770	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1429	-	-	706	647	894	679	654	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	706	647	-	679	654	-
Stage 1	-	-	-	-	-	-	847	769	-	921	817	-
Stage 2	-	-	-	-	-	-	911	809	-	815	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	9.2	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	875	1529	-	-	1429	-	-	718
HCM Lane V/C Ratio	0.029	0.001	-	-	0.008	-	-	0.017
HCM Control Delay (s)	9.2	7.4	0	-	7.5	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	64	80	1361	628	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	80	1361	628	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1490	335	670	0	-	0
Stage 1	649	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	115	661	916	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	661	916	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	350	-	-	-	-	-

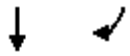
Approach	EB	NB	SB
HCM Control Delay, s	11	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	916	-	661	-	-
HCM Lane V/C Ratio	0.087	-	0.097	-	-
HCM Control Delay (s)	9.3	-	11	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	24	45	7	81	668	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.87			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1770	1621			1723			1770	3530			1770
Flt Permitted	0.71	1.00			0.90			0.95	1.00			0.95
Satd. Flow (perm)	1325	1621			1570			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	24	45	7	81	668	12	68	50
RTOR Reduction (vph)	0	83	0	0	30	0	0	0	2	0	0	0
Lane Group Flow (vph)	242	59	0	0	71	0	0	88	678	0	0	118
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			4.5	31.1			11.5
Effective Green, g (s)	26.2	26.2			26.2			4.5	31.1			11.5
Actuated g/C Ratio	0.33	0.33			0.33			0.06	0.39			0.14
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	433	530			514			99	1372			254
v/s Ratio Prot		0.04						c0.05	0.19			0.07
v/s Ratio Perm	c0.18				0.05							
v/c Ratio	0.56	0.11			0.14			0.89	0.49			0.46
Uniform Delay, d1	22.1	18.8			18.9			37.5	18.5			31.4
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	5.1	0.4			0.6			63.9	1.3			6.0
Delay (s)	27.3	19.2			19.5			101.4	19.8			37.4
Level of Service	C	B			B			F	B			D
Approach Delay (s)		24.3			19.5				29.1			
Approach LOS		C			B				C			

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1436	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3503	
Flt Permitted	1.00	
Satd. Flow (perm)	3503	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1436	105
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	1534	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	38.1	
Effective Green, g (s)	38.1	
Actuated g/C Ratio	0.48	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1668	
v/s Ratio Prot	c0.44	
v/s Ratio Perm		
v/c Ratio	0.92	
Uniform Delay, d1	19.5	
Progression Factor	1.00	
Incremental Delay, d2	9.7	
Delay (s)	29.3	
Level of Service	C	
Approach Delay (s)	29.8	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	293	1	37	143	30	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	293	1	37	143	30	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	173	0	0	294	0	0	538	547	294	558	532	158
Stage 1	-	-	-	-	-	-	300	300	-	232	232	-
Stage 2	-	-	-	-	-	-	238	247	-	326	300	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1268	-	-	454	445	745	440	453	887
Stage 1	-	-	-	-	-	-	709	666	-	771	713	-
Stage 2	-	-	-	-	-	-	765	702	-	687	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1268	-	-	434	429	745	398	437	887
Mov Cap-2 Maneuver	-	-	-	-	-	-	434	429	-	398	437	-
Stage 1	-	-	-	-	-	-	707	664	-	769	690	-
Stage 2	-	-	-	-	-	-	729	680	-	636	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	11.1	14.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1404	-	-	1268	-	-	427
HCM Lane V/C Ratio	0.1	0.002	-	-	0.029	-	-	0.117
HCM Control Delay (s)	11.1	7.6	0	-	7.9	0	-	14.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	244	140	854	1454	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	244	140	854	1454	180

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2251	817	1634	0	-	0
Stage 1	1544	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	35	320	393	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	320	393	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.8	2.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	393	-	320	-	-
HCM Lane V/C Ratio	0.356	-	0.763	-	-
HCM Control Delay (s)	19.1	-	44.8	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	1.6	-	5.9	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	36	74	110	62	184	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	74	110	62	184	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	172	0	-	0	287	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1405	-	-	-	703	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1405	-	-	-	684	907
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1405	-	-	-	724
HCM Lane V/C Ratio	0.026	-	-	-	0.327
HCM Control Delay (s)	7.6	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	323	677	1214	742	517	483
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	323	0	1214	0	517	483
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	623	287	1348	603	577	2623
Arrive On Green	0.18	0.00	0.26	0.00	0.32	0.74
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	323	0	1214	0	517	483
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	8.5	0.0	33.2	0.0	27.8	4.1
Cycle Q Clear(g_c), s	8.5	0.0	33.2	0.0	27.8	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	623	287	1348	603	577	2623
V/C Ratio(X)	0.52	0.00	0.90	0.00	0.90	0.18
Avail Cap(c_a), veh/h	623	287	1348	603	577	2623
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	35.4	0.0	32.2	3.9
Incr Delay (d2), s/veh	3.1	0.0	9.9	0.0	19.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	18.0	0.0	16.6	2.0
LnGrp Delay(d),s/veh	40.1	0.0	45.3	0.0	51.3	4.0
LnGrp LOS	D		D		D	A
Approach Vol, veh/h	323		1214			1000
Approach Delay, s/veh	40.1		45.3			28.5
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		22.0		78.0			36.0	42.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		18.1		74.1			32.5	38.1
Max Q Clear Time (g_c+I1), s		10.5		6.1			29.8	35.2
Green Ext Time (p_c), s		0.7		21.3			0.5	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	491	0	132	0	2	1	40	247	1378	0	0	524
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.93			0.95			1.00	1.00			1.00
Flt Protected	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (prot)	1681	1609			1779			1770	3539			3539
Flt Permitted	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (perm)	1681	1609			1779			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	491	0	132	0	2	1	40	247	1378	0	0	524
RTOR Reduction (vph)	0	59	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	319	245	0	0	2	0	0	287	1378	0	0	524
Turn Type	Split	NA			NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	32.5	32.5			3.5			26.4	53.1			23.1
Effective Green, g (s)	32.5	32.5			3.5			26.4	53.1			23.1
Actuated g/C Ratio	0.32	0.32			0.04			0.26	0.53			0.23
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	546	522			62			467	1879			817
v/s Ratio Prot	c0.19	0.15			c0.00			0.16	c0.39			0.15
v/s Ratio Perm												
v/c Ratio	0.58	0.47			0.03			0.61	0.73			0.64
Uniform Delay, d1	28.1	26.9			46.6			32.3	18.0			34.7
Progression Factor	1.00	1.00			1.00			1.01	1.05			1.00
Incremental Delay, d2	4.5	3.0			1.0			5.9	2.6			3.7
Delay (s)	32.6	29.9			47.6			38.7	21.5			38.5
Level of Service	C	C			D			D	C			D
Approach Delay (s)		31.3			47.6				24.5			46.1
Approach LOS		C			D				C			D

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	210
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	210
RTOR Reduction (vph)	161
Lane Group Flow (vph)	49
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	23.1
Effective Green, g (s)	23.1
Actuated g/C Ratio	0.23
Clearance Time (s)	3.9
Lane Grp Cap (vph)	365
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.13
Uniform Delay, d1	30.5
Progression Factor	2.10
Incremental Delay, d2	0.7
Delay (s)	64.9
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	68	4	16	1502	13	52	28	583	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	68	4	16	1502	13	52	28	583	4

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1536	2300	294	2001	2296	758	447	587	0	0	1174	1515	0	0
Stage 1	745	745	-	1549	1549	-	-	-	-	-	-	-	-	-
Stage 2	791	1555	-	452	747	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	79	38	702	35	38	350	748	984	-	-	257	437	-	-
Stage 1	372	419	-	119	174	-	-	-	-	-	-	-	-	-
Stage 2	349	172	-	557	418	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	64	38	702	34	38	350	920	920	-	-	254	254	-	-
Mov Cap-2 Maneuver	145	78	-	97	125	-	-	-	-	-	-	-	-	-
Stage 1	372	419	-	119	174	-	-	-	-	-	-	-	-	-
Stage 2	281	172	-	543	418	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	17.7	0.1	3.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	920	-	-	702	350	254	-	-
HCM Lane V/C Ratio	0.022	-	-	0.026	0.194	0.315	-	-
HCM Control Delay (s)	9	-	-	10.3	17.7	25.6	-	-
HCM Lane LOS	A	-	-	B	C	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.7	1.3	-	-

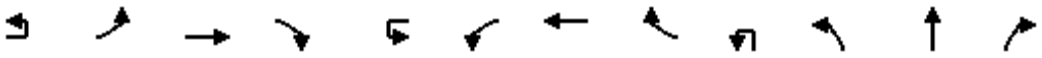
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	74	13	30	13	10	53	3	21	1381	17	10	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.91			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1770	1668			1673			1770	3533			1770
Flt Permitted	0.77	1.00			0.97			0.95	1.00			0.95
Satd. Flow (perm)	1437	1668			1634			1770	3533			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	13	30	13	10	53	3	21	1381	17	10	49
RTOR Reduction (vph)	0	19	0	0	33	0	0	0	1	0	0	0
Lane Group Flow (vph)	74	24	0	0	43	0	0	24	1397	0	0	59
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			3.5	29.1			3.5
Effective Green, g (s)	26.2	26.2			26.2			3.5	29.1			3.5
Actuated g/C Ratio	0.37	0.37			0.37			0.05	0.42			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	537	624			611			88	1468			88
v/s Ratio Prot		0.01						0.01	c0.40			c0.03
v/s Ratio Perm	c0.05				0.03							
v/c Ratio	0.14	0.04			0.07			0.27	0.95			0.67
Uniform Delay, d1	14.4	13.9			14.1			32.0	19.8			32.7
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	0.5	0.1			0.2			7.5	14.5			33.9
Delay (s)	15.0	14.0			14.3			39.5	34.2			66.6
Level of Service	B	B			B			D	C			E
Approach Delay (s)		14.6			14.3				34.3			
Approach LOS		B			B				C			

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Volume (vph)	548	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3513	
Flt Permitted	1.00	
Satd. Flow (perm)	3513	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	548	29
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	572	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	29.1	
Effective Green, g (s)	29.1	
Actuated g/C Ratio	0.42	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1460	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.39	
Uniform Delay, d1	14.3	
Progression Factor	1.00	
Incremental Delay, d2	0.8	
Delay (s)	15.1	
Level of Service	B	
Approach Delay (s)	19.8	
Approach LOS	B	

Intersection Summary

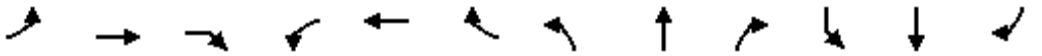


Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	1	210	598	65	3	430	529	198	10	81	951	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	210	598	65	3	430	529	198	10	81	951	590
RTOR Reduction (vph)	0	0	0	46	0	0	0	121	0	0	0	229
Lane Group Flow (vph)	0	211	598	19	0	433	529	77	0	91	951	361
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		12.7	27.2	27.2		11.0	25.5	25.5		5.7	28.3	28.3
Effective Green, g (s)		12.7	27.2	27.2		11.0	25.5	25.5		5.7	28.3	28.3
Actuated g/C Ratio		0.14	0.30	0.30		0.12	0.28	0.28		0.06	0.31	0.31
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		247	1060	474		415	993	444		111	1103	493
v/s Ratio Prot		0.12	c0.17			c0.13	0.15			c0.05	c0.27	
v/s Ratio Perm				0.01				0.05				0.23
v/c Ratio		0.85	0.56	0.04		1.04	0.53	0.17		0.82	0.86	0.73
Uniform Delay, d1		38.1	26.8	22.6		39.9	27.6	24.7		42.0	29.4	27.9
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		23.8	2.2	0.2		55.9	2.0	0.9		35.7	7.1	5.5
Delay (s)		62.0	29.0	22.7		95.8	29.7	25.5		77.7	36.5	33.4
Level of Service		E	C	C		F	C	C		E	D	C
Approach Delay (s)			36.5				53.7				37.7	
Approach LOS			D				D				D	

Intersection Summary			
HCM 2000 Control Delay	42.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	19.5
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	4	169	317	91
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	169	317	91
RTOR Reduction (vph)	0	0	0	63
Lane Group Flow (vph)	0	173	317	28
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		4.8	27.5	27.5
Effective Green, g (s)		4.8	27.5	27.5
Actuated g/C Ratio		0.05	0.30	0.30
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		181	1071	479
v/s Ratio Prot		0.05	0.09	
v/s Ratio Perm				0.02
v/c Ratio		0.96	0.30	0.06
Uniform Delay, d1		42.9	24.2	22.5
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		53.6	0.2	0.1
Delay (s)		96.5	24.4	22.5
Level of Service		F	C	C
Approach Delay (s)			45.6	
Approach LOS			D	

Intersection Summary



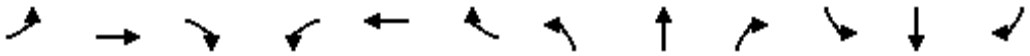
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	513	86	39	391	28	40	396	53	83	96	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.98		1.00	0.99			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1770	3463		1770	1844			3467			3289	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (perm)	1770	3463		1770	1844			3467			3289	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	99	513	86	39	391	28	40	396	53	83	96	111
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	76	0
Lane Group Flow (vph)	99	599	0	39	417	0	0	489	0	0	214	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	9.5	38.7		3.0	32.7			21.3			19.1	
Effective Green, g (s)	9.5	38.7		3.0	32.7			21.3			19.1	
Actuated g/C Ratio	0.08	0.31		0.02	0.26			0.17			0.15	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	134	1072		42	482			590			502	
v/s Ratio Prot	c0.06	0.17		0.02	c0.23			c0.14			c0.06	
v/s Ratio Perm												
v/c Ratio	0.74	0.56		0.93	0.86			0.83			0.43	
Uniform Delay, d1	56.5	36.0		60.9	44.0			50.1			48.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	30.2	2.1		118.7	18.3			12.7			2.6	
Delay (s)	86.8	38.1		179.6	62.4			62.8			50.6	
Level of Service	F	D		F	E			E			D	
Approach Delay (s)		45.0			72.4			62.8			50.6	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	95	90	11
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.93		
Flt Protected	0.98		
Satd. Flow (prot)	1692		
Flt Permitted	0.98		
Satd. Flow (perm)	1692		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	95	90	11
RTOR Reduction (vph)	171	0	0
Lane Group Flow (vph)	25	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.12		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	209		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.12		
Uniform Delay, d1	48.7		
Progression Factor	1.00		
Incremental Delay, d2	1.2		
Delay (s)	49.9		
Level of Service	D		
Approach Delay (s)	49.9		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	476	106	123	504	90	201	355	345	110	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3443		1770	3459			3299			3405	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3443		1770	3459			3299			3405	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	476	106	123	504	90	201	355	345	110	144	39
RTOR Reduction (vph)	0	26	0	0	19	0	0	128	0	0	16	0
Lane Group Flow (vph)	32	556	0	123	575	0	0	773	0	0	277	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	6.9	16.8		6.9	16.8			18.5			16.5	
Effective Green, g (s)	6.9	16.8		6.9	16.8			18.5			16.5	
Actuated g/C Ratio	0.09	0.22		0.09	0.22			0.25			0.22	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	162	771		162	774			813			749	
v/s Ratio Prot	0.02	c0.16		0.07	c0.17			c0.23			c0.08	
v/s Ratio Perm												
v/c Ratio	0.20	0.72		0.76	0.74			0.95			0.37	
Uniform Delay, d1	31.5	26.9		33.2	27.1			27.8			24.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.7	5.8		27.9	6.4			21.6			1.4	
Delay (s)	34.2	32.7		61.1	33.4			49.4			26.2	
Level of Service	C	C		E	C			D			C	
Approach Delay (s)		32.8			38.2			49.4			26.2	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	84	1	12	33	15	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	84	1	12	33	15	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	85	0	0	153	159	85	163	152	41
Stage 1	-	-	-	-	-	-	87	87	-	65	65	-
Stage 2	-	-	-	-	-	-	66	72	-	98	87	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1512	-	-	814	733	974	802	740	1030
Stage 1	-	-	-	-	-	-	921	823	-	946	841	-
Stage 2	-	-	-	-	-	-	945	835	-	908	823	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1512	-	-	807	726	974	778	733	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	807	726	-	778	733	-
Stage 1	-	-	-	-	-	-	920	822	-	945	834	-
Stage 2	-	-	-	-	-	-	936	828	-	886	822	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	8.9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	958	1559	-	-	1512	-	-	811
HCM Lane V/C Ratio	0.026	0.001	-	-	0.008	-	-	0.015
HCM Control Delay (s)	8.9	7.3	0	-	7.4	0	-	9.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

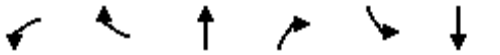
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	49	17	28	9	0	11	0	37	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	17	28	9	0	11	0	37	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	66	0	0	123	123	58	141	131	9
Stage 1	-	-	-	-	-	-	58	58	-	65	65	-
Stage 2	-	-	-	-	-	-	65	65	-	76	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1611	-	-	1536	-	-	852	767	1008	829	760	1073
Stage 1	-	-	-	-	-	-	954	847	-	946	841	-
Stage 2	-	-	-	-	-	-	946	841	-	933	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1611	-	-	1536	-	-	840	753	1008	788	746	1073
Mov Cap-2 Maneuver	-	-	-	-	-	-	840	753	-	788	746	-
Stage 1	-	-	-	-	-	-	954	847	-	946	826	-
Stage 2	-	-	-	-	-	-	929	826	-	899	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.6	8.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	964	1611	-	-	1536	-	-	-
HCM Lane V/C Ratio	0.05	-	-	-	0.018	-	-	-
HCM Control Delay (s)	8.9	0	-	-	7.4	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	748	357	595	478	446	1094
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	748	0	595	0	446	1094
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1070	492	818	366	612	2162
Arrive On Green	0.31	0.00	0.46	0.00	0.34	0.61
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	748	0	595	0	446	1094
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	19.1	0.0	13.6	0.0	22.0	17.4
Cycle Q Clear(g_c), s	19.1	0.0	13.6	0.0	22.0	17.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1070	492	818	366	612	2162
V/C Ratio(X)	0.70	0.00	0.73	0.00	0.73	0.51
Avail Cap(c_a), veh/h	1070	492	818	366	612	2162
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	24.4	0.0	28.7	11.0
Incr Delay (d2), s/veh	3.8	0.0	5.6	0.0	7.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	7.3	0.0	12.0	8.6
LnGrp Delay(d),s/veh	34.1	0.0	30.0	0.0	36.1	11.8
LnGrp LOS	C		C		D	B
Approach Vol, veh/h	748		595			1540
Approach Delay, s/veh	34.1		30.0			18.8
Approach LOS	C		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.0		65.0			38.0	27.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		31.1		61.1			34.5	23.1
Max Q Clear Time (g_c+I1), s		21.1		19.4			24.0	15.6
Green Ext Time (p_c), s		2.2		17.9			1.1	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	348	0	302	10	7	12	28	133	660	0	0	1436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.87			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			1.00
Satd. Flow (prot)	1681	1524			1729			1770	3539			3539
Flt Permitted	0.95	0.99			0.77			0.95	1.00			1.00
Satd. Flow (perm)	1681	1524			1352			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	348	0	302	10	7	12	28	133	660	0	0	1436
RTOR Reduction (vph)	0	166	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	313	171	0	0	17	0	0	161	660	0	0	1436
Turn Type	Split	NA		Perm	NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	24.2	24.2			3.5			12.4	61.4			45.4
Effective Green, g (s)	24.2	24.2			3.5			12.4	61.4			45.4
Actuated g/C Ratio	0.24	0.24			0.04			0.12	0.61			0.45
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	406	368			47			219	2172			1606
v/s Ratio Prot	c0.19	0.11						c0.09	0.19			c0.41
v/s Ratio Perm					c0.01							
v/c Ratio	0.77	0.46			0.37			0.74	0.30			0.89
Uniform Delay, d1	35.3	32.4			47.2			42.2	9.2			25.1
Progression Factor	1.00	1.00			1.00			1.01	1.03			0.74
Incremental Delay, d2	13.2	4.2			21.0			19.6	0.4			6.8
Delay (s)	48.5	36.5			68.2			62.1	9.8			25.3
Level of Service	D	D			E			E	A			C
Approach Delay (s)		42.3			68.2				20.0			21.8
Approach LOS		D			E				C			C

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	420
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	420
RTOR Reduction (vph)	128
Lane Group Flow (vph)	292
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	45.4
Effective Green, g (s)	45.4
Actuated g/C Ratio	0.45
Clearance Time (s)	3.9
Lane Grp Cap (vph)	718
v/s Ratio Prot	
v/s Ratio Perm	0.18
v/c Ratio	0.41
Uniform Delay, d1	18.3
Progression Factor	0.46
Incremental Delay, d2	1.4
Delay (s)	9.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	23	0	0	41	50	17	738	16	48	77	1630	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	41	50	17	738	16	48	77	1630	19

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2393	2778	825	1945	2779	377	1227	1649	0	0	591	754	0	0
Stage 1	1890	1890	-	880	880	-	-	-	-	-	-	-	-	-
Stage 2	503	888	-	1065	1899	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	18	19	316	39	19	621	237	388	-	-	606	852	-	-
Stage 1	72	117	-	308	363	-	-	-	-	-	-	-	-	-
Stage 2	519	360	-	238	116	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	17	19	316	36	19	621	247	247	-	-	714	714	-	-
Mov Cap-2 Maneuver	59	79	-	108	43	-	-	-	-	-	-	-	-	-
Stage 1	72	117	-	308	363	-	-	-	-	-	-	-	-	-
Stage 2	485	360	-	221	116	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	11.2	2	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	247	-	-	316	621	714	-	-
HCM Lane V/C Ratio	0.271	-	-	0.073	0.066	0.175	-	-
HCM Control Delay (s)	24.9	-	-	17.3	11.2	11.1	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-	0.2	0.2	0.6	-	-

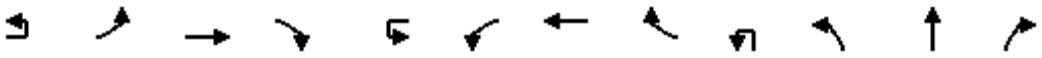
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	137	15	62	32	17	38	7	37	597	12	23	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	1.00	1.00			1.00			1.00	0.95			1.00
Frt	1.00	0.88			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1770	1638			1721			1770	3529			1770
Flt Permitted	0.73	1.00			0.90			0.95	1.00			0.95
Satd. Flow (perm)	1363	1638			1579			1770	3529			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	15	62	32	17	38	7	37	597	12	23	44
RTOR Reduction (vph)	0	42	0	0	26	0	0	0	2	0	0	0
Lane Group Flow (vph)	137	35	0	0	61	0	0	44	607	0	0	67
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			3.5	36.1			6.5
Effective Green, g (s)	26.2	26.2			26.2			3.5	36.1			6.5
Actuated g/C Ratio	0.33	0.33			0.33			0.04	0.45			0.08
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	446	536			517			77	1592			143
v/s Ratio Prot		0.02						0.02	0.17			c0.04
v/s Ratio Perm	c0.10				0.04							
v/c Ratio	0.31	0.07			0.12			0.57	0.38			0.47
Uniform Delay, d1	20.1	18.5			18.8			37.5	14.5			35.1
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	1.8	0.2			0.5			27.3	0.7			10.6
Delay (s)	21.9	18.7			19.3			64.8	15.2			45.7
Level of Service	C	B			B			E	B			D
Approach Delay (s)		20.8			19.3				18.6			
Approach LOS		C			B				B			

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

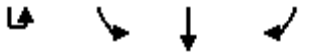
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1561	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3506	
Flt Permitted	1.00	
Satd. Flow (perm)	3506	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1561	105
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	1660	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	39.1	
Effective Green, g (s)	39.1	
Actuated g/C Ratio	0.49	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1713	
v/s Ratio Prot	c0.47	
v/s Ratio Perm		
v/c Ratio	0.97	
Uniform Delay, d1	19.9	
Progression Factor	1.00	
Incremental Delay, d2	15.5	
Delay (s)	35.4	
Level of Service	D	
Approach Delay (s)	35.8	
Approach LOS	D	

Intersection Summary



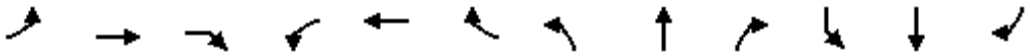
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	9	157	426	72	8	489	671	191	34	78	472	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	157	426	72	8	489	671	191	34	78	472	351
RTOR Reduction (vph)	0	0	0	51	0	0	0	136	0	0	0	249
Lane Group Flow (vph)	0	166	426	21	0	497	671	55	0	112	472	102
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		13.0	27.2	27.2		13.0	27.2	27.2		6.1	27.5	27.5
Effective Green, g (s)		13.0	27.2	27.2		13.0	27.2	27.2		6.1	27.5	27.5
Actuated g/C Ratio		0.14	0.29	0.29		0.14	0.29	0.29		0.06	0.29	0.29
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		242	1013	453		469	1013	453		113	1024	458
v/s Ratio Prot		0.09	0.12			c0.14	c0.19			0.06	0.13	
v/s Ratio Perm				0.01				0.03				0.06
v/c Ratio		0.69	0.42	0.05		1.06	0.66	0.12		0.99	0.46	0.22
Uniform Delay, d1		39.1	27.5	24.5		41.0	29.9	25.1		44.4	27.7	25.6
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.8	1.3	0.2		58.3	3.4	0.5		81.6	0.3	0.2
Delay (s)		46.9	28.8	24.7		99.3	33.3	25.6		126.1	28.0	25.9
Level of Service		D	C	C		F	C	C		F	C	C
Approach Delay (s)			32.9				56.3				38.9	
Approach LOS			C				E				D	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	21	266	1044	229
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	266	1044	229
RTOR Reduction (vph)	0	0	0	85
Lane Group Flow (vph)	0	287	1044	144
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		7.8	29.3	29.3
Effective Green, g (s)		7.8	29.3	29.3
Actuated g/C Ratio		0.08	0.31	0.31
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		281	1091	488
v/s Ratio Prot		c0.08	c0.29	
v/s Ratio Perm				0.09
v/c Ratio		1.02	0.96	0.29
Uniform Delay, d1		43.6	32.2	25.0
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		59.3	17.6	0.3
Delay (s)		102.9	49.9	25.3
Level of Service		F	D	C
Approach Delay (s)			56.0	
Approach LOS			E	

Intersection Summary



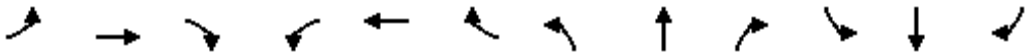
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	511	140	51	448	32	38	118	67	213	252	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3425		1770	1844			3351			3337	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3425		1770	1844			3351			3337	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	511	140	51	448	32	38	118	67	213	252	177
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	36	0
Lane Group Flow (vph)	64	651	0	51	478	0	0	223	0	0	606	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	4.5	28.7		5.0	29.7			14.3			19.1	
Effective Green, g (s)	4.5	28.7		5.0	29.7			14.3			19.1	
Actuated g/C Ratio	0.04	0.26		0.05	0.27			0.13			0.17	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	72	893		80	497			435			579	
v/s Ratio Prot	c0.04	0.19		0.03	c0.26			c0.07			c0.18	
v/s Ratio Perm												
v/c Ratio	0.89	0.73		0.64	0.96			0.51			1.05	
Uniform Delay, d1	52.5	37.1		51.6	39.6			44.6			45.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	78.1	5.2		32.9	31.8			4.3			50.0	
Delay (s)	130.6	42.3		84.5	71.4			48.9			95.4	
Level of Service	F	D		F	E			D			F	
Approach Delay (s)		50.2			72.7			48.9			95.4	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	67.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	57	59	18
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.92		
Flt Protected	0.98		
Satd. Flow (prot)	1682		
Flt Permitted	0.98		
Satd. Flow (perm)	1682		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	57	59	18
RTOR Reduction (vph)	115	0	0
Lane Group Flow (vph)	19	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.14		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	237		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.08		
Uniform Delay, d1	41.1		
Progression Factor	1.00		
Incremental Delay, d2	0.7		
Delay (s)	41.7		
Level of Service	D		
Approach Delay (s)	41.7		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	424	124	352	629	54	137	105	167	43	199	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1770	3419		1770	3497			3268			3426	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (perm)	1770	3419		1770	3497			3268			3426	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	424	124	352	629	54	137	105	167	43	199	48
RTOR Reduction (vph)	0	34	0	0	8	0	0	133	0	0	21	0
Lane Group Flow (vph)	37	514	0	352	675	0	0	276	0	0	269	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Effective Green, g (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Actuated g/C Ratio	0.07	0.21		0.17	0.31			0.21			0.21	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	130	717		307	1084			674			706	
v/s Ratio Prot	0.02	c0.15		c0.20	0.19			c0.08			c0.08	
v/s Ratio Perm												
v/c Ratio	0.28	0.72		1.15	0.62			0.41			0.38	
Uniform Delay, d1	35.1	29.4		33.0	23.6			27.5			27.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.4	6.1		97.1	2.7			1.8			1.6	
Delay (s)	40.5	35.5		130.2	26.3			29.4			28.9	
Level of Service	D	D		F	C			C			C	
Approach Delay (s)		35.8			61.6			29.4			28.9	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	124	1	37	100	22	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	124	1	37	100	22	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	125	0	0	322	327	125	342	316	111
Stage 1	-	-	-	-	-	-	131	131	-	185	185	-
Stage 2	-	-	-	-	-	-	191	196	-	157	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1465	-	-	1462	-	-	631	591	926	612	600	942
Stage 1	-	-	-	-	-	-	873	788	-	817	747	-
Stage 2	-	-	-	-	-	-	811	739	-	845	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1462	-	-	608	574	926	564	583	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	608	574	-	564	583	-
Stage 1	-	-	-	-	-	-	871	786	-	815	727	-
Stage 2	-	-	-	-	-	-	777	719	-	795	786	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.8	9.7	11.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	837	1465	-	-	1462	-	-	590
HCM Lane V/C Ratio	0.078	0.002	-	-	0.025	-	-	0.085
HCM Control Delay (s)	9.7	7.5	0	-	7.5	0	-	11.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	57	22	72	45	0	14	0	69	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	57	22	72	45	0	14	0	69	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	45	0	0	79	0	0	257	257	68	292	268	45
Stage 1	-	-	-	-	-	-	68	68	-	189	189	-
Stage 2	-	-	-	-	-	-	189	189	-	103	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1563	-	-	1519	-	-	696	647	995	660	638	1025
Stage 1	-	-	-	-	-	-	942	838	-	813	744	-
Stage 2	-	-	-	-	-	-	813	744	-	903	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1563	-	-	1519	-	-	670	615	995	591	607	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	615	-	591	607	-
Stage 1	-	-	-	-	-	-	942	838	-	813	708	-
Stage 2	-	-	-	-	-	-	773	708	-	840	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.6	9.3	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	920	1563	-	-	1519	-	-	-
HCM Lane V/C Ratio	0.09	-	-	-	0.047	-	-	-
HCM Control Delay (s)	9.3	0	-	-	7.5	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	331	677	1219	755	517	488
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	331	0	1219	0	517	488
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	623	287	1348	603	577	2623
Arrive On Green	0.18	0.00	0.26	0.00	0.32	0.74
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	331	0	1219	0	517	488
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	8.7	0.0	33.3	0.0	27.8	4.1
Cycle Q Clear(g_c), s	8.7	0.0	33.3	0.0	27.8	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	623	287	1348	603	577	2623
V/C Ratio(X)	0.53	0.00	0.90	0.00	0.90	0.19
Avail Cap(c_a), veh/h	623	287	1348	603	577	2623
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	35.5	0.0	32.2	3.9
Incr Delay (d2), s/veh	3.2	0.0	10.2	0.0	19.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	18.2	0.0	16.6	2.0
LnGrp Delay(d),s/veh	40.3	0.0	45.6	0.0	51.3	4.0
LnGrp LOS	D		D		D	A
Approach Vol, veh/h	331		1219			1005
Approach Delay, s/veh	40.3		45.6			28.4
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		22.0		78.0			36.0	42.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		18.1		74.1			32.5	38.1
Max Q Clear Time (g_c+I1), s		10.7		6.1			29.8	35.3
Green Ext Time (p_c), s		0.7		21.5			0.5	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	489	0	151	0	2	1	40	264	1395	0	0	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.93			0.95			1.00	1.00			1.00
Flt Protected	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (prot)	1681	1600			1779			1770	3539			3539
Flt Permitted	0.95	0.97			1.00			0.95	1.00			1.00
Satd. Flow (perm)	1681	1600			1779			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	489	0	151	0	2	1	40	264	1395	0	0	537
RTOR Reduction (vph)	0	53	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	328	259	0	0	2	0	0	304	1395	0	0	537
Turn Type	Split	NA			NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	38.8	38.8			0.7			21.6	49.6			24.4
Effective Green, g (s)	38.8	38.8			0.7			21.6	49.6			24.4
Actuated g/C Ratio	0.39	0.39			0.01			0.22	0.50			0.24
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			3.0
Lane Grp Cap (vph)	652	620			12			382	1755			863
v/s Ratio Prot	c0.20	0.16			c0.00			0.17	c0.39			0.15
v/s Ratio Perm												
v/c Ratio	0.50	0.42			0.17			0.80	0.79			0.62
Uniform Delay, d1	23.3	22.3			49.4			37.1	21.0			33.7
Progression Factor	1.00	1.00			1.00			1.01	1.04			0.97
Incremental Delay, d2	2.8	2.1			6.5			10.9	2.6			1.4
Delay (s)	26.0	24.4			55.9			48.5	24.3			34.0
Level of Service	C	C			E			D	C			C
Approach Delay (s)		25.2			55.9				28.6			41.3
Approach LOS		C			E				C			D

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	210
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	210
RTOR Reduction (vph)	159
Lane Group Flow (vph)	51
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	24.4
Effective Green, g (s)	24.4
Actuated g/C Ratio	0.24
Clearance Time (s)	3.9
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	386
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.13
Uniform Delay, d1	29.5
Progression Factor	2.03
Incremental Delay, d2	0.2
Delay (s)	60.0
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	68	4	16	1537	14	52	28	615	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	68	4	16	1537	14	52	28	615	4

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1586	2368	310	2052	2363	776	470	619	0	0	1200	1551	0	0
Stage 1	777	777	-	1584	1584	-	-	-	-	-	-	-	-	-
Stage 2	809	1591	-	468	779	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	73	35	686	32	35	340	723	957	-	-	247	423	-	-
Stage 1	356	405	-	113	167	-	-	-	-	-	-	-	-	-
Stage 2	340	166	-	545	404	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	58	35	686	31	35	340	893	893	-	-	243	243	-	-
Mov Cap-2 Maneuver	137	73	-	92	119	-	-	-	-	-	-	-	-	-
Stage 1	356	405	-	113	167	-	-	-	-	-	-	-	-	-
Stage 2	272	166	-	531	404	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	18.2	0.1	3.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	893	-	-	686	340	243	-	-
HCM Lane V/C Ratio	0.022	-	-	0.026	0.2	0.329	-	-
HCM Control Delay (s)	9.1	-	-	10.4	18.2	26.9	-	-
HCM Lane LOS	A	-	-	B	C	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.7	1.4	-	-

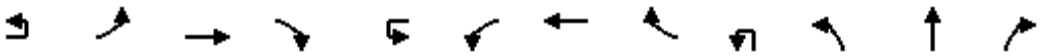
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	12	55	3	37	1418	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.92			0.91			1.00	1.00			1.00
Flt Protected	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1681	1607			1676			1770	3533			1770
Flt Permitted	0.76	0.91			0.96			0.95	1.00			0.95
Satd. Flow (perm)	1337	1490			1629			1770	3533			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	12	55	3	37	1418	17	31	51
RTOR Reduction (vph)	0	30	0	0	36	0	0	0	1	0	0	0
Lane Group Flow (vph)	94	60	0	0	44	0	0	40	1434	0	0	82
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			5.5	33.1			4.5
Effective Green, g (s)	26.2	26.2			26.2			5.5	33.1			4.5
Actuated g/C Ratio	0.35	0.35			0.35			0.07	0.44			0.06
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	467	520			569			129	1559			106
v/s Ratio Prot								0.02	c0.41			c0.05
v/s Ratio Perm	c0.07	0.04			0.03							
v/c Ratio	0.20	0.12			0.08			0.31	0.92			0.77
Uniform Delay, d1	17.1	16.5			16.3			33.0	19.7			34.7
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	1.0	0.5			0.3			6.1	10.3			41.3
Delay (s)	18.0	17.0			16.6			39.1	30.0			76.0
Level of Service	B	B			B			D	C			E
Approach Delay (s)		17.5			16.6				30.2			
Approach LOS		B			B				C			

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

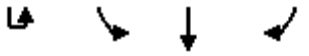
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	596	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	32.1	
Effective Green, g (s)	32.1	
Actuated g/C Ratio	0.43	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1503	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.40	
Uniform Delay, d1	14.8	
Progression Factor	1.00	
Incremental Delay, d2	0.8	
Delay (s)	15.6	
Level of Service	B	
Approach Delay (s)	22.8	
Approach LOS	C	

Intersection Summary



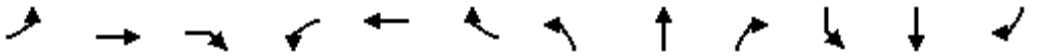
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	1	231	598	65	3	430	529	220	10	81	959	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	231	598	65	3	430	529	220	10	81	959	590
RTOR Reduction (vph)	0	0	0	46	0	0	0	110	0	0	0	225
Lane Group Flow (vph)	0	232	598	19	0	433	529	110	0	91	959	365
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		12.0	27.2	27.2		11.0	26.2	26.2		5.7	28.3	28.3
Effective Green, g (s)		12.0	27.2	27.2		11.0	26.2	26.2		5.7	28.3	28.3
Actuated g/C Ratio		0.13	0.30	0.30		0.12	0.29	0.29		0.06	0.31	0.31
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		233	1060	474		415	1021	456		111	1103	493
v/s Ratio Prot		c0.13	c0.17			0.13	0.15			0.05	c0.27	
v/s Ratio Perm				0.01				0.07				0.23
v/c Ratio		1.00	0.56	0.04		1.04	0.52	0.24		0.82	0.87	0.74
Uniform Delay, d1		39.4	26.8	22.6		39.9	27.0	24.7		42.0	29.5	28.0
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		57.4	2.2	0.2		55.9	1.9	1.2		35.7	7.5	5.9
Delay (s)		96.8	29.0	22.7		95.8	28.9	25.9		77.7	37.0	33.9
Level of Service		F	C	C		F	C	C		E	D	C
Approach Delay (s)			46.1				52.9				38.1	
Approach LOS			D				D				D	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	19.5
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	4	187	323	107
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	187	323	107
RTOR Reduction (vph)	0	0	0	75
Lane Group Flow (vph)	0	191	323	32
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		4.8	27.5	27.5
Effective Green, g (s)		4.8	27.5	27.5
Actuated g/C Ratio		0.05	0.30	0.30
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		181	1071	479
v/s Ratio Prot		c0.06	0.09	
v/s Ratio Perm				0.02
v/c Ratio		1.06	0.30	0.07
Uniform Delay, d1		43.0	24.3	22.5
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		82.3	0.2	0.1
Delay (s)		125.3	24.4	22.6
Level of Service		F	C	C
Approach Delay (s)			55.1	
Approach LOS			E	

Intersection Summary



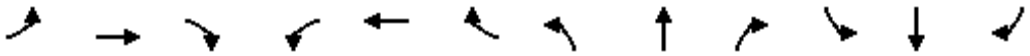
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	526	86	40	402	38	40	396	55	89	96	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.98		1.00	0.99			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1770	3465		1770	1839			3466			3291	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (perm)	1770	3465		1770	1839			3466			3291	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	99	526	86	40	402	38	40	396	55	89	96	111
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	71	0
Lane Group Flow (vph)	99	612	0	40	437	0	0	491	0	0	225	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	7.5	32.7		3.0	28.7			27.3			19.1	
Effective Green, g (s)	7.5	32.7		3.0	28.7			27.3			19.1	
Actuated g/C Ratio	0.06	0.26		0.02	0.23			0.22			0.15	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	106	906		42	422			756			502	
v/s Ratio Prot	c0.06	0.18		0.02	c0.24			c0.14			c0.07	
v/s Ratio Perm												
v/c Ratio	0.93	0.68		0.95	1.04			0.65			0.45	
Uniform Delay, d1	58.5	41.4		60.9	48.1			44.5			48.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	70.9	4.0		125.2	53.2			4.3			2.9	
Delay (s)	129.4	45.4		186.2	101.4			48.8			51.0	
Level of Service	F	D		F	F			D			D	
Approach Delay (s)		57.1			108.5			48.8			51.0	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	65.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	95	90	11
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.93		
Flt Protected	0.98		
Satd. Flow (prot)	1692		
Flt Permitted	0.98		
Satd. Flow (perm)	1692		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	95	90	11
RTOR Reduction (vph)	171	0	0
Lane Group Flow (vph)	25	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.12		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	209		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.12		
Uniform Delay, d1	48.7		
Progression Factor	1.00		
Incremental Delay, d2	1.2		
Delay (s)	49.9		
Level of Service	D		
Approach Delay (s)	49.9		
Approach LOS	D		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	486	106	129	512	92	201	355	354	111	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3444		1770	3458			3296			3405	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3444		1770	3458			3296			3405	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	486	106	129	512	92	201	355	354	111	144	39
RTOR Reduction (vph)	0	23	0	0	18	0	0	127	0	0	15	0
Lane Group Flow (vph)	32	569	0	129	586	0	0	783	0	0	279	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	2.9	19.2		6.9	23.2			21.1			16.5	
Effective Green, g (s)	2.9	19.2		6.9	23.2			21.1			16.5	
Actuated g/C Ratio	0.04	0.24		0.09	0.29			0.26			0.21	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	64	826		152	1002			869			702	
v/s Ratio Prot	0.02	c0.17		c0.07	0.17			c0.24			c0.08	
v/s Ratio Perm												
v/c Ratio	0.50	0.69		0.85	0.58			0.90			0.40	
Uniform Delay, d1	37.8	27.7		36.0	24.3			28.4			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	25.3	4.7		41.3	2.5			14.2			1.7	
Delay (s)	63.1	32.4		77.4	26.8			42.7			29.1	
Level of Service	E	C		E	C			D			C	
Approach Delay (s)		33.9			35.7			42.7			29.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	151	1	12	50	15	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	151	1	12	50	15	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	152	0	0	237	243	152	247	236	58
Stage 1	-	-	-	-	-	-	154	154	-	82	82	-
Stage 2	-	-	-	-	-	-	83	89	-	165	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1537	-	-	1429	-	-	717	659	894	707	665	1008
Stage 1	-	-	-	-	-	-	848	770	-	926	827	-
Stage 2	-	-	-	-	-	-	925	821	-	837	770	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1537	-	-	1429	-	-	710	652	894	684	658	1008
Mov Cap-2 Maneuver	-	-	-	-	-	-	710	652	-	684	658	-
Stage 1	-	-	-	-	-	-	847	769	-	925	820	-
Stage 2	-	-	-	-	-	-	915	814	-	815	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	9.2	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	876	1537	-	-	1429	-	-	723
HCM Lane V/C Ratio	0.029	0.001	-	-	0.008	-	-	0.017
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	116	20	28	26	0	18	0	37	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	116	20	28	26	0	18	0	37	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	26	0	0	136	0	0	208	208	126	227	218	26
Stage 1	-	-	-	-	-	-	126	126	-	82	82	-
Stage 2	-	-	-	-	-	-	82	82	-	145	136	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1588	-	-	1448	-	-	749	689	924	728	680	1050
Stage 1	-	-	-	-	-	-	878	792	-	926	827	-
Stage 2	-	-	-	-	-	-	926	827	-	858	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1588	-	-	1448	-	-	738	675	924	688	666	1050
Mov Cap-2 Maneuver	-	-	-	-	-	-	738	675	-	688	666	-
Stage 1	-	-	-	-	-	-	878	792	-	926	810	-
Stage 2	-	-	-	-	-	-	907	810	-	824	784	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.9	9.5	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	854	1588	-	-	1448	-	-	-
HCM Lane V/C Ratio	0.064	-	-	-	0.019	-	-	-
HCM Control Delay (s)	9.5	0	-	-	7.5	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	64	82	1360	623	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	82	1360	623	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1493	337	674	0	-	0
Stage 1	649	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	114	659	913	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	104	659	913	-	-	-
Mov Cap-2 Maneuver	104	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	348	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	913	-	659	-	-
HCM Lane V/C Ratio	0.09	-	0.097	-	-
HCM Control Delay (s)	9.3	-	11.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

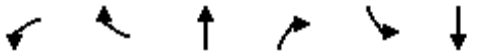
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	64	36	25	72	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	64	36	25	72	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	61	0	-	0	155	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1542	-	-	-	836	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	824	1020
Mov Cap-2 Maneuver	-	-	-	-	824	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1542	-	-	-	852
HCM Lane V/C Ratio	0.014	-	-	-	0.102
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	785	357	607	410	446	1111
Number	5	12	8	18	7	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	785	0	607	0	446	1111
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1070	492	818	366	612	2162
Arrive On Green	0.31	0.00	0.46	0.00	0.34	0.61
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	785	0	607	0	446	1111
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	20.4	0.0	14.0	0.0	22.0	17.8
Cycle Q Clear(g_c), s	20.4	0.0	14.0	0.0	22.0	17.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1070	492	818	366	612	2162
V/C Ratio(X)	0.73	0.00	0.74	0.00	0.73	0.51
Avail Cap(c_a), veh/h	1070	492	818	366	612	2162
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	24.5	0.0	28.7	11.0
Incr Delay (d2), s/veh	4.5	0.0	6.0	0.0	7.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	7.4	0.0	12.0	8.9
LnGrp Delay(d),s/veh	35.2	0.0	30.5	0.0	36.1	11.9
LnGrp LOS	D		C		D	B
Approach Vol, veh/h	785		607			1557
Approach Delay, s/veh	35.2		30.5			18.8
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.0		65.0			38.0	27.0
Change Period (Y+Rc), s		3.9		3.9			3.5	3.9
Max Green Setting (Gmax), s		31.1		61.1			34.5	23.1
Max Q Clear Time (g_c+I1), s		22.4		19.8			24.0	16.0
Green Ext Time (p_c), s		2.2		18.3			1.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	348	0	356	10	7	12	28	182	700	0	0	1491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			0.95
Frt	1.00	0.86			0.94			1.00	1.00			1.00
Flt Protected	0.95	1.00			0.98			0.95	1.00			1.00
Satd. Flow (prot)	1681	1521			1729			1770	3539			3539
Flt Permitted	0.95	1.00			0.77			0.95	1.00			1.00
Satd. Flow (perm)	1681	1521			1352			1770	3539			3539
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	348	0	356	10	7	12	28	182	700	0	0	1491
RTOR Reduction (vph)	0	177	0	0	12	0	0	0	0	0	0	0
Lane Group Flow (vph)	313	214	0	0	17	0	0	210	700	0	0	1491
Turn Type	Split	NA		Perm	NA		Prot	Prot	NA			NA
Protected Phases	6	6			5		3	3	8			4
Permitted Phases				5								
Actuated Green, G (s)	23.5	23.5			3.5			13.4	62.1			45.1
Effective Green, g (s)	23.5	23.5			3.5			13.4	62.1			45.1
Actuated g/C Ratio	0.24	0.24			0.04			0.13	0.62			0.45
Clearance Time (s)	3.5	3.5			3.5			3.6	3.9			3.9
Lane Grp Cap (vph)	395	357			47			237	2197			1596
v/s Ratio Prot	c0.19	0.14						c0.12	0.20			c0.42
v/s Ratio Perm					c0.01							
v/c Ratio	0.79	0.60			0.37			0.89	0.32			0.93
Uniform Delay, d1	36.0	34.0			47.2			42.5	9.0			26.0
Progression Factor	1.00	1.00			1.00			1.01	1.03			0.74
Incremental Delay, d2	15.0	7.2			21.0			35.1	0.4			9.7
Delay (s)	50.9	41.3			68.2			77.9	9.6			29.0
Level of Service	D	D			E			E	A			C
Approach Delay (s)		45.6			68.2				25.4			24.8
Approach LOS		D			E				C			C

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Volume (vph)	420
Ideal Flow (vphpl)	1900
Total Lost time (s)	3.9
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	420
RTOR Reduction (vph)	124
Lane Group Flow (vph)	296
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	45.1
Effective Green, g (s)	45.1
Actuated g/C Ratio	0.45
Clearance Time (s)	3.9
Lane Grp Cap (vph)	713
v/s Ratio Prot	
v/s Ratio Perm	0.19
v/c Ratio	0.42
Uniform Delay, d1	18.5
Progression Factor	0.45
Incremental Delay, d2	1.4
Delay (s)	9.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	23	0	0	41	50	17	828	19	48	77	1739	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	-	75	-	-	-	90	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	41	50	17	828	19	48	77	1739	19

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2547	2980	879	2092	2980	424	1306	1758	0	0	659	847	0	0
Stage 1	1999	1999	-	972	972	-	-	-	-	-	-	-	-	-
Stage 2	548	981	-	1120	2008	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	13	14	291	30	14	579	211	352	-	-	549	786	-	-
Stage 1	62	103	-	271	329	-	-	-	-	-	-	-	-	-
Stage 2	488	326	-	220	102	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	12	14	291	28	14	579	219	219	-	-	651	651	-	-
Mov Cap-2 Maneuver	50	68	-	94	31	-	-	-	-	-	-	-	-	-
Stage 1	62	103	-	271	329	-	-	-	-	-	-	-	-	-
Stage 2	453	326	-	203	102	-	-	-	-	-	-	-	-	-

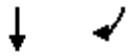
Approach	EB	WB	NB	SB
HCM Control Delay, s	18.4	11.7	2.1	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	219	-	-	291	579	651	-	-
HCM Lane V/C Ratio	0.306	-	-	0.079	0.071	0.192	-	-
HCM Control Delay (s)	28.5	-	-	18.4	11.7	11.8	-	-
HCM Lane LOS	D	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	1.2	-	-	0.3	0.2	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	21	42	7	73	681	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1681	1577			1723			1770	3530			1770
Flt Permitted	0.70	0.92			0.87			0.95	1.00			0.95
Satd. Flow (perm)	1247	1461			1530			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	21	42	7	73	681	12	68	50
RTOR Reduction (vph)	0	69	0	0	29	0	0	0	1	0	0	0
Lane Group Flow (vph)	196	119	0	0	66	0	0	80	692	0	0	118
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	27.2	27.2			27.2			4.5	39.1			12.5
Effective Green, g (s)	27.2	27.2			27.2			4.5	39.1			12.5
Actuated g/C Ratio	0.30	0.30			0.30			0.05	0.43			0.14
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	376	441			462			88	1533			245
v/s Ratio Prot								c0.05	0.20			0.07
v/s Ratio Perm	c0.16	0.08			0.04							
v/c Ratio	0.52	0.27			0.14			0.91	0.45			0.48
Uniform Delay, d1	26.0	23.9			22.9			42.5	17.9			35.8
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	5.1	1.5			0.6			73.3	1.0			6.6
Delay (s)	31.1	25.4			23.5			115.8	18.9			42.4
Level of Service	C	C			C			F	B			D
Approach Delay (s)		28.3			23.5				28.9			
Approach LOS		C			C				C			

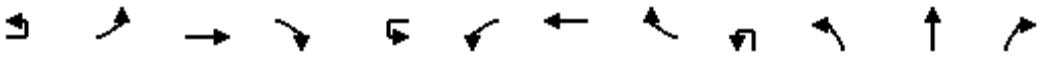
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



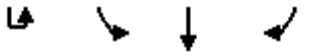
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1652	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3507	
Flt Permitted	1.00	
Satd. Flow (perm)	3507	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1652	105
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1752	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	47.1	
Effective Green, g (s)	47.1	
Actuated g/C Ratio	0.52	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1835	
v/s Ratio Prot	c0.50	
v/s Ratio Perm		
v/c Ratio	0.95	
Uniform Delay, d1	20.4	
Progression Factor	1.00	
Incremental Delay, d2	12.7	
Delay (s)	33.2	
Level of Service	C	
Approach Delay (s)	33.7	
Approach LOS	C	

Intersection Summary



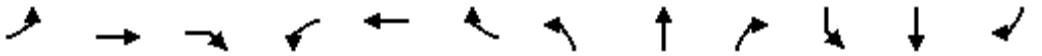
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Volume (vph)	9	197	426	72	8	486	671	246	34	78	495	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.95	1.00		1.00	0.95	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1770	3539	1583		3433	3539	1583		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	197	426	72	8	486	671	246	34	78	495	351
RTOR Reduction (vph)	0	0	0	52	0	0	0	171	0	0	0	254
Lane Group Flow (vph)	0	206	426	20	0	494	671	75	0	112	495	97
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm
Protected Phases	1	1	6		5	5	2		3	3	8	
Permitted Phases				6				2				8
Actuated Green, G (s)		14.3	27.2	27.2		15.0	27.9	27.9		7.1	27.5	27.5
Effective Green, g (s)		14.3	27.2	27.2		15.0	27.9	27.9		7.1	27.5	27.5
Actuated g/C Ratio		0.14	0.27	0.27		0.15	0.28	0.28		0.07	0.28	0.28
Clearance Time (s)		5.0	4.8	4.8		5.0	4.8	4.8		3.9	5.5	5.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		253	962	430		514	987	441		125	973	435
v/s Ratio Prot		0.12	0.12			c0.14	c0.19			0.06	0.14	
v/s Ratio Perm				0.01				0.05				0.06
v/c Ratio		0.81	0.44	0.05		0.96	0.68	0.17		0.90	0.51	0.22
Uniform Delay, d1		41.6	30.1	26.8		42.2	32.1	27.3		46.1	30.6	28.0
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		17.9	1.5	0.2		29.9	3.8	0.8		49.6	0.4	0.3
Delay (s)		59.4	31.6	27.0		72.1	35.8	28.1		95.7	31.0	28.2
Level of Service		E	C	C		E	D	C		F	C	C
Approach Delay (s)			39.3				47.2				37.5	
Approach LOS			D				D				D	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Volume (vph)	21	325	1069	291
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	5.7
Lane Util. Factor		0.97	0.95	1.00
Frt		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00
Satd. Flow (prot)		3433	3539	1583
Flt Permitted		0.95	1.00	1.00
Satd. Flow (perm)		3433	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	325	1069	291
RTOR Reduction (vph)	0	0	0	93
Lane Group Flow (vph)	0	346	1069	198
Turn Type	Prot	Prot	NA	Perm
Protected Phases	7	7	4	
Permitted Phases				4
Actuated Green, G (s)		10.8	31.3	31.3
Effective Green, g (s)		10.8	31.3	31.3
Actuated g/C Ratio		0.11	0.31	0.31
Clearance Time (s)		4.2	5.7	5.7
Vehicle Extension (s)		3.0	3.0	3.0
Lane Grp Cap (vph)		370	1107	495
v/s Ratio Prot		c0.10	c0.30	
v/s Ratio Perm				0.13
v/c Ratio		0.94	0.97	0.40
Uniform Delay, d1		44.3	33.8	27.0
Progression Factor		1.00	1.00	1.00
Incremental Delay, d2		30.5	19.1	0.5
Delay (s)		74.7	52.9	27.5
Level of Service		E	D	C
Approach Delay (s)			53.0	
Approach LOS			D	

Intersection Summary



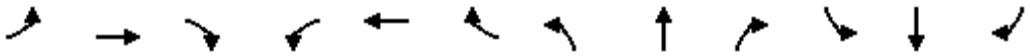
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	557	140	67	491	47	38	118	73	222	252	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3433		1770	1838			3342			3338	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3433		1770	1838			3342			3338	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	557	140	67	491	47	38	118	73	222	252	177
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	27	0
Lane Group Flow (vph)	64	697	0	67	536	0	0	229	0	0	624	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	3	8		7	4		6	6		5	5	
Permitted Phases												
Actuated Green, G (s)	4.5	38.7		9.0	43.7			14.3			40.1	
Effective Green, g (s)	4.5	38.7		9.0	43.7			14.3			40.1	
Actuated g/C Ratio	0.03	0.27		0.06	0.30			0.10			0.28	
Clearance Time (s)	3.5	6.3		4.0	6.3			5.7			5.9	
Lane Grp Cap (vph)	54	916		109	553			329			923	
v/s Ratio Prot	c0.04	0.20		0.04	c0.29			c0.07			c0.19	
v/s Ratio Perm												
v/c Ratio	1.19	0.76		0.61	0.97			0.70			0.68	
Uniform Delay, d1	70.2	48.9		66.3	50.0			63.2			46.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	181.4	5.9		23.2	31.4			11.6			4.0	
Delay (s)	251.6	54.8		89.5	81.3			74.8			50.6	
Level of Service	F	D		F	F			E			D	
Approach Delay (s)		71.4			82.2			74.8			50.6	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	68.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NWR2
Lane Configurations			
Volume (vph)	57	59	18
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.5		
Lane Util. Factor	1.00		
Frt	0.92		
Flt Protected	0.98		
Satd. Flow (prot)	1682		
Flt Permitted	0.98		
Satd. Flow (perm)	1682		
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	57	59	18
RTOR Reduction (vph)	120	0	0
Lane Group Flow (vph)	14	0	0
Turn Type	Prot		
Protected Phases	2		
Permitted Phases			
Actuated Green, G (s)	15.5		
Effective Green, g (s)	15.5		
Actuated g/C Ratio	0.11		
Clearance Time (s)	5.5		
Lane Grp Cap (vph)	179		
v/s Ratio Prot	c0.01		
v/s Ratio Perm			
v/c Ratio	0.08		
Uniform Delay, d1	58.3		
Progression Factor	1.00		
Incremental Delay, d2	0.9		
Delay (s)	59.2		
Level of Service	E		
Approach Delay (s)	59.2		
Approach LOS	E		

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	447	124	374	666	57	137	105	178	49	199	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frt	1.00	0.97		1.00	0.99			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1770	3424		1770	3497			3261			3425	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (perm)	1770	3424		1770	3497			3261			3425	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	447	124	374	666	57	137	105	178	49	199	48
RTOR Reduction (vph)	0	32	0	0	8	0	0	141	0	0	20	0
Lane Group Flow (vph)	37	539	0	374	715	0	0	279	0	0	276	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Effective Green, g (s)	5.9	16.8		13.9	24.8			16.5			16.5	
Actuated g/C Ratio	0.07	0.21		0.17	0.31			0.21			0.21	
Clearance Time (s)	4.1	4.6		4.1	4.6			3.9			3.7	
Lane Grp Cap (vph)	130	719		307	1084			672			706	
v/s Ratio Prot	0.02	c0.16		c0.21	0.20			c0.09			c0.08	
v/s Ratio Perm												
v/c Ratio	0.28	0.75		1.22	0.66			0.41			0.39	
Uniform Delay, d1	35.1	29.6		33.0	23.9			27.6			27.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.4	7.1		124.1	3.2			1.9			1.6	
Delay (s)	40.5	36.7		157.2	27.1			29.4			29.0	
Level of Service	D	D		F	C			C			C	
Approach Delay (s)		36.9			71.4			29.4			29.0	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.3
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	293	1	37	140	22	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	293	1	37	140	22	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	162	0	0	294	0	0	531	536	294	551	525	151
Stage 1	-	-	-	-	-	-	300	300	-	225	225	-
Stage 2	-	-	-	-	-	-	231	236	-	326	300	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1417	-	-	1268	-	-	459	451	745	445	458	895
Stage 1	-	-	-	-	-	-	709	666	-	778	718	-
Stage 2	-	-	-	-	-	-	772	710	-	687	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1417	-	-	1268	-	-	439	435	745	402	442	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	439	435	-	402	442	-
Stage 1	-	-	-	-	-	-	707	664	-	776	695	-
Stage 2	-	-	-	-	-	-	736	687	-	636	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	11.1	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1417	-	-	1268	-	-	431
HCM Lane V/C Ratio	0.099	0.002	-	-	0.029	-	-	0.116
HCM Control Delay (s)	11.1	7.5	0	-	7.9	0	-	14.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	226	31	72	85	0	25	0	71	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	226	31	72	85	0	25	0	71	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	85	0	0	257	0	0	471	471	242	506	486	85
Stage 1	-	-	-	-	-	-	242	242	-	229	229	-
Stage 2	-	-	-	-	-	-	229	229	-	277	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1512	-	-	1308	-	-	503	491	797	477	481	974
Stage 1	-	-	-	-	-	-	762	705	-	774	715	-
Stage 2	-	-	-	-	-	-	774	715	-	729	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1512	-	-	1308	-	-	481	463	797	415	453	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	481	463	-	415	453	-
Stage 1	-	-	-	-	-	-	762	705	-	774	674	-
Stage 2	-	-	-	-	-	-	729	674	-	664	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.6	11.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1512	-	-	1308	-	-	-
HCM Lane V/C Ratio	0.141	-	-	-	0.055	-	-	-
HCM Control Delay (s)	11.2	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	245	145	858	1434	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	245	145	858	1434	205

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2256	820	1639	0	-	0
Stage 1	1537	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	35	318	391	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	22	318	391	-	-	-
Mov Cap-2 Maneuver	22	-	-	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	279	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.9	2.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	391	-	318	-	-
HCM Lane V/C Ratio	0.371	-	0.77	-	-
HCM Control Delay (s)	19.5	-	45.9	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	1.7	-	6.1	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	37	74	107	59	185	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	74	107	59	185	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	166	0	-	0	285	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1412	-	-	-	705	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1412	-	-	-	686	911
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	725
HCM Lane V/C Ratio	0.026	-	-	-	0.326
HCM Control Delay (s)	7.6	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	12	55	3	41	1414	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.92			0.91			1.00	1.00			1.00
Flt Protected	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1681	1607			1676			1770	3533			1770
Flt Permitted	0.76	0.91			0.96			0.95	1.00			0.95
Satd. Flow (perm)	1337	1490			1629			1770	3533			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	12	55	3	41	1414	17	31	51
RTOR Reduction (vph)	0	30	0	0	36	0	0	0	1	0	0	0
Lane Group Flow (vph)	94	60	0	0	44	0	0	44	1430	0	0	82
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	26.2	26.2			26.2			5.5	33.1			4.5
Effective Green, g (s)	26.2	26.2			26.2			5.5	33.1			4.5
Actuated g/C Ratio	0.35	0.35			0.35			0.07	0.44			0.06
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	467	520			569			129	1559			106
v/s Ratio Prot								0.02	c0.40			c0.05
v/s Ratio Perm	c0.07	0.04			0.03							
v/c Ratio	0.20	0.12			0.08			0.34	0.92			0.77
Uniform Delay, d1	17.1	16.5			16.3			33.0	19.7			34.7
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	1.0	0.5			0.3			7.1	10.1			41.3
Delay (s)	18.0	17.0			16.6			40.1	29.7			76.0
Level of Service	B	B			B			D	C			E
Approach Delay (s)		17.5			16.6				30.0			
Approach LOS		B			B				C			

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	596	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	32.1	
Effective Green, g (s)	32.1	
Actuated g/C Ratio	0.43	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1503	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.40	
Uniform Delay, d1	14.8	
Progression Factor	1.00	
Incremental Delay, d2	0.8	
Delay (s)	15.6	
Level of Service	B	
Approach Delay (s)	22.8	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	151	1	12	50	19	2	0	23	10	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	151	1	12	50	19	2	0	23	10	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	152	0	0	239	247	152	249	238	60
Stage 1	-	-	-	-	-	-	154	154	-	84	84	-
Stage 2	-	-	-	-	-	-	85	93	-	165	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1532	-	-	1429	-	-	715	655	894	705	663	1005
Stage 1	-	-	-	-	-	-	848	770	-	924	825	-
Stage 2	-	-	-	-	-	-	923	818	-	837	770	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1532	-	-	1429	-	-	708	648	894	682	656	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	708	648	-	682	656	-
Stage 1	-	-	-	-	-	-	847	769	-	923	818	-
Stage 2	-	-	-	-	-	-	913	811	-	815	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	9.2	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	876	1532	-	-	1429	-	-	721
HCM Lane V/C Ratio	0.029	0.001	-	-	0.008	-	-	0.017
HCM Control Delay (s)	9.2	7.4	0	-	7.5	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	64	78	1360	628	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	78	1360	628	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1487	337	674	0	-	0
Stage 1	651	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	115	659	913	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	659	913	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	353	-	-	-	-	-

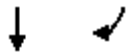
Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	913	-	659	-	-
HCM Lane V/C Ratio	0.085	-	0.097	-	-
HCM Control Delay (s)	9.3	-	11.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	21	42	7	81	673	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1681	1577			1723			1770	3530			1770
Flt Permitted	0.70	0.92			0.87			0.95	1.00			0.95
Satd. Flow (perm)	1247	1461			1530			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	21	42	7	81	673	12	68	50
RTOR Reduction (vph)	0	69	0	0	29	0	0	0	1	0	0	0
Lane Group Flow (vph)	196	119	0	0	66	0	0	88	684	0	0	118
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		6			2		3	3	8		7	7
Permitted Phases	6			2								
Actuated Green, G (s)	27.2	27.2			27.2			4.5	39.1			12.5
Effective Green, g (s)	27.2	27.2			27.2			4.5	39.1			12.5
Actuated g/C Ratio	0.30	0.30			0.30			0.05	0.43			0.14
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	376	441			462			88	1533			245
v/s Ratio Prot								c0.05	0.19			0.07
v/s Ratio Perm	c0.16	0.08			0.04							
v/c Ratio	0.52	0.27			0.14			1.00	0.45			0.48
Uniform Delay, d1	26.0	23.9			22.9			42.8	17.9			35.8
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	5.1	1.5			0.6			95.9	0.9			6.6
Delay (s)	31.1	25.4			23.5			138.7	18.8			42.4
Level of Service	C	C			C			F	B			D
Approach Delay (s)		28.3			23.5				32.4			
Approach LOS		C			C				C			

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1652	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3507	
Flt Permitted	1.00	
Satd. Flow (perm)	3507	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1652	105
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1752	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	47.1	
Effective Green, g (s)	47.1	
Actuated g/C Ratio	0.52	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1835	
v/s Ratio Prot	c0.50	
v/s Ratio Perm		
v/c Ratio	0.95	
Uniform Delay, d1	20.4	
Progression Factor	1.00	
Incremental Delay, d2	12.7	
Delay (s)	33.2	
Level of Service	C	
Approach Delay (s)	33.7	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	293	1	37	140	30	12	1	52	38	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	293	1	37	140	30	12	1	52	38	7	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	294	0	0	535	544	294	555	529	155
Stage 1	-	-	-	-	-	-	300	300	-	229	229	-
Stage 2	-	-	-	-	-	-	235	244	-	326	300	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1407	-	-	1268	-	-	456	446	745	442	455	891
Stage 1	-	-	-	-	-	-	709	666	-	774	715	-
Stage 2	-	-	-	-	-	-	768	704	-	687	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1268	-	-	436	430	745	399	439	891
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	430	-	399	439	-
Stage 1	-	-	-	-	-	-	707	664	-	772	692	-
Stage 2	-	-	-	-	-	-	732	681	-	636	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	11.1	14.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	652	1407	-	-	1268	-	-	428
HCM Lane V/C Ratio	0.1	0.002	-	-	0.029	-	-	0.117
HCM Control Delay (s)	11.1	7.6	0	-	7.9	0	-	14.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	245	137	858	1455	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	245	137	858	1455	185

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2251	820	1640	0	-	0
Stage 1	1548	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	35	318	391	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	318	391	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	294	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.9	2.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	391	-	318	-	-
HCM Lane V/C Ratio	0.35	-	0.77	-	-
HCM Control Delay (s)	19.1	-	45.9	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	1.5	-	6.1	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	37	74	107	59	185	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	74	107	59	185	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	166	0	-	0	285	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1412	-	-	-	705	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1412	-	-	-	686	911
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	725
HCM Lane V/C Ratio	0.026	-	-	-	0.327
HCM Control Delay (s)	7.6	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	13	56	3	36	1247	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.92			0.91			1.00	1.00			1.00
Flt Protected	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1681	1607			1678			1770	3532			1770
Flt Permitted	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (perm)	1681	1607			1678			1770	3532			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	13	56	3	36	1247	17	31	51
RTOR Reduction (vph)	0	34	0	0	43	0	0	0	1	0	0	0
Lane Group Flow (vph)	94	56	0	0	39	0	0	39	1263	0	0	82
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	Prot
Protected Phases	6	6		2	2		3	3	8		7	7
Permitted Phases												
Actuated Green, G (s)	25.0	25.0			25.4			6.5	39.1			5.5
Effective Green, g (s)	25.0	25.0			25.4			6.5	39.1			5.5
Actuated g/C Ratio	0.23	0.23			0.23			0.06	0.36			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	382	365			387			104	1255			88
v/s Ratio Prot	c0.06	0.03			c0.02			0.02	c0.36			c0.05
v/s Ratio Perm												
v/c Ratio	0.25	0.15			0.10			0.38	1.01			0.93
Uniform Delay, d1	34.8	34.0			33.3			49.8	35.5			52.1
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	1.5	0.9			0.5			10.0	27.0			78.5
Delay (s)	36.3	34.9			33.8			59.8	62.5			130.6
Level of Service	D	C			C			E	E			F
Approach Delay (s)		35.6			33.8				62.4			
Approach LOS		D			C				E			

Intersection Summary			
HCM 2000 Control Delay	52.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

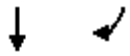
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	598	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	38.1	
Effective Green, g (s)	38.1	
Actuated g/C Ratio	0.35	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1217	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.49	
Uniform Delay, d1	28.3	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	29.7	
Level of Service	C	
Approach Delay (s)	41.8	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	24	45	7	73	676	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1681	1575			1723			1770	3530			1770
Flt Permitted	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (perm)	1681	1575			1723			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	24	45	7	73	676	12	68	50
RTOR Reduction (vph)	0	54	0	0	22	0	0	0	1	0	0	0
Lane Group Flow (vph)	198	132	0	0	79	0	0	80	687	0	0	118
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	Prot
Protected Phases	6	6		2	2		3	3	8		7	7
Permitted Phases												
Actuated Green, G (s)	25.2	25.2			26.2			6.5	48.1			15.5
Effective Green, g (s)	25.2	25.2			26.2			6.5	48.1			15.5
Actuated g/C Ratio	0.19	0.19			0.20			0.05	0.37			0.12
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	325	305			347			88	1306			211
v/s Ratio Prot	c0.12	0.08			c0.05			c0.05	0.19			0.07
v/s Ratio Perm												
v/c Ratio	0.61	0.43			0.23			0.91	0.53			0.56
Uniform Delay, d1	47.9	46.1			43.4			61.5	32.0			54.0
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	8.2	4.4			1.5			73.3	1.5			10.3
Delay (s)	56.1	50.5			44.9			134.7	33.5			64.3
Level of Service	E	D			D			F	C			E
Approach Delay (s)		53.4			44.9				44.1			
Approach LOS		D			D				D			

Intersection Summary			
HCM 2000 Control Delay	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1436	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3503	
Flt Permitted	1.00	
Satd. Flow (perm)	3503	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1436	105
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	1537	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	57.1	
Effective Green, g (s)	57.1	
Actuated g/C Ratio	0.44	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1538	
v/s Ratio Prot	c0.44	
v/s Ratio Perm		
v/c Ratio	1.00	
Uniform Delay, d1	36.4	
Progression Factor	1.00	
Incremental Delay, d2	22.8	
Delay (s)	59.2	
Level of Service	E	
Approach Delay (s)	59.6	
Approach LOS	E	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	124	14	46	13	12	55	3	37	1418	17	31	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.92			0.91			1.00	1.00			1.00
Flt Protected	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (prot)	1681	1607			1676			1770	3533			1770
Flt Permitted	0.95	0.98			0.99			0.95	1.00			0.95
Satd. Flow (perm)	1681	1607			1676			1770	3533			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	14	46	13	12	55	3	37	1418	17	31	51
RTOR Reduction (vph)	0	30	0	0	43	0	0	0	1	0	0	0
Lane Group Flow (vph)	94	60	0	0	37	0	0	40	1434	0	0	82
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	Prot
Protected Phases	6	6		2	2		3	3	8		7	7
Permitted Phases												
Actuated Green, G (s)	25.2	25.2			27.2			6.5	51.1			6.5
Effective Green, g (s)	25.2	25.2			27.2			6.5	51.1			6.5
Actuated g/C Ratio	0.20	0.20			0.22			0.05	0.41			0.05
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	338	323			364			92	1444			92
v/s Ratio Prot	c0.06	0.04			c0.02			0.02	c0.41			c0.05
v/s Ratio Perm												
v/c Ratio	0.28	0.18			0.10			0.43	0.99			0.89
Uniform Delay, d1	42.2	41.4			39.1			57.5	36.8			58.9
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	2.0	1.3			0.6			14.3	22.2			67.4
Delay (s)	44.2	42.6			39.7			71.7	58.9			126.3
Level of Service	D	D			D			E	E			F
Approach Delay (s)		43.5			39.7				59.3			
Approach LOS		D			D				E			

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

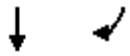
Movement	SBT	SBR
Lane Configurations		
Volume (vph)	572	29
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3514	
Flt Permitted	1.00	
Satd. Flow (perm)	3514	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	572	29
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	598	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	51.1	
Effective Green, g (s)	51.1	
Actuated g/C Ratio	0.41	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1436	
v/s Ratio Prot	0.17	
v/s Ratio Perm		
v/c Ratio	0.42	
Uniform Delay, d1	26.3	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	27.2	
Level of Service	C	
Approach Delay (s)	39.1	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	242	19	123	32	21	42	7	73	681	12	68	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Util. Factor	0.95	0.95			1.00			1.00	0.95			1.00
Frt	1.00	0.90			0.94			1.00	1.00			1.00
Flt Protected	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (prot)	1681	1575			1723			1770	3530			1770
Flt Permitted	0.95	0.99			0.98			0.95	1.00			0.95
Satd. Flow (perm)	1681	1575			1723			1770	3530			1770
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	19	123	32	21	42	7	73	681	12	68	50
RTOR Reduction (vph)	0	45	0	0	18	0	0	0	1	0	0	0
Lane Group Flow (vph)	198	141	0	0	77	0	0	80	692	0	0	118
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	Prot
Protected Phases	6	6		2	2		3	3	8		7	7
Permitted Phases												
Actuated Green, G (s)	25.6	25.6			26.8			7.5	69.1			18.5
Effective Green, g (s)	25.6	25.6			26.8			7.5	69.1			18.5
Actuated g/C Ratio	0.17	0.17			0.17			0.05	0.45			0.12
Clearance Time (s)	3.8	3.8			3.8			3.5	3.9			3.5
Lane Grp Cap (vph)	277	260			297			85	1573			211
v/s Ratio Prot	c0.12	0.09			c0.04			c0.05	0.20			0.07
v/s Ratio Perm												
v/c Ratio	0.71	0.54			0.26			0.94	0.44			0.56
Uniform Delay, d1	61.2	59.3			55.5			73.5	29.6			64.4
Progression Factor	1.00	1.00			1.00			1.00	1.00			1.00
Incremental Delay, d2	14.6	7.9			2.1			82.4	0.9			10.3
Delay (s)	75.9	67.2			57.6			155.9	30.5			74.7
Level of Service	E	E			E			F	C			E
Approach Delay (s)		71.7			57.6				43.5			
Approach LOS		E			E				D			

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Volume (vph)	1652	105
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.9	
Lane Util. Factor	0.95	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3507	
Flt Permitted	1.00	
Satd. Flow (perm)	3507	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	1652	105
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	1754	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	80.1	
Effective Green, g (s)	80.1	
Actuated g/C Ratio	0.52	
Clearance Time (s)	3.9	
Lane Grp Cap (vph)	1812	
v/s Ratio Prot	c0.50	
v/s Ratio Perm		
v/c Ratio	0.97	
Uniform Delay, d1	36.2	
Progression Factor	1.00	
Incremental Delay, d2	14.8	
Delay (s)	51.0	
Level of Service	D	
Approach Delay (s)	52.5	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	90	82	39	1264	82	601
v/c Ratio	0.25	0.23	0.19	0.38	1.01	0.93	0.49
Control Delay	36.9	20.9	15.2	60.5	62.8	132.0	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	20.9	15.2	60.5	62.8	132.0	29.8
Queue Length 50th (ft)	57	27	14	27	~471	59	173
Queue Length 95th (ft)	107	72	54	63	#631	#156	227
Internal Link Dist (ft)		110	1		2510		105
Turn Bay Length (ft)	85			145		115	
Base Capacity (vph)	382	399	430	104	1256	88	1220
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.23	0.19	0.38	1.01	0.93	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	198	186	101	80	688	118	1541
v/c Ratio	0.61	0.52	0.27	0.91	0.53	0.56	1.00
Control Delay	56.9	35.4	33.7	134.3	33.7	65.0	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	35.4	33.7	134.3	33.7	65.0	59.1
Queue Length 50th (ft)	162	93	52	68	236	95	669
Queue Length 95th (ft)	251	177	105	#169	297	161	#849
Internal Link Dist (ft)		110	1		2510		105
Turn Bay Length (ft)	85			145		115	
Base Capacity (vph)	325	359	369	88	1306	211	1542
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.52	0.27	0.91	0.53	0.56	1.00

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	90	80	40	1435	82	601
v/c Ratio	0.28	0.25	0.20	0.43	0.99	0.89	0.42
Control Delay	44.9	27.3	17.2	72.4	59.2	126.4	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	27.3	17.2	72.4	59.2	126.4	27.2
Queue Length 50th (ft)	68	36	16	32	599	67	178
Queue Length 95th (ft)	123	88	59	71	#771	#168	228
Internal Link Dist (ft)		110	1		2510		105
Turn Bay Length (ft)	85			145		115	
Base Capacity (vph)	338	354	407	92	1444	92	1439
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.25	0.20	0.43	0.99	0.89	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	198	186	95	80	693	118	1757
v/c Ratio	0.71	0.61	0.30	0.94	0.44	0.56	0.97
Control Delay	76.5	51.6	45.6	153.4	30.7	75.4	50.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	51.6	45.6	153.4	30.7	75.4	50.9
Queue Length 50th (ft)	202	132	65	82	251	115	884
Queue Length 95th (ft)	#303	226	123	#196	307	186	#1073
Internal Link Dist (ft)		110	1		2510		105
Turn Bay Length (ft)	85			145		115	
Base Capacity (vph)	277	305	315	85	1573	211	1815
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.61	0.30	0.94	0.44	0.56	0.97

Intersection Summary

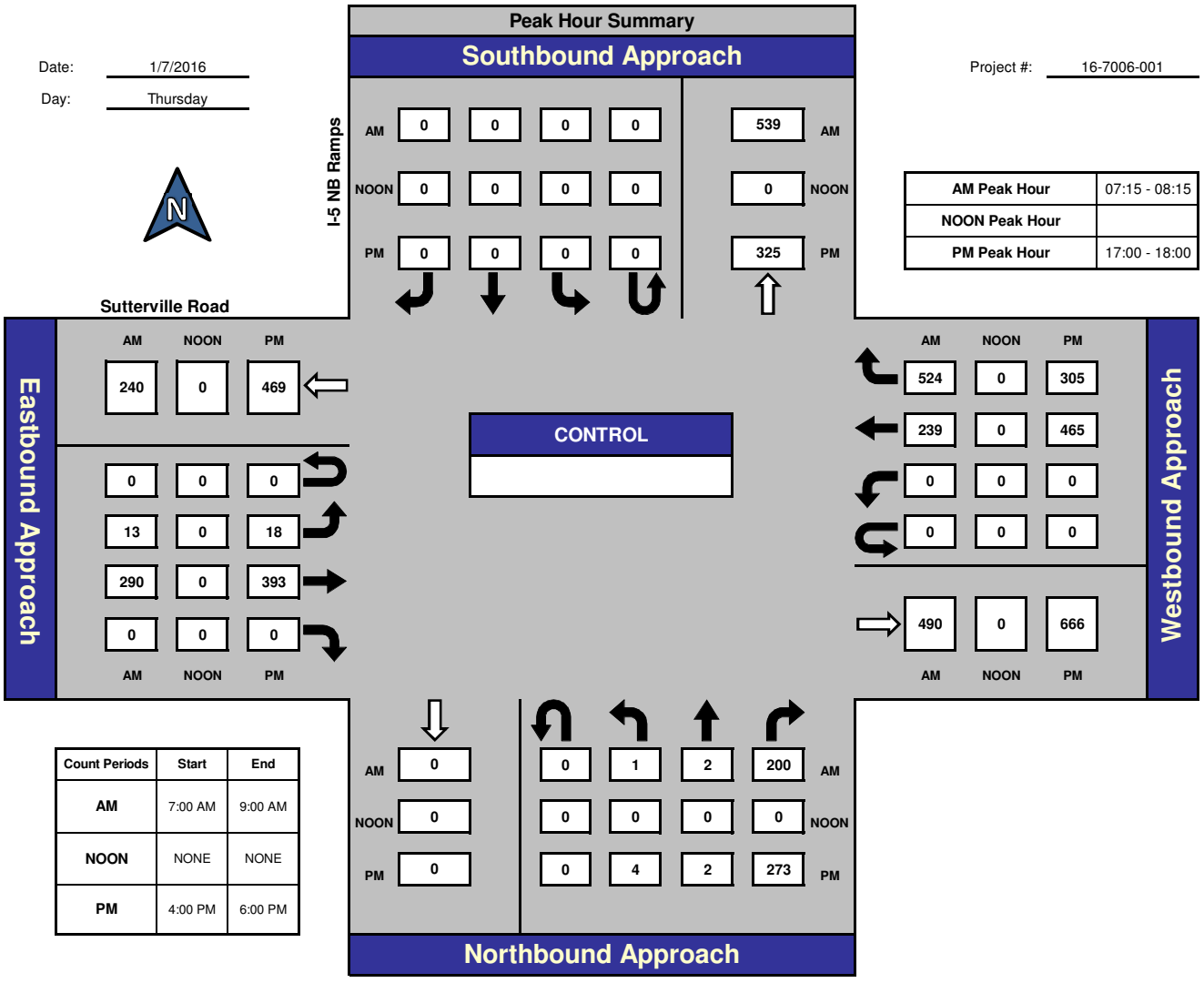
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

I-5 NB Ramps & Sutterville Road

Date: 1/7/2016

Day: Thursday

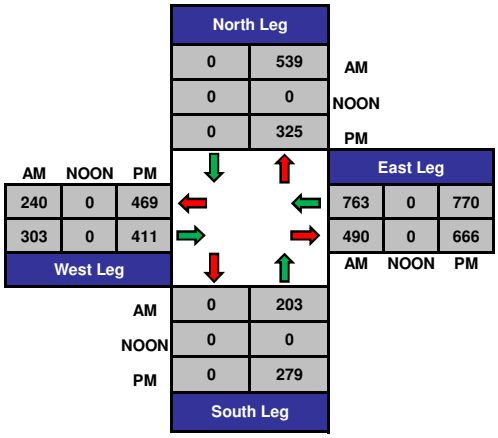
Project #: 16-7006-001



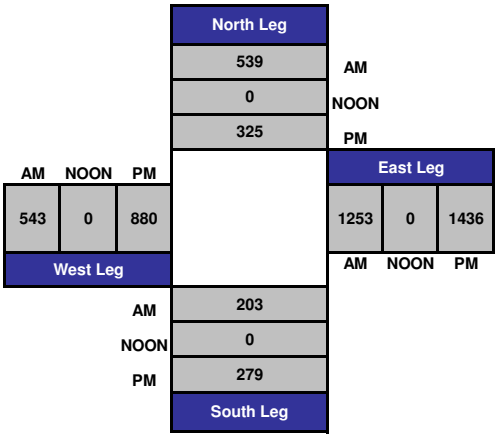
AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	17:00 - 18:00

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg

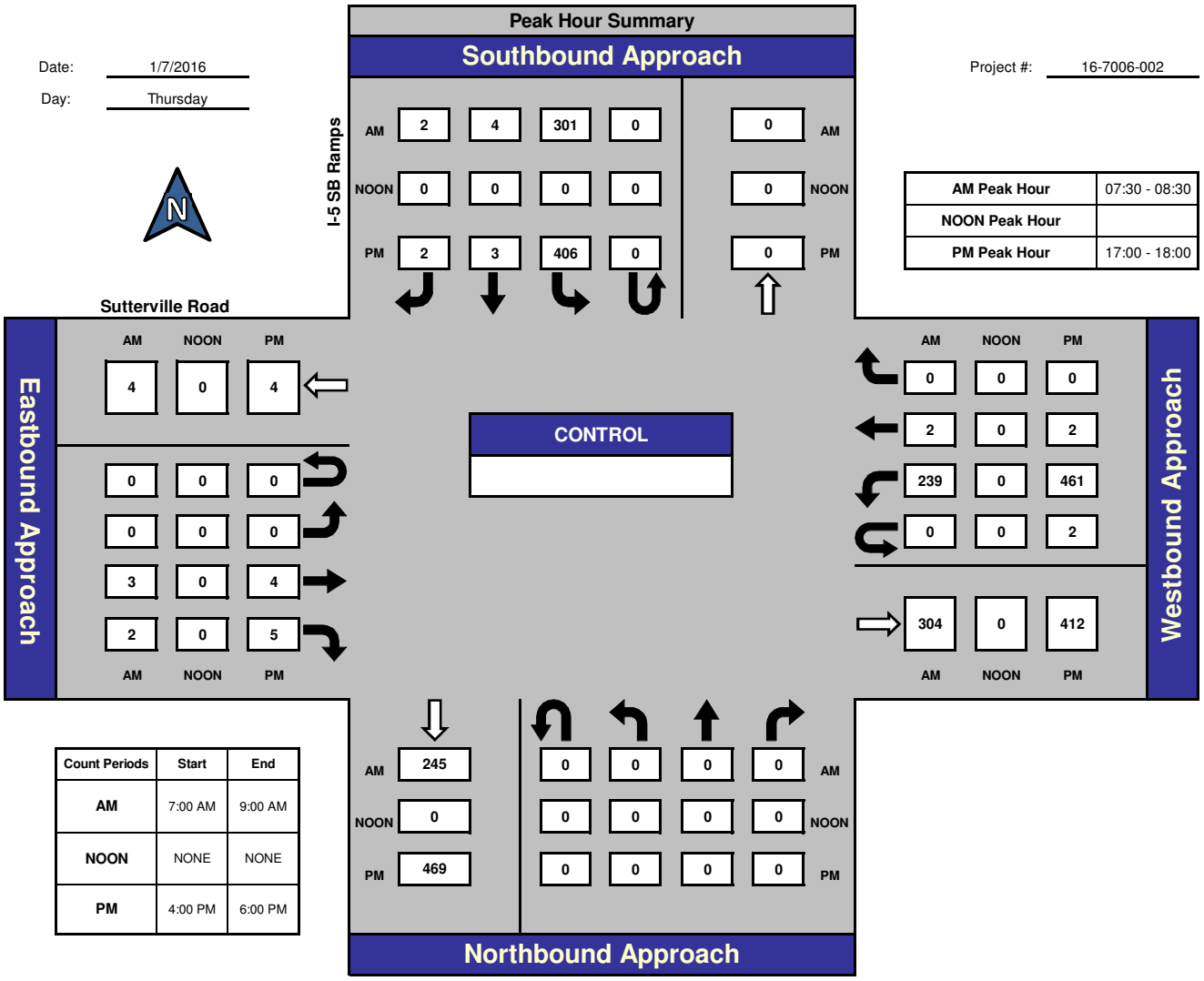


I-5 SB Ramps & Sutterville Road

Date: 1/7/2016

Day: Thursday

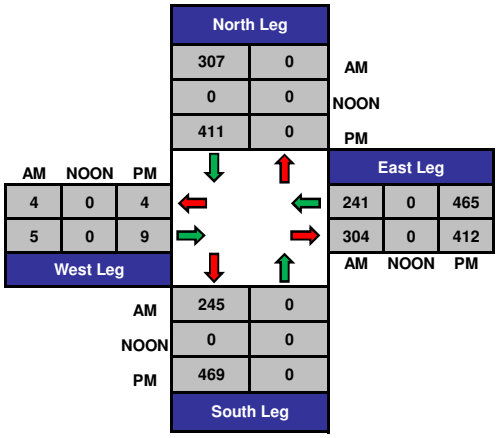
Project #: 16-7006-002



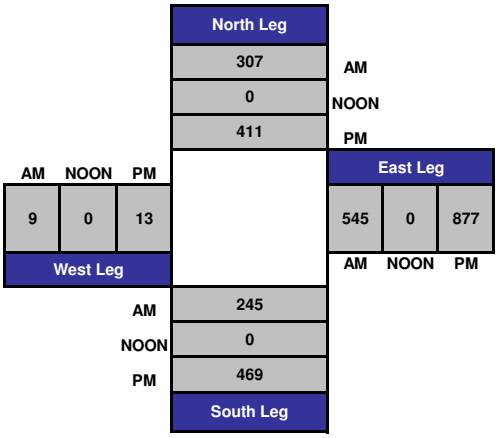
AM Peak Hour	07:30 - 08:30
NOON Peak Hour	
PM Peak Hour	17:00 - 18:00

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg

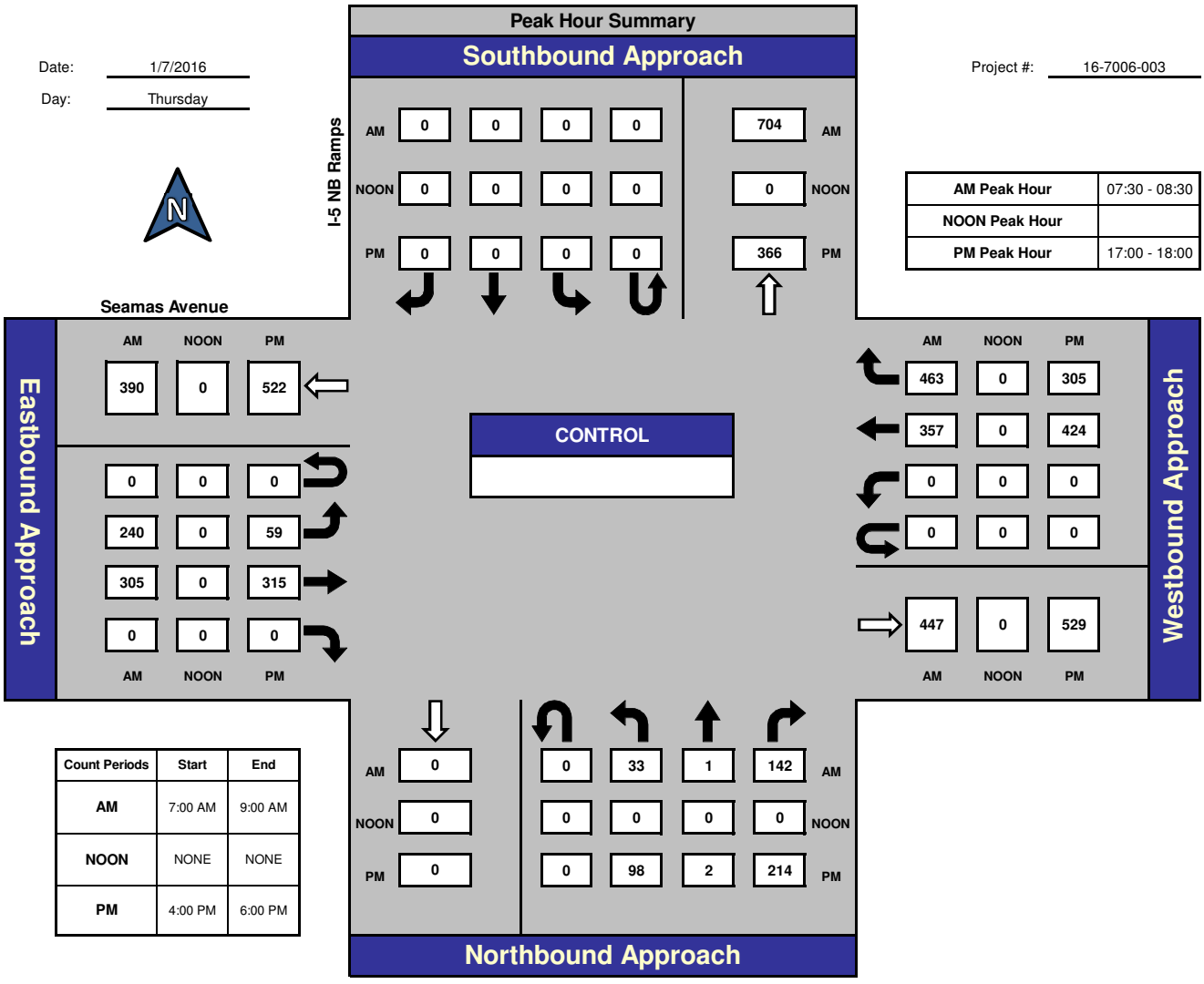


I-5 NB Ramps & Seamas Avenue

Date: 1/7/2016

Day: Thursday

Project #: 16-7006-003



AM Peak Hour	07:30 - 08:30
NOON Peak Hour	
PM Peak Hour	17:00 - 18:00

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	704	AM
	0	0	NOON
	0	366	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
390	0	522		820	0	729
545	0	374		447	0	529

	South Leg	
AM	0	176
NOON	0	0
PM	0	314

Total Volume Per Leg

	North Leg	
	704	AM
	0	NOON
	366	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
935	0	896		1267	0	1258

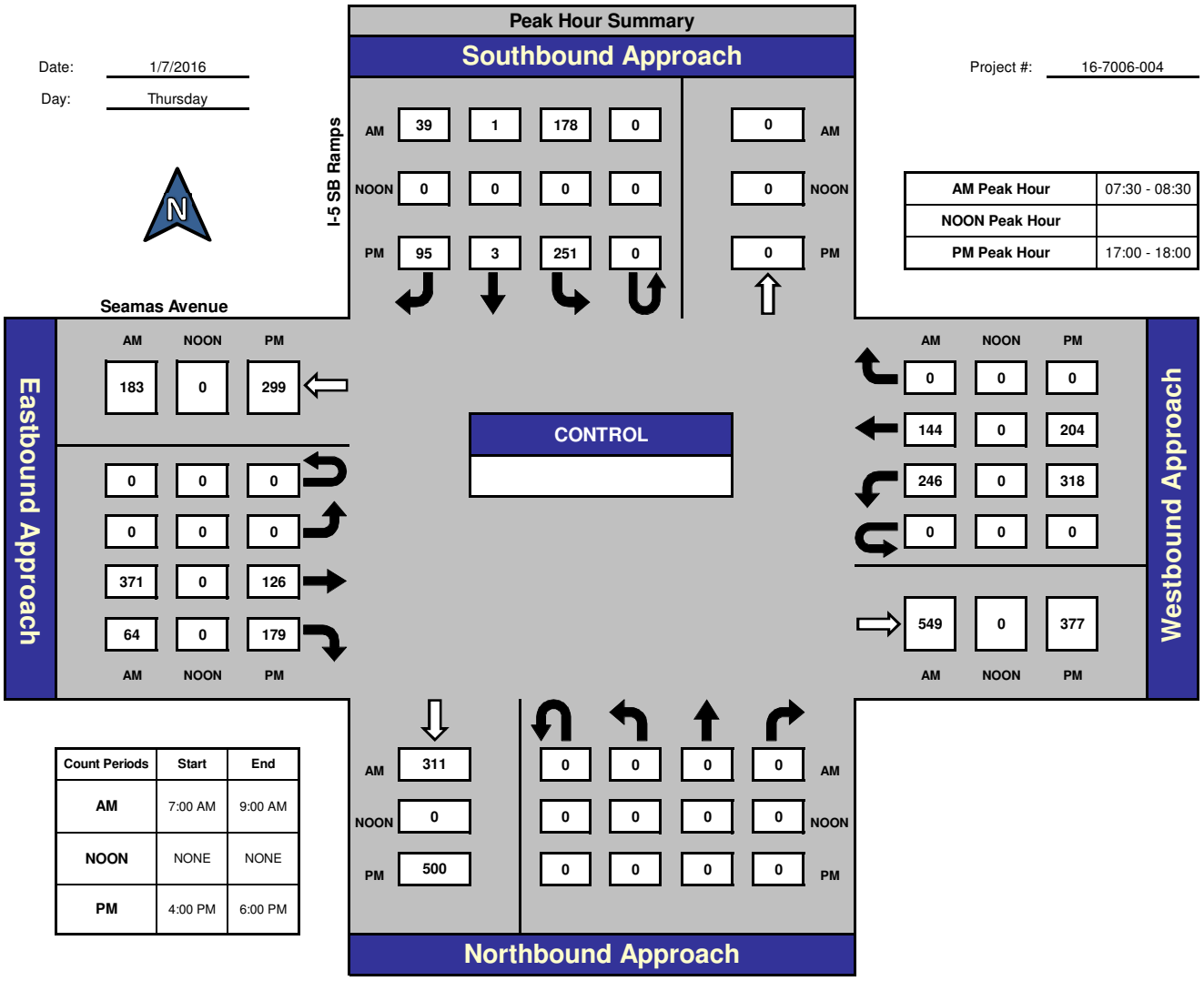
	South Leg
AM	176
NOON	0
PM	314

I-5 SB Ramps & Seamas Avenue

Date: 1/7/2016

Day: Thursday

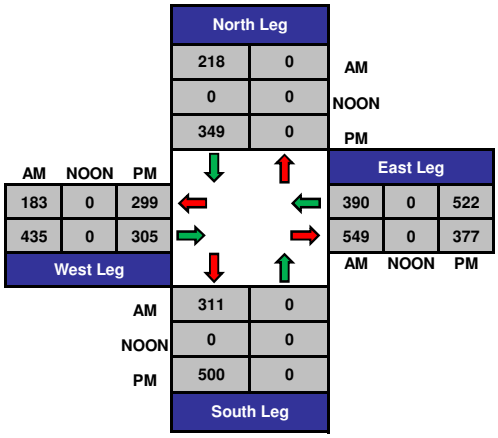
Project #: 16-7006-004



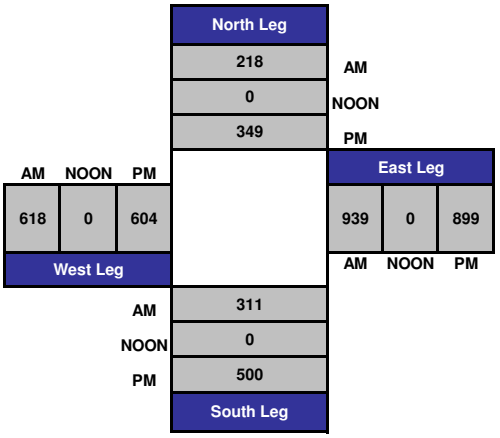
AM Peak Hour	07:30 - 08:30
NOON Peak Hour	
PM Peak Hour	17:00 - 18:00

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

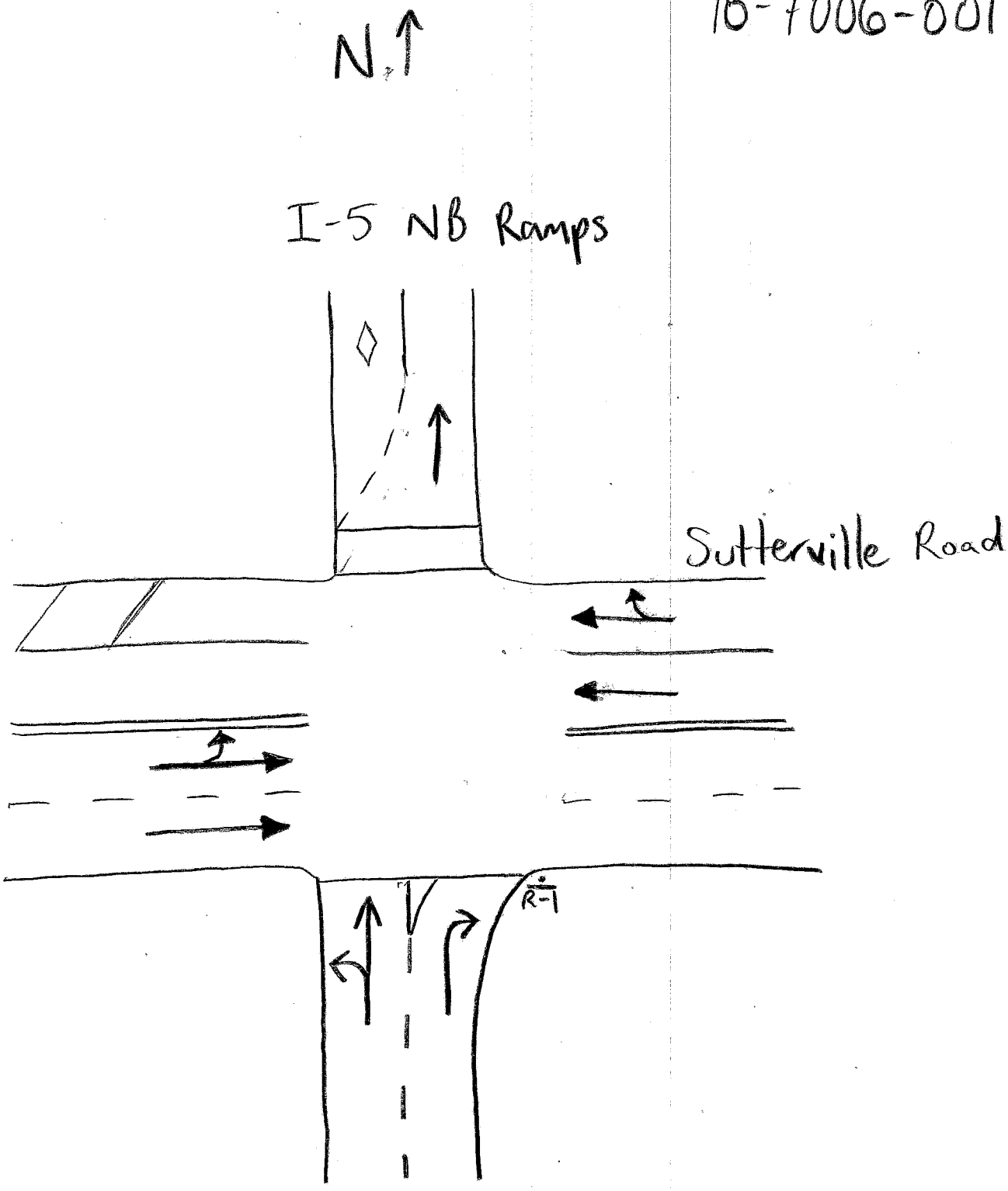
Total Ins & Outs



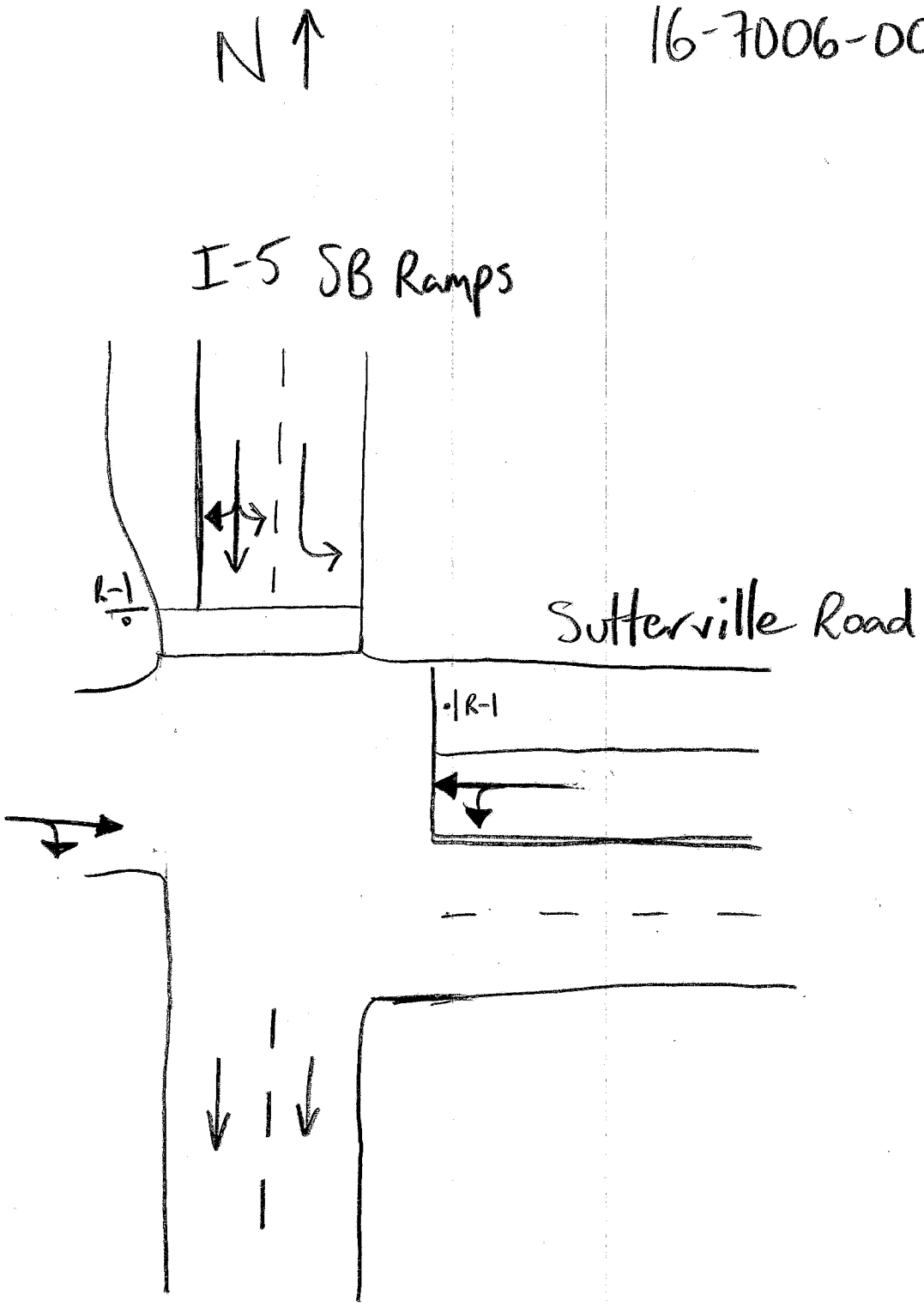
Total Volume Per Leg



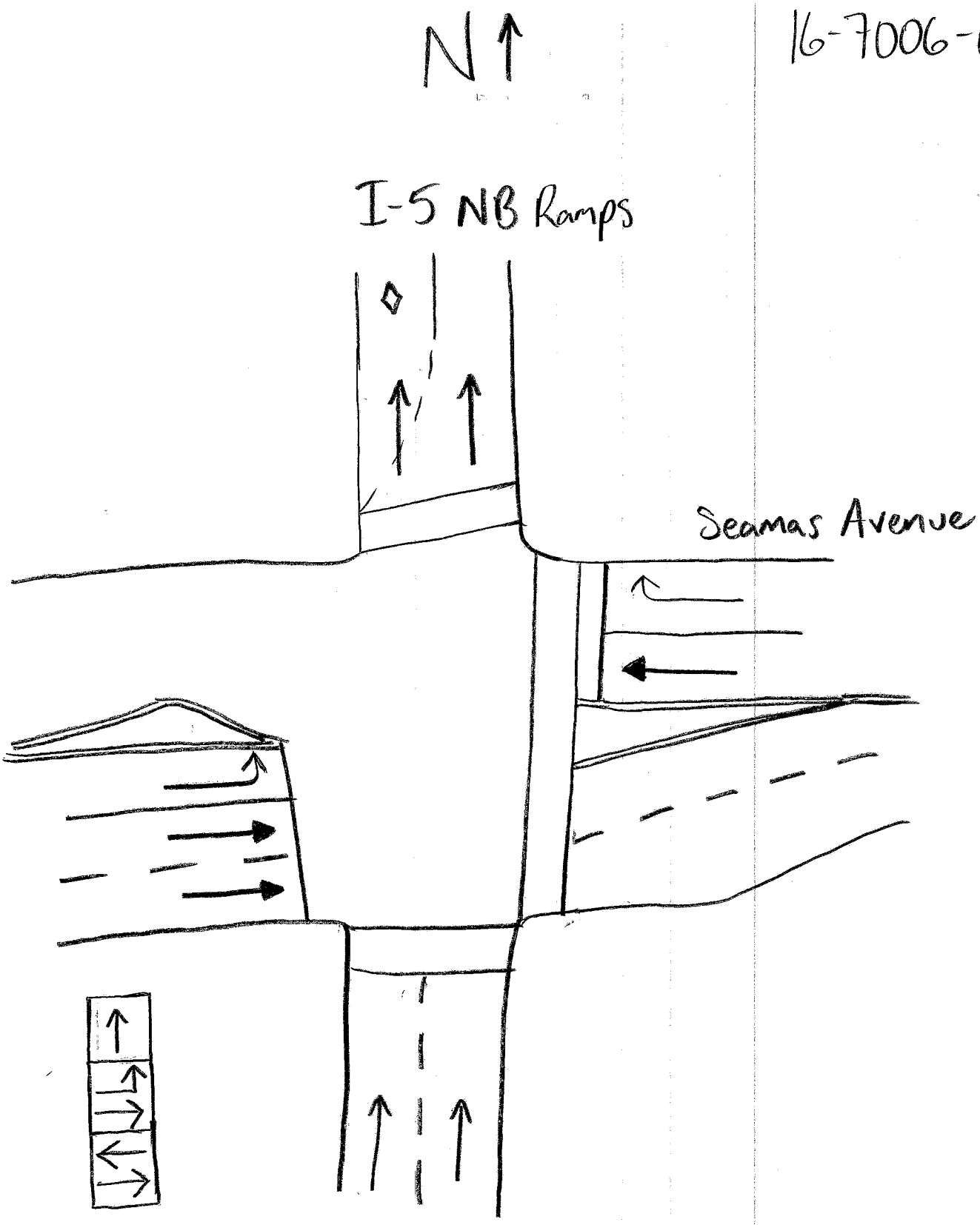
16-7006-001



16-7006-002



16-7006-003



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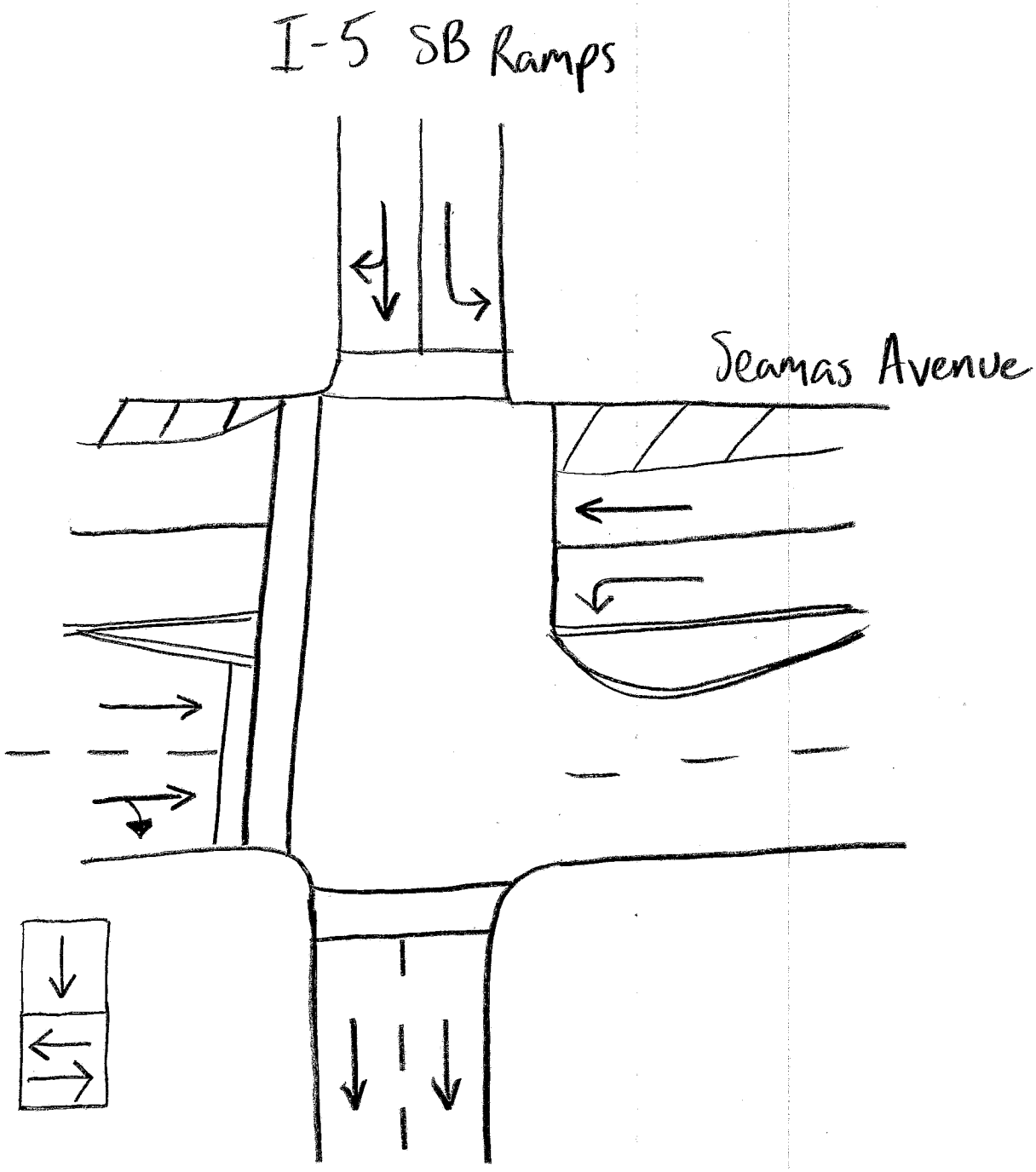
16-7006-004



Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	3	2	0	239	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	2	0	239	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	7.9	10.4
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	99%	100%	96%
Vol Thru, %	60%	1%	0%	3%
Vol Right, %	40%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	241	154	153
LT Vol	0	239	154	147
Through Vol	3	2	0	4
RT Vol	2	0	0	2
Lane Flow Rate	5	241	154	153
Geometry Grp	2	2	7	7
Degree of Util (X)	0.007	0.331	0.241	0.24
Departure Headway (Hd)	4.808	4.94	5.656	5.627
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	728	634	637
Service Time	2.855	2.965	3.399	3.37
HCM Lane V/C Ratio	0.007	0.331	0.243	0.24
HCM Control Delay	7.9	10.4	10.2	10.2
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0	1.4	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	301	4	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	301	4	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	290	0	0	239	524	1	2	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	290	0	0	239	524	1	2	200	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	239	0	0	290	0	0	555	555	145
Stage 1	-	-	-	-	-	-	316	316	-
Stage 2	-	-	-	-	-	-	239	239	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1328	-	-	1269	-	-	477	439	877
Stage 1	-	-	-	-	-	-	713	654	-
Stage 2	-	-	-	-	-	-	800	707	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1328	-	-	1269	-	-	471	0	877
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	0	-
Stage 1	-	-	-	-	-	-	704	0	-
Stage 2	-	-	-	-	-	-	800	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	471	877	1328	-	-	1269	-	-
HCM Lane V/C Ratio	0.006	0.228	0.01	-	-	-	-	-
HCM Control Delay (s)	12.7	10.3	7.7	0	-	0	-	-
HCM Lane LOS	B	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0	0.9	0	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	371	64	246	144	0	0	0	0	178	1	39
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	371	64	246	144	0				178	1	39
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1411	241	492	751	0				710	16	620
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	3117	517	796	1695	0				1774	40	1550
Grp Volume(v), veh/h	0	216	219	246	144	0				178	0	40
Grp Sat Flow(s),veh/h/ln	0	1770	1771	796	1610	0				1774	0	1589
Q Serve(g_s), s	0.0	4.4	4.5	12.8	3.1	0.0				4.0	0.0	0.9
Cycle Q Clear(g_c), s	0.0	4.4	4.5	17.3	3.1	0.0				4.0	0.0	0.9
Prop In Lane	0.00		0.29	1.00		0.00				1.00		0.98
Lane Grp Cap(c), veh/h	0	826	827	492	751	0				710	0	636
V/C Ratio(X)	0.00	0.26	0.27	0.50	0.19	0.00				0.25	0.00	0.06
Avail Cap(c_a), veh/h	0	826	827	492	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.7	9.7	15.0	9.4	0.0				12.0	0.0	11.1
Incr Delay (d2), s/veh	0.0	0.8	0.8	3.6	0.6	0.0				0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	2.4	3.8	1.5	0.0				2.1	0.0	0.4
LnGrp Delay(d),s/veh	0.0	10.5	10.5	18.6	9.9	0.0				12.9	0.0	11.3
LnGrp LOS		B	B	B	A					B		B
Approach Vol, veh/h		435			390						218	
Approach Delay, s/veh		10.5			15.4						12.6	
Approach LOS		B			B						B	

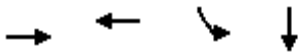
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				6.5		6.0		19.3
Green Ext Time (p_c), s				5.8		0.7		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	305	240	0	0	357	463	33	1	142	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	305	240	0	0	357	463	33	1	142			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	444	2124	0	0	528	449	460	14	422			
Arrive On Green	0.42	1.00	0.00	0.00	0.28	0.28	0.27	0.27	0.27			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1724	52	1583			
Grp Volume(v), veh/h	305	240	0	0	357	463	34	0	142			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1777	0	1583			
Q Serve(g_s), s	8.4	0.0	0.0	0.0	10.2	17.0	0.9	0.0	4.3			
Cycle Q Clear(g_c), s	8.4	0.0	0.0	0.0	10.2	17.0	0.9	0.0	4.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	444	2124	0	0	528	449	474	0	422			
V/C Ratio(X)	0.69	0.11	0.00	0.00	0.68	1.03	0.07	0.00	0.34			
Avail Cap(c_a), veh/h	444	2124	0	0	528	449	474	0	422			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.6	0.0	0.0	0.0	19.1	21.5	16.4	0.0	17.7			
Incr Delay (d2), s/veh	8.4	0.1	0.0	0.0	6.8	51.0	0.3	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	0.0	6.2	13.7	0.5	0.0	2.1			
LnGrp Delay(d),s/veh	24.0	0.1	0.0	0.0	25.9	72.5	16.7	0.0	19.9			
LnGrp LOS	C	A			C	F	B		B			
Approach Vol, veh/h		545			820			176				
Approach Delay, s/veh		13.5			52.2			19.3				
Approach LOS		B			D			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		20.0		40.0			19.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		16.0		36.0			15.0	17.0
Max Q Clear Time (g_c+I1), s		6.3		2.0			10.4	19.0
Green Ext Time (p_c), s		0.6		6.4			0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	435	390	178	40
v/c Ratio	0.27	0.38	0.25	0.06
Control Delay	9.2	10.8	13.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.2	10.8	13.2	4.8
Queue Length 50th (ft)	42	21	41	0
Queue Length 95th (ft)	67	m63	79	15
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1638	1017	708	659
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.38	0.25	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	305	240	357	463	176
v/c Ratio	0.69	0.11	0.68	0.59	0.19
Control Delay	39.6	4.6	26.9	5.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	4.6	26.9	5.7	6.0
Queue Length 50th (ft)	120	17	113	0	4
Queue Length 95th (ft)	#211	29	#200	59	24
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	442	2123	527	780	926
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.11	0.68	0.59	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	3	2	0	239	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	2	0	239	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	7.9	10.4
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	99%	100%	96%
Vol Thru, %	60%	1%	0%	3%
Vol Right, %	40%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	241	158	158
LT Vol	0	239	158	152
Through Vol	3	2	0	4
RT Vol	2	0	0	2
Lane Flow Rate	5	241	158	158
Geometry Grp	2	2	7	7
Degree of Util (X)	0.007	0.332	0.248	0.247
Departure Headway (Hd)	4.83	4.96	5.658	5.63
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	725	634	636
Service Time	2.878	2.986	3.401	3.373
HCM Lane V/C Ratio	0.007	0.332	0.249	0.248
HCM Control Delay	7.9	10.4	10.3	10.2
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0	1.5	1	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	310	4	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	310	4	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.3
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	299	0	0	239	539	1	2	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	299	0	0	239	539	1	2	200	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	239	0	0	299	0	0	564	564	150
Stage 1	-	-	-	-	-	-	325	325	-
Stage 2	-	-	-	-	-	-	239	239	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1328	-	-	1259	-	-	471	434	870
Stage 1	-	-	-	-	-	-	705	648	-
Stage 2	-	-	-	-	-	-	800	707	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1328	-	-	1259	-	-	465	0	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	0	-
Stage 1	-	-	-	-	-	-	697	0	-
Stage 2	-	-	-	-	-	-	800	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	465	870	1328	-	-	1259	-	-
HCM Lane V/C Ratio	0.006	0.23	0.01	-	-	-	-	-
HCM Control Delay (s)	12.8	10.4	7.7	0	-	0	-	-
HCM Lane LOS	B	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0	0.9	0	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	374	64	250	146	0	0	0	0	178	1	39
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	374	64	250	146	0				178	1	39
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1413	240	490	751	0				710	16	620
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	3121	514	793	1695	0				1774	40	1550
Grp Volume(v), veh/h	0	217	221	250	146	0				178	0	40
Grp Sat Flow(s),veh/h/ln	0	1770	1772	793	1610	0				1774	0	1589
Q Serve(g_s), s	0.0	4.5	4.6	13.1	3.2	0.0				4.0	0.0	0.9
Cycle Q Clear(g_c), s	0.0	4.5	4.6	17.7	3.2	0.0				4.0	0.0	0.9
Prop In Lane	0.00		0.29	1.00		0.00				1.00		0.98
Lane Grp Cap(c), veh/h	0	826	827	490	751	0				710	0	636
V/C Ratio(X)	0.00	0.26	0.27	0.51	0.19	0.00				0.25	0.00	0.06
Avail Cap(c_a), veh/h	0	826	827	490	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.7	9.7	15.1	9.4	0.0				12.0	0.0	11.1
Incr Delay (d2), s/veh	0.0	0.8	0.8	3.8	0.6	0.0				0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.4	3.9	1.5	0.0				2.1	0.0	0.4
LnGrp Delay(d),s/veh	0.0	10.5	10.5	18.9	10.0	0.0				12.9	0.0	11.3
LnGrp LOS		B	B	B	A					B		B
Approach Vol, veh/h		438			396						218	
Approach Delay, s/veh		10.5			15.6						12.6	
Approach LOS		B			B						B	

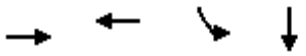
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				6.6		6.0		19.7
Green Ext Time (p_c), s				5.9		0.7		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	305	243	0	0	363	463	33	1	144	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	305	243	0	0	363	463	33	1	144			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	444	2124	0	0	528	449	460	14	422			
Arrive On Green	0.42	1.00	0.00	0.00	0.28	0.28	0.27	0.27	0.27			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1724	52	1583			
Grp Volume(v), veh/h	305	243	0	0	363	463	34	0	144			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1777	0	1583			
Q Serve(g_s), s	8.4	0.0	0.0	0.0	10.4	17.0	0.9	0.0	4.4			
Cycle Q Clear(g_c), s	8.4	0.0	0.0	0.0	10.4	17.0	0.9	0.0	4.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	444	2124	0	0	528	449	474	0	422			
V/C Ratio(X)	0.69	0.11	0.00	0.00	0.69	1.03	0.07	0.00	0.34			
Avail Cap(c_a), veh/h	444	2124	0	0	528	449	474	0	422			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.6	0.0	0.0	0.0	19.1	21.5	16.4	0.0	17.7			
Incr Delay (d2), s/veh	8.4	0.1	0.0	0.0	7.1	51.0	0.3	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	0.0	6.4	13.7	0.5	0.0	2.2			
LnGrp Delay(d),s/veh	24.0	0.1	0.0	0.0	26.3	72.5	16.7	0.0	19.9			
LnGrp LOS	C	A			C	F	B		B			
Approach Vol, veh/h		548			826			178				
Approach Delay, s/veh		13.4			52.2			19.3				
Approach LOS		B			D			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		20.0		40.0			19.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		16.0		36.0			15.0	17.0
Max Q Clear Time (g_c+I1), s		6.4		2.0			10.4	19.0
Green Ext Time (p_c), s		0.6		6.4			0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	438	396	178	40
v/c Ratio	0.27	0.39	0.25	0.06
Control Delay	9.3	11.0	13.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.3	11.0	13.2	4.8
Queue Length 50th (ft)	42	23	41	0
Queue Length 95th (ft)	67	m63	79	15
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1638	1014	708	659
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.39	0.25	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	305	243	363	463	178
v/c Ratio	0.69	0.11	0.69	0.59	0.19
Control Delay	39.7	4.6	27.4	5.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	4.6	27.4	5.7	5.9
Queue Length 50th (ft)	120	17	116	0	4
Queue Length 95th (ft)	#210	29	#207	59	24
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	442	2123	527	780	927
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.11	0.69	0.59	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	4	5	0	461	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	5	0	461	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	8.6	18.5
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	100%	98%
Vol Thru, %	44%	0%	0%	1%
Vol Right, %	56%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	463	207	204
LT Vol	0	461	207	199
Through Vol	4	2	0	3
RT Vol	5	0	0	2
Lane Flow Rate	9	463	207	204
Geometry Grp	2	2	7	7
Degree of Util (X)	0.014	0.673	0.367	0.36
Departure Headway (Hd)	5.477	5.232	6.38	6.361
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	685	567	569
Service Time	3.496	3.309	4.082	4.062
HCM Lane V/C Ratio	0.014	0.676	0.365	0.359
HCM Control Delay	8.6	18.5	12.7	12.6
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0	5.2	1.7	1.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	406	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	406	3	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.7
HCM LOS	B

Lane

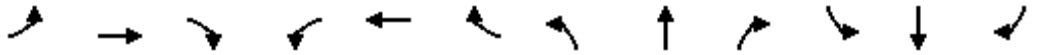
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	393	0	0	465	305	4	2	273	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	393	0	0	465	305	4	2	273	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	465	0	0	393	0	0	894	894	197
Stage 1	-	-	-	-	-	-	429	429	-
Stage 2	-	-	-	-	-	-	465	465	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1096	-	-	1162	-	-	296	280	812
Stage 1	-	-	-	-	-	-	625	583	-
Stage 2	-	-	-	-	-	-	631	562	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1096	-	-	1162	-	-	290	0	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	0	-
Stage 1	-	-	-	-	-	-	612	0	-
Stage 2	-	-	-	-	-	-	631	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	290	812	1096	-	-	1162	-	-
HCM Lane V/C Ratio	0.021	0.336	0.016	-	-	-	-	-
HCM Control Delay (s)	17.7	11.7	8.3	0.1	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	1.5	0.1	-	-	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	126	179	318	204	0	0	0	0	251	3	95
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	126	179	318	204	0				251	3	95
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	826	739	547	751	0				710	19	617
Arrive On Green	0.00	0.47	0.47	0.31	0.31	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	1863	1583	914	1695	0				1774	49	1542
Grp Volume(v), veh/h	0	126	179	318	204	0				251	0	98
Grp Sat Flow(s),veh/h/ln	0	1770	1583	914	1610	0				1774	0	1591
Q Serve(g_s), s	0.0	2.5	4.1	16.3	5.7	0.0				5.9	0.0	2.4
Cycle Q Clear(g_c), s	0.0	2.5	4.1	20.4	5.7	0.0				5.9	0.0	2.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.97
Lane Grp Cap(c), veh/h	0	826	739	547	751	0				710	0	636
V/C Ratio(X)	0.00	0.15	0.24	0.58	0.27	0.00				0.35	0.00	0.15
Avail Cap(c_a), veh/h	0	826	739	547	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.2	9.6	19.9	13.0	0.0				12.6	0.0	11.5
Incr Delay (d2), s/veh	0.0	0.4	0.8	4.5	0.9	0.0				1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	1.9	5.5	2.7	0.0				3.1	0.0	1.1
LnGrp Delay(d),s/veh	0.0	9.6	10.4	24.3	13.8	0.0				14.0	0.0	12.0
LnGrp LOS		A	B	C	B					B		B
Approach Vol, veh/h		305			522						349	
Approach Delay, s/veh		10.1			20.2						13.4	
Approach LOS		B			C						B	

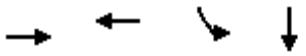
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				6.1		7.9		22.4
Green Ext Time (p_c), s				5.9		1.2		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	305	59	0	0	424	305	98	2	214	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	305	59	0	0	424	305	98	2	214			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	414	2065	0	0	528	449	493	10	449			
Arrive On Green	0.23	0.58	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1740	36	1583			
Grp Volume(v), veh/h	305	59	0	0	424	305	100	0	214			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	9.6	0.4	0.0	0.0	12.7	10.3	2.6	0.0	6.7			
Cycle Q Clear(g_c), s	9.6	0.4	0.0	0.0	12.7	10.3	2.6	0.0	6.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	414	2065	0	0	528	449	503	0	449			
V/C Ratio(X)	0.74	0.03	0.00	0.00	0.80	0.68	0.20	0.00	0.48			
Avail Cap(c_a), veh/h	414	2065	0	0	528	449	503	0	449			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.3	5.3	0.0	0.0	19.9	19.1	16.3	0.0	17.8			
Incr Delay (d2), s/veh	11.1	0.0	0.0	0.0	12.2	8.1	0.9	0.0	3.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.9	0.2	0.0	0.0	8.3	5.5	1.4	0.0	3.4			
LnGrp Delay(d),s/veh	32.4	5.3	0.0	0.0	32.2	27.2	17.2	0.0	21.4			
LnGrp LOS	C	A			C	C	B		C			
Approach Vol, veh/h		364			729			314				
Approach Delay, s/veh		28.0			30.1			20.1				
Approach LOS		C			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		21.0		39.0			18.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		17.0		35.0			14.0	17.0
Max Q Clear Time (g_c+I1), s		8.7		2.4			11.6	14.7
Green Ext Time (p_c), s		1.2		4.5			0.2	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	305	522	251	98
v/c Ratio	0.19	0.48	0.35	0.14
Control Delay	4.3	13.0	14.4	3.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.3	13.0	14.4	3.9
Queue Length 50th (ft)	12	46	61	1
Queue Length 95th (ft)	31	m78	110	24
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1601	1094	708	694
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.48	0.35	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	305	59	424	305	314
v/c Ratio	0.74	0.03	0.80	0.46	0.30
Control Delay	30.8	6.1	34.4	5.0	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	6.1	34.4	5.0	6.8
Queue Length 50th (ft)	112	7	141	0	14
Queue Length 95th (ft)	#220	14	#275	49	40
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	413	2064	527	667	1040
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.03	0.80	0.46	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	4	5	0	461	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	5	0	461	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	8.7	19.1
HCM LOS	A	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	100%	98%
Vol Thru, %	44%	0%	0%	1%
Vol Right, %	56%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	463	224	221
LT Vol	0	461	224	216
Through Vol	4	2	0	3
RT Vol	5	0	0	2
Lane Flow Rate	9	463	224	221
Geometry Grp	2	2	7	7
Degree of Util (X)	0.014	0.682	0.399	0.391
Departure Headway (Hd)	5.573	5.302	6.399	6.381
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	644	676	565	567
Service Time	3.594	3.386	4.099	4.081
HCM Lane V/C Ratio	0.014	0.685	0.396	0.39
HCM Control Delay	8.7	19.1	13.3	13.1
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0	5.4	1.9	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	440	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	440	3	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	13.2
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	427	0	0	465	345	4	2	273	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	427	0	0	465	345	4	2	273	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	465	0	0	427	0	0	928	928	214
Stage 1	-	-	-	-	-	-	463	463	-
Stage 2	-	-	-	-	-	-	465	465	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1096	-	-	1129	-	-	282	267	792
Stage 1	-	-	-	-	-	-	601	563	-
Stage 2	-	-	-	-	-	-	631	562	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1096	-	-	1129	-	-	276	0	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	0	-
Stage 1	-	-	-	-	-	-	588	0	-
Stage 2	-	-	-	-	-	-	631	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	276	792	1096	-	-	1129	-	-
HCM Lane V/C Ratio	0.022	0.345	0.016	-	-	-	-	-
HCM Control Delay (s)	18.3	11.9	8.3	0.1	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	1.5	0.1	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	146	179	340	219	0	0	0	0	251	3	95
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	146	179	340	219	0				251	3	95
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	826	739	539	751	0				710	19	617
Arrive On Green	0.00	0.47	0.47	0.31	0.31	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	1863	1583	898	1695	0				1774	49	1542
Grp Volume(v), veh/h	0	146	179	340	219	0				251	0	98
Grp Sat Flow(s),veh/h/ln	0	1770	1583	898	1610	0				1774	0	1591
Q Serve(g_s), s	0.0	2.9	4.1	18.2	6.2	0.0				5.9	0.0	2.4
Cycle Q Clear(g_c), s	0.0	2.9	4.1	22.3	6.2	0.0				5.9	0.0	2.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.97
Lane Grp Cap(c), veh/h	0	826	739	539	751	0				710	0	636
V/C Ratio(X)	0.00	0.18	0.24	0.63	0.29	0.00				0.35	0.00	0.15
Avail Cap(c_a), veh/h	0	826	739	539	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.3	9.6	20.6	13.1	0.0				12.6	0.0	11.5
Incr Delay (d2), s/veh	0.0	0.5	0.8	5.5	1.0	0.0				1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.9	6.1	3.0	0.0				3.1	0.0	1.1
LnGrp Delay(d),s/veh	0.0	9.8	10.4	26.1	14.1	0.0				14.0	0.0	12.0
LnGrp LOS		A	B	C	B					B		B
Approach Vol, veh/h		325			559						349	
Approach Delay, s/veh		10.1			21.4						13.4	
Approach LOS		B			C						B	

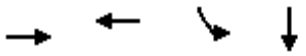
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				6.1		7.9		24.3
Green Ext Time (p_c), s				6.4		1.2		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	305	79	0	0	461	305	98	2	228	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	305	79	0	0	461	305	98	2	228			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	414	2065	0	0	528	449	493	10	449			
Arrive On Green	0.23	0.58	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1740	36	1583			
Grp Volume(v), veh/h	305	79	0	0	461	305	100	0	228			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	9.6	0.6	0.0	0.0	14.1	10.3	2.6	0.0	7.2			
Cycle Q Clear(g_c), s	9.6	0.6	0.0	0.0	14.1	10.3	2.6	0.0	7.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	414	2065	0	0	528	449	503	0	449			
V/C Ratio(X)	0.74	0.04	0.00	0.00	0.87	0.68	0.20	0.00	0.51			
Avail Cap(c_a), veh/h	414	2065	0	0	528	449	503	0	449			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.3	5.3	0.0	0.0	20.5	19.1	16.3	0.0	18.0			
Incr Delay (d2), s/veh	11.1	0.0	0.0	0.0	17.9	8.1	0.9	0.0	4.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.9	0.3	0.0	0.0	9.8	5.5	1.4	0.0	3.7			
LnGrp Delay(d),s/veh	32.4	5.4	0.0	0.0	38.4	27.2	17.2	0.0	22.1			
LnGrp LOS	C	A			D	C	B		C			
Approach Vol, veh/h		384			766			328				
Approach Delay, s/veh		26.9			33.9			20.6				
Approach LOS		C			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		21.0		39.0			18.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		17.0		35.0			14.0	17.0
Max Q Clear Time (g_c+I1), s		9.2		2.6			11.6	16.1
Green Ext Time (p_c), s		1.2		5.0			0.2	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	325	559	251	98
v/c Ratio	0.20	0.52	0.35	0.14
Control Delay	4.6	14.0	14.4	3.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.6	14.0	14.4	3.9
Queue Length 50th (ft)	14	55	61	1
Queue Length 95th (ft)	33	m77	110	24
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1609	1085	708	694
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.52	0.35	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	305	79	461	305	328
v/c Ratio	0.74	0.04	0.87	0.46	0.31
Control Delay	31.6	6.1	41.4	5.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	6.1	41.4	5.0	6.6
Queue Length 50th (ft)	112	9	157	0	14
Queue Length 95th (ft)	#220	17	#310	49	41
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	413	2064	527	667	1048
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.04	0.87	0.46	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	3	2	0	283	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	2	0	283	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	8.4	12.1
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	99%	100%	97%
Vol Thru, %	60%	1%	0%	2%
Vol Right, %	40%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	285	232	230
LT Vol	0	283	232	223
Through Vol	3	2	0	5
RT Vol	2	0	0	2
Lane Flow Rate	5	285	232	230
Geometry Grp	2	2	7	7
Degree of Util (X)	0.007	0.418	0.374	0.369
Departure Headway (Hd)	5.248	5.277	5.801	5.78
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	675	681	617	619
Service Time	3.332	3.321	3.57	3.548
HCM Lane V/C Ratio	0.007	0.419	0.376	0.372
HCM Control Delay	8.4	12.1	12	11.9
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0	2.1	1.7	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	455	5	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	455	5	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	445	0	0	283	576	2	4	539	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	445	0	0	283	576	2	4	539	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	283	0	0	445	0	0	756	756	223
Stage 1	-	-	-	-	-	-	473	473	-
Stage 2	-	-	-	-	-	-	283	283	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1279	-	-	1112	-	-	360	337	781
Stage 1	-	-	-	-	-	-	594	558	-
Stage 2	-	-	-	-	-	-	764	676	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1279	-	-	1112	-	-	355	0	781
Mov Cap-2 Maneuver	-	-	-	-	-	-	355	0	-
Stage 1	-	-	-	-	-	-	585	0	-
Stage 2	-	-	-	-	-	-	764	0	-

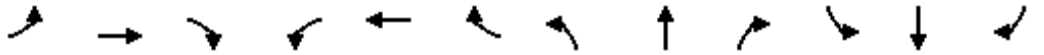
Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	355	781	1279	-	-	1112	-	-
HCM Lane V/C Ratio	0.017	0.69	0.011	-	-	-	-	-
HCM Control Delay (s)	15.3	19.2	7.8	0.1	-	0	-	-
HCM Lane LOS	C	C	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	5.6	0	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	278	61	230	134	0	0	0	0	175	1	49
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	278	61	230	134	0				175	1	49
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1352	292	544	751	0				710	13	623
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	2989	626	909	1695	0				1774	32	1556
Grp Volume(v), veh/h	0	168	171	230	134	0				175	0	50
Grp Sat Flow(s),veh/h/ln	0	1770	1752	909	1610	0				1774	0	1588
Q Serve(g_s), s	0.0	3.4	3.5	10.1	2.9	0.0				3.9	0.0	1.2
Cycle Q Clear(g_c), s	0.0	3.4	3.5	13.6	2.9	0.0				3.9	0.0	1.2
Prop In Lane	0.00		0.36	1.00		0.00				1.00		0.98
Lane Grp Cap(c), veh/h	0	826	818	544	751	0				710	0	635
V/C Ratio(X)	0.00	0.20	0.21	0.42	0.18	0.00				0.25	0.00	0.08
Avail Cap(c_a), veh/h	0	826	818	544	751	0				710	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	9.5	13.5	9.3	0.0				12.0	0.0	11.2
Incr Delay (d2), s/veh	0.0	0.6	0.6	2.4	0.5	0.0				0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	3.2	1.4	0.0				2.1	0.0	0.6
LnGrp Delay(d),s/veh	0.0	10.0	10.0	15.9	9.8	0.0				12.8	0.0	11.4
LnGrp LOS		A	B	B	A					B		B
Approach Vol, veh/h		339			364						225	
Approach Delay, s/veh		10.0			13.6						12.5	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				5.5		5.9		15.6
Green Ext Time (p_c), s				4.8		0.7		3.7

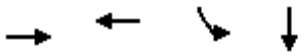
Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	217	232	0	0	330	470	34	1	217	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	217	232	0	0	330	470	34	1	217			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	444	2124	0	0	528	449	460	14	422			
Arrive On Green	0.50	1.00	0.00	0.00	0.28	0.28	0.27	0.27	0.27			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1726	51	1583			
Grp Volume(v), veh/h	217	232	0	0	330	470	35	0	217			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	4.9	0.0	0.0	0.0	9.3	17.0	0.9	0.0	7.0			
Cycle Q Clear(g_c), s	4.9	0.0	0.0	0.0	9.3	17.0	0.9	0.0	7.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	444	2124	0	0	528	449	474	0	422			
V/C Ratio(X)	0.49	0.11	0.00	0.00	0.63	1.05	0.07	0.00	0.51			
Avail Cap(c_a), veh/h	444	2124	0	0	528	449	474	0	422			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.5	0.0	0.0	0.0	18.7	21.5	16.5	0.0	18.7			
Incr Delay (d2), s/veh	3.8	0.1	0.0	0.0	5.5	55.5	0.3	0.0	4.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	0.0	5.6	14.3	0.5	0.0	3.5			
LnGrp Delay(d),s/veh	16.3	0.1	0.0	0.0	24.2	77.0	16.8	0.0	23.1			
LnGrp LOS	B	A			C	F	B		C			
Approach Vol, veh/h		449			800			252				
Approach Delay, s/veh		7.9			55.2			22.2				
Approach LOS		A			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		20.0		40.0			19.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		16.0		36.0			15.0	17.0
Max Q Clear Time (g_c+I1), s		9.0		2.0			6.9	19.0
Green Ext Time (p_c), s		0.8		6.1			0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	339	364	175	50
v/c Ratio	0.21	0.34	0.25	0.08
Control Delay	8.1	9.8	13.2	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.1	9.8	13.2	4.5
Queue Length 50th (ft)	28	15	41	0
Queue Length 95th (ft)	50	58	79	17
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1638	1070	708	665
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.34	0.25	0.08

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	217	232	330	470	252
v/c Ratio	0.49	0.11	0.63	0.60	0.26
Control Delay	30.7	5.0	24.9	5.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	5.0	24.9	5.7	5.1
Queue Length 50th (ft)	82	19	103	0	4
Queue Length 95th (ft)	144	32	178	59	28
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	442	2123	527	785	975
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.11	0.63	0.60	0.26

Intersection Summary

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	3	2	0	283	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	2	0	283	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	8.4	12.2
HCM LOS	A	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	99%	100%	97%
Vol Thru, %	60%	1%	0%	2%
Vol Right, %	40%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	285	238	236
LT Vol	0	283	238	229
Through Vol	3	2	0	5
RT Vol	2	0	0	2
Lane Flow Rate	5	285	238	236
Geometry Grp	2	2	7	7
Degree of Util (X)	0.007	0.42	0.384	0.379
Departure Headway (Hd)	5.278	5.303	5.807	5.786
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	672	678	617	618
Service Time	3.361	3.345	3.574	3.553
HCM Lane V/C Ratio	0.007	0.42	0.386	0.382
HCM Control Delay	8.4	12.2	12.2	12.1
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0	2.1	1.8	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	467	5	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	467	5	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.2
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	457	0	0	283	585	2	4	539	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	457	0	0	283	585	2	4	539	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	283	0	0	457	0	0	768	768	229
Stage 1	-	-	-	-	-	-	485	485	-
Stage 2	-	-	-	-	-	-	283	283	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1279	-	-	1100	-	-	354	331	774
Stage 1	-	-	-	-	-	-	586	551	-
Stage 2	-	-	-	-	-	-	764	676	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1279	-	-	1100	-	-	349	0	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	349	0	-
Stage 1	-	-	-	-	-	-	577	0	-
Stage 2	-	-	-	-	-	-	764	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	349	774	1279	-	-	1100	-	-
HCM Lane V/C Ratio	0.017	0.696	0.011	-	-	-	-	-
HCM Control Delay (s)	15.5	19.6	7.8	0.1	-	0	-	-
HCM Lane LOS	C	C	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	5.8	0	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	286	61	233	139	0	0	0	0	175	1	49
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	286	61	233	139	0				175	1	49
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1359	286	540	751	0				710	13	623
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	3005	612	899	1695	0				1774	32	1556
Grp Volume(v), veh/h	0	172	175	233	139	0				175	0	50
Grp Sat Flow(s),veh/h/ln	0	1770	1755	899	1610	0				1774	0	1588
Q Serve(g_s), s	0.0	3.4	3.5	10.4	3.0	0.0				3.9	0.0	1.2
Cycle Q Clear(g_c), s	0.0	3.4	3.5	13.9	3.0	0.0				3.9	0.0	1.2
Prop In Lane	0.00		0.35	1.00		0.00				1.00		0.98
Lane Grp Cap(c), veh/h	0	826	819	540	751	0				710	0	635
V/C Ratio(X)	0.00	0.21	0.21	0.43	0.18	0.00				0.25	0.00	0.08
Avail Cap(c_a), veh/h	0	826	819	540	751	0				710	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.5	9.5	13.6	9.3	0.0				12.0	0.0	11.2
Incr Delay (d2), s/veh	0.0	0.6	0.6	2.5	0.5	0.0				0.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	3.3	1.4	0.0				2.1	0.0	0.6
LnGrp Delay(d),s/veh	0.0	10.0	10.1	16.1	9.9	0.0				12.8	0.0	11.4
LnGrp LOS		B	B	B	A					B		B
Approach Vol, veh/h		347			372						225	
Approach Delay, s/veh		10.0			13.8						12.5	
Approach LOS		B			B						B	

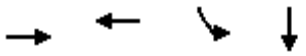
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				5.5		5.9		15.9
Green Ext Time (p_c), s				4.9		0.7		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	217	240	0	0	338	470	34	1	219	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	217	240	0	0	338	470	34	1	219			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	444	2124	0	0	528	449	460	14	422			
Arrive On Green	0.50	1.00	0.00	0.00	0.28	0.28	0.27	0.27	0.27			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1726	51	1583			
Grp Volume(v), veh/h	217	240	0	0	338	470	35	0	219			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	4.9	0.0	0.0	0.0	9.5	17.0	0.9	0.0	7.1			
Cycle Q Clear(g_c), s	4.9	0.0	0.0	0.0	9.5	17.0	0.9	0.0	7.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.97		1.00			
Lane Grp Cap(c), veh/h	444	2124	0	0	528	449	474	0	422			
V/C Ratio(X)	0.49	0.11	0.00	0.00	0.64	1.05	0.07	0.00	0.52			
Avail Cap(c_a), veh/h	444	2124	0	0	528	449	474	0	422			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.5	0.0	0.0	0.0	18.8	21.5	16.5	0.0	18.7			
Incr Delay (d2), s/veh	3.8	0.1	0.0	0.0	5.9	55.5	0.3	0.0	4.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	0.0	5.7	14.3	0.5	0.0	3.6			
LnGrp Delay(d),s/veh	16.3	0.1	0.0	0.0	24.7	77.0	16.8	0.0	23.2			
LnGrp LOS	B	A			C	F	B		C			
Approach Vol, veh/h		457			808			254				
Approach Delay, s/veh		7.8			55.1			22.3				
Approach LOS		A			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		20.0		40.0			19.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		16.0		36.0			15.0	17.0
Max Q Clear Time (g_c+I1), s		9.1		2.0			6.9	19.0
Green Ext Time (p_c), s		0.8		6.2			0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.4
HCM 2010 LOS	D



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	347	372	175	50
v/c Ratio	0.21	0.35	0.25	0.08
Control Delay	8.3	10.1	13.2	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.3	10.1	13.2	4.5
Queue Length 50th (ft)	30	17	41	0
Queue Length 95th (ft)	51	60	79	17
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1638	1068	708	665
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.35	0.25	0.08

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	217	240	338	470	254
v/c Ratio	0.49	0.11	0.64	0.60	0.26
Control Delay	31.0	5.0	25.4	5.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	5.0	25.4	5.7	5.0
Queue Length 50th (ft)	82	20	106	0	4
Queue Length 95th (ft)	145	32	183	59	28
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	442	2123	527	785	976
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.11	0.64	0.60	0.26

Intersection Summary

Intersection	
Intersection Delay, s/veh	39.7
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	4	5	0	642	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	5	0	642	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	9.4	59.7
HCM LOS	A	F

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	100%	98%
Vol Thru, %	44%	0%	0%	1%
Vol Right, %	56%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	644	306	300
LT Vol	0	642	306	294
Through Vol	4	2	0	4
RT Vol	5	0	0	2
Lane Flow Rate	9	644	306	300
Geometry Grp	2	2	7	7
Degree of Util (X)	0.016	1	0.59	0.577
Departure Headway (Hd)	6.287	5.749	6.937	6.923
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	571	631	523	525
Service Time	4.304	3.765	4.639	4.624
HCM Lane V/C Ratio	0.016	1.021	0.585	0.571
HCM Control Delay	9.4	59.7	19.1	18.6
HCM Lane LOS	A	F	C	C
HCM 95th-tile Q	0	15.3	3.8	3.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	600	4	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	600	4	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	18.9
HCM LOS	C

Lane

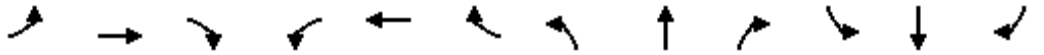
Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	586	0	0	647	482	4	2	427	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	586	0	0	647	482	4	2	427	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	647	0	0	586	0	0	1273	1273	293
Stage 1	-	-	-	-	-	-	626	626	-
Stage 2	-	-	-	-	-	-	647	647	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	939	-	-	985	-	-	171	167	704
Stage 1	-	-	-	-	-	-	496	476	-
Stage 2	-	-	-	-	-	-	520	466	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	939	-	-	985	-	-	166	0	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	0	-
Stage 1	-	-	-	-	-	-	480	0	-
Stage 2	-	-	-	-	-	-	520	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	166	704	939	-	-	985	-	-
HCM Lane V/C Ratio	0.036	0.607	0.021	-	-	-	-	-
HCM Control Delay (s)	27.5	17.7	8.9	0.1	-	0	-	-
HCM Lane LOS	D	C	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	4.1	0.1	-	-	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	96	214	342	234	0	0	0	0	333	6	211
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	96	214	342	234	0				333	6	211
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	826	739	528	751	0				710	18	618
Arrive On Green	0.00	0.47	0.47	0.31	0.31	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	1863	1583	875	1695	0				1774	44	1546
Grp Volume(v), veh/h	0	96	214	342	234	0				333	0	217
Grp Sat Flow(s),veh/h/ln	0	1770	1583	875	1610	0				1774	0	1590
Q Serve(g_s), s	0.0	1.8	5.0	18.2	6.6	0.0				8.3	0.0	5.7
Cycle Q Clear(g_c), s	0.0	1.8	5.0	23.2	6.6	0.0				8.3	0.0	5.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.97
Lane Grp Cap(c), veh/h	0	826	739	528	751	0				710	0	636
V/C Ratio(X)	0.00	0.12	0.29	0.65	0.31	0.00				0.47	0.00	0.34
Avail Cap(c_a), veh/h	0	826	739	528	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.0	9.9	21.4	13.3	0.0				13.3	0.0	12.5
Incr Delay (d2), s/veh	0.0	0.3	1.0	6.0	1.1	0.0				2.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	2.3	6.3	3.2	0.0				4.5	0.0	2.7
LnGrp Delay(d),s/veh	0.0	9.3	10.9	27.4	14.4	0.0				15.5	0.0	14.0
LnGrp LOS		A	B	C	B					B		B
Approach Vol, veh/h		310			576						550	
Approach Delay, s/veh		10.4			22.1						14.9	
Approach LOS		B			C						B	

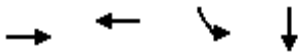
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				7.0		10.3		25.2
Green Ext Time (p_c), s				6.3		2.1		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	332	84	0	0	491	371	85	2	255	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	332	84	0	0	491	371	85	2	255			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	414	2065	0	0	528	449	492	12	449			
Arrive On Green	0.23	0.58	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1735	41	1583			
Grp Volume(v), veh/h	332	84	0	0	491	371	87	0	255			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	10.6	0.6	0.0	0.0	15.4	13.2	2.2	0.0	8.3			
Cycle Q Clear(g_c), s	10.6	0.6	0.0	0.0	15.4	13.2	2.2	0.0	8.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	414	2065	0	0	528	449	503	0	449			
V/C Ratio(X)	0.80	0.04	0.00	0.00	0.93	0.83	0.17	0.00	0.57			
Avail Cap(c_a), veh/h	414	2065	0	0	528	449	503	0	449			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.7	5.3	0.0	0.0	20.9	20.1	16.2	0.0	18.4			
Incr Delay (d2), s/veh	15.1	0.0	0.0	0.0	25.2	15.9	0.7	0.0	5.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	0.3	0.0	0.0	11.6	7.7	1.2	0.0	4.3			
LnGrp Delay(d),s/veh	36.8	5.4	0.0	0.0	46.2	36.0	16.9	0.0	23.5			
LnGrp LOS	D	A			D	D	B		C			
Approach Vol, veh/h		416			862			342				
Approach Delay, s/veh		30.4			41.8			21.8				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		21.0		39.0			18.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		17.0		35.0			14.0	17.0
Max Q Clear Time (g_c+I1), s		10.3		2.6			12.6	17.4
Green Ext Time (p_c), s		1.1		5.7			0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	310	576	333	217
v/c Ratio	0.19	0.52	0.47	0.28
Control Delay	3.6	14.4	16.1	3.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.6	14.4	16.1	3.4
Queue Length 50th (ft)	9	59	85	1
Queue Length 95th (ft)	27	m74	149	36
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1593	1098	708	763
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.52	0.47	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	332	84	491	371	342
v/c Ratio	0.80	0.04	0.93	0.52	0.32
Control Delay	32.1	6.0	49.9	5.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	6.0	49.9	5.3	6.0
Queue Length 50th (ft)	122	11	171	0	12
Queue Length 95th (ft)	#247	m16	#336	53	39
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	413	2064	527	714	1062
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.04	0.93	0.52	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Intersection	
Intersection Delay, s/veh	39.8
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	4	5	0	642	2	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	5	0	642	2	0	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	2
HCM Control Delay	9.5	60
HCM LOS	A	F

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	100%	98%
Vol Thru, %	44%	0%	0%	1%
Vol Right, %	56%	0%	0%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	644	322	328
LT Vol	0	642	322	322
Through Vol	4	2	0	4
RT Vol	5	0	0	2
Lane Flow Rate	9	644	322	328
Geometry Grp	2	2	7	7
Degree of Util (X)	0.016	1	0.612	0.622
Departure Headway (Hd)	6.366	5.818	6.851	6.837
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	566	631	524	524
Service Time	4.366	3.818	4.639	4.625
HCM Lane V/C Ratio	0.016	1.021	0.615	0.626
HCM Control Delay	9.5	60	20	20.3
HCM Lane LOS	A	F	C	C
HCM 95th-tile Q	0	15.2	4.1	4.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	643	4	2
Peak Hour Factor	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	643	4	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	20.2
HCM LOS	C

Lane

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	629	0	0	647	525	4	2	427	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	285	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	629	0	0	647	525	4	2	427	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	647	0	0	629	0	0	1316	1316	315
Stage 1	-	-	-	-	-	-	669	669	-
Stage 2	-	-	-	-	-	-	647	647	-
Critical Hdwy	4.12	-	-	4.14	-	-	6.63	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	5.83	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.218	-	-	2.22	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	939	-	-	949	-	-	161	157	682
Stage 1	-	-	-	-	-	-	472	455	-
Stage 2	-	-	-	-	-	-	520	466	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	939	-	-	949	-	-	156	0	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	0	-
Stage 1	-	-	-	-	-	-	456	0	-
Stage 2	-	-	-	-	-	-	520	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	156	682	939	-	-	949	-	-
HCM Lane V/C Ratio	0.038	0.626	0.021	-	-	-	-	-
HCM Control Delay (s)	29	18.7	8.9	0.1	-	0	-	-
HCM Lane LOS	D	C	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	4.4	0.1	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	116	214	345	268	0	0	0	0	333	6	211
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	116	214	345	268	0				333	6	211
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	826	739	521	751	0				710	18	618
Arrive On Green	0.00	0.47	0.47	0.31	0.31	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	1863	1583	859	1695	0				1774	44	1546
Grp Volume(v), veh/h	0	116	214	345	268	0				333	0	217
Grp Sat Flow(s),veh/h/ln	0	1770	1583	859	1610	0				1774	0	1590
Q Serve(g_s), s	0.0	2.2	5.0	18.9	7.7	0.0				8.3	0.0	5.7
Cycle Q Clear(g_c), s	0.0	2.2	5.0	23.9	7.7	0.0				8.3	0.0	5.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.97
Lane Grp Cap(c), veh/h	0	826	739	521	751	0				710	0	636
V/C Ratio(X)	0.00	0.14	0.29	0.66	0.36	0.00				0.47	0.00	0.34
Avail Cap(c_a), veh/h	0	826	739	521	751	0				710	0	636
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	9.9	21.6	13.7	0.0				13.3	0.0	12.5
Incr Delay (d2), s/veh	0.0	0.4	1.0	6.5	1.3	0.0				2.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	2.3	6.4	3.7	0.0				4.5	0.0	2.7
LnGrp Delay(d),s/veh	0.0	9.5	10.9	28.1	15.0	0.0				15.5	0.0	14.0
LnGrp LOS		A	B	C	B					B		B
Approach Vol, veh/h		330			613						550	
Approach Delay, s/veh		10.4			22.4						14.9	
Approach LOS		B			C						B	

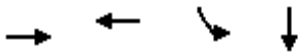
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		28.0		32.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				28.0		24.0		28.0
Max Q Clear Time (g_c+I1), s				7.0		10.3		25.9
Green Ext Time (p_c), s				6.8		2.1		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	342	104	0	0	528	371	85	2	258	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	342	104	0	0	528	371	85	2	258			
Adj No. of Lanes	1	2	0	0	1	1	0	2	0			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	414	2065	0	0	528	449	492	12	449			
Arrive On Green	0.23	0.58	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	1774	3632	0	0	1863	1583	1735	41	1583			
Grp Volume(v), veh/h	342	104	0	0	528	371	87	0	258			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1863	1583	1776	0	1583			
Q Serve(g_s), s	11.0	0.8	0.0	0.0	17.0	13.2	2.2	0.0	8.4			
Cycle Q Clear(g_c), s	11.0	0.8	0.0	0.0	17.0	13.2	2.2	0.0	8.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	414	2065	0	0	528	449	503	0	449			
V/C Ratio(X)	0.83	0.05	0.00	0.00	1.00	0.83	0.17	0.00	0.58			
Avail Cap(c_a), veh/h	414	2065	0	0	528	449	503	0	449			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.8	5.4	0.0	0.0	21.5	20.1	16.2	0.0	18.4			
Incr Delay (d2), s/veh	17.0	0.0	0.0	0.0	39.3	15.9	0.7	0.0	5.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.3	0.4	0.0	0.0	14.4	7.7	1.2	0.0	4.3			
LnGrp Delay(d),s/veh	38.8	5.4	0.0	0.0	60.8	36.0	16.9	0.0	23.7			
LnGrp LOS	D	A			F	D	B		C			
Approach Vol, veh/h		446			899			345				
Approach Delay, s/veh		31.0			50.6			22.0				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		21.0		39.0			18.0	21.0
Change Period (Y+Rc), s		4.0		4.0			4.0	4.0
Max Green Setting (Gmax), s		17.0		35.0			14.0	17.0
Max Q Clear Time (g_c+I1), s		10.4		2.8			13.0	19.0
Green Ext Time (p_c), s		1.1		6.3			0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	330	613	333	217
v/c Ratio	0.21	0.56	0.47	0.28
Control Delay	3.9	15.2	16.1	3.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.9	15.2	16.1	3.4
Queue Length 50th (ft)	11	67	85	1
Queue Length 95th (ft)	30	m73	149	36
Internal Link Dist (ft)	920	275		920
Turn Bay Length (ft)			580	
Base Capacity (vph)	1605	1098	708	763
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.56	0.47	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBT
Lane Group Flow (vph)	342	104	528	371	345
v/c Ratio	0.83	0.05	1.00	0.52	0.32
Control Delay	35.2	6.0	65.2	5.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	6.0	65.2	5.3	5.9
Queue Length 50th (ft)	127	13	~189	0	12
Queue Length 95th (ft)	#257	19	#370	53	39
Internal Link Dist (ft)		275	920		920
Turn Bay Length (ft)					
Base Capacity (vph)	413	2064	527	714	1064
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.05	1.00	0.52	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX I

Land Park Commercial Center
Urban Decay Analysis

Land Park Commercial Center
Urban Decay Analysis

Prepared for:

Dudek

Prepared by:

ALH | ECON
ALH Urban & Regional Economics

January 2016

ALH | ECON
ALH Urban & Regional Economics

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January 18, 2016

Ms. Christine Kronenberg, AICP
Senior Project Manager
Dudek
980 9th Street, Suite 1750
Sacramento, CA 95814

Re: Urban Decay Analysis for Land Park Commercial Center Project

Dear Ms. Kronenberg:

ALH Urban & Regional Economics (ALH Economics) is pleased to present this study regarding the urban decay analysis of the planned Land Park Commercial Center project in the City of Sacramento. This study highlights the study findings regarding the economic impact/urban decay analysis of the project's planned relocation of a nearby Raley's grocery store, plus additional retail shop space. The purpose of this report is to provide an assessment of the potential for the project to cause or contribute to urban decay.

It has been a pleasure working with you on this project. Please let me know if you have any questions or concerns.

Sincerely,

Amy L. Herman, AICP
Principal

TABLE OF CONTENTS

LIST OF EXHIBITS
(Appendix A)

LIST OF EXHIBITS CONTINUED
(Appendix A)

LIST OF SUPPORT EXHIBITS
(Appendix B)

I. EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this study is to assess the economic impact and potential for urban decay resulting from development of the Land Park Commercial center, an eight-building commercial center anchored by Raley's on 9.87 acres located at Wentworth Avenue and Freeport Boulevard in the Land Park neighborhood of Sacramento, California. The development site is located in a commercial area surrounded by many other retail establishments. The proposed commercial center will include a 55,000-square-foot full service Raley's grocery store and pharmacy and seven freestanding retail buildings comprising 53,980 square feet (the "Project"). The proposed Project would include the relocation of an existing Raley's store, just south of the project at 4850 Freeport Boulevard, and the demolition of existing structures that made up the former retail site of Capital Nursery, which shuttered in 2012, and two small vacant residences. The existing space where Raley's is currently located would become available for retail backfilling by one or more retail tenants.

This study estimates the potential impacts of the Project on existing retailers in the Project's market area, primarily in the form of diverted sales from existing retailers. The study further estimates the extent to which the opening of the Project and other cumulative retail projects may or may not contribute to urban decay pursuant to potential store closures attributable to existing retailer sales diversions. The key indicator from a CEQA perspective is impacts on the physical environment, which includes existing stores and commercial real estate conditions, as measured by the current baseline. This is the baseline reflected by existing conditions discussed in this report.

SUMMARY OF FINDINGS

Project Sales

ALH Economics estimates that net new stabilized sales for the Project would total $20.8 million in 2015 dollars. Based on assumptions regarding the allocation of Project space by type of retail category, and associated average sales estimates, the Project's total sales distribution is assumed as follows:

- $1.7 million in Home Furnishings & Appliances;
- $1.2 million in Building Materials and Garden Equipment;
- $3.3 million in Food and Beverage Stores;
- $2.0 million Clothing & Clothing Accessories Stores;
- $1.2 million in General Merchandise Sales;
- $5.6 million in Food Services & Drinking Places; and
- $5.7 million in Other Retail Group.

These sales estimates include an increase in the Raley's store sales, despite the plans for the new Raley's store to be 5,000 square feet smaller than the existing Raley's store that will be replaced by the Project. This is due to anticipated enhancements in store efficiency resulting from new construction.

These categories of sales are based upon categories defined by the State of California Board of Equalization. The "Other Retail" category is a broad category that includes a wide range of goods, such as office supplies, pet supplies, books, toys, pharmacy, jewelry, sporting goods, and gifts.

The Project is anticipated to draw 80% of its sales from its market area. This market area includes 16 census tracts radiating out from the Project site that includes parts of several Sacramento neighborhoods, including Land Park, Curtis Park, Oak Park, and Hollywood Park. These 16 census tracts were defined as the market area based on the location of other Raley's stores as well as Bel-Air stores, under the same corporate ownership. Pursuant to this 80% market area sales assumption, the estimated portion of Project sales generated by market area residents is $16.6 million. The remaining 20% balance of Project sales are anticipated to originate from other sources, such as people who work nearby but live beyond the market area, visitors to the area, and other shoppers traveling through the area.

Retail Sales Base and Characterization

The market area retail sales base is estimated to total $383.6 million. This is equivalent to 7.6% of the City of Sacramento's sales base. The City of Sacramento is a retail attraction market, meaning that more sales are captured by area retailers than would be expected from resident spending alone. This retail base attraction is characteristic of all major retail sectors. In contrast, the market area is characterized by leakage in all major retail categories, meaning that market area households shop elsewhere for many of their retail needs, most likely other City of Sacramento locations. This amount of leakage is estimated to comprise support for 560,000 square feet of retail for the current household base.

Project Sales and Store Impacts

Recognizing that the market area is a sales leakage market, the analysis takes into consideration the Project's potential to recapture existing leakage. As a relatively small center, the Project will not have the ability to absorb all the noted leakage, or even a majority of the leakage. However, sales in many of the Project's retail categories are estimated to be satisfied through the recapture of market area leakage. There are a few categories of sales for which recaptured leakage is not anticipated to be sufficient to absorb Project sales. These include Food & Beverage Stores, Food Services & Drinking Places, and the Other Retail Group. However, by the time the Project is fully operational in 2019, comprising the first full year of operations, additional market area demand is anticipated to be generated sufficient to absorb the share of Project sales not estimated to be absorbed by recaptured retail leakage. The Project impact analysis therefore concludes that no negative store impacts are anticipated pursuant to Project development. Thus, no existing market area stores are projected to close as a consequence of declining sales attributable to Project development. However, relocation of the existing Freeport Boulevard Raley's store to the Project will result in the vacancy of the store's existing space, which comprises 60,000-square feet of retail commercial space.

Cumulative Project Sales Impacts

ALH Economics identified 24 potential cumulative retail development projects in the market area and the broader environs. A subset of 11 projects was deemed most relevant for a cumulative analysis, pursuant to project location, timing, and orientation. The cumulative projects will have

their own unique market areas, so cumulative project sales will not all be competitive with the Project or relate to the market area sales base. This share of sales is estimated to total $26.9 million. These are the sales anticipated to be generated by households living in the portion of the cumulative projects' market areas shared with the Project's market area. These sales were added to the Project sales to develop an estimate of total Project and cumulative project sales. The collective sales were then analyzed relative to the existing sales bases to assess prospective sales impacts.

With the addition of the cumulative projects, there are some estimated sales impacts in three retail categories, including Food & Beverage Stores, Food Services & Drinking Places, and Other Retail Group. The sales impacts in Food Services & Drinking Places and Other Retail are estimated to be nominal, and are not anticipated to result in existing store closures. The sales impacts in the Food & Beverage category are anticipated to be more substantial, estimated at $5.5 million, or equivalent to support approximately 9,200 square feet of retail space. These impacts are primarily generated by three stores, which include a new Safeway planned in the market area (Curtis Park Village), a Whole Foods located approximately 3.2 miles from the Project site, and the Project itself, with increased Raley's sales. These sales are likely to be most competitive with other stores selling comparable goods. This comprises stores with a more conventional, upscale, or health orientation, and likely not any of the market area's smaller, ethnic-oriented stores. Thus, the stores most likely to be competitive with the cumulative projects include the market area's upscale and traditional markets, which include Sprouts, Taylor's Market, the Raley's store itself, and Target's food-based sales. While Raley's is itself a cumulative project, it is also a store that could experience sales impacts from the growing base of food stores represented by Safeway and Whole Foods.

Because the estimated impacts will be spread across at least the four cited market area stores they are not anticipated to comprise a sufficient amount of sales loss to result in existing store closures. Each of these stores is a well-established store with loyal customers. As the newest store in the market area, Sprout's will have the least loyal customer base, making this store possibly most at risk of sales declines. However, its product mix and orientation will likely help insulate it from impacts. The most likely impact, however, is that select existing stores will experience some sales declines, including Raley's itself, but not sufficient to result in store closure. Ultimately, these sales declines are likely be recovered over time as market area population continues to grow and market area households experience growing wealth.

However, if any store closures do occur, the findings suggest that additional retail leakage and unmet new retail demand will still remain for other retailers. Even with absorption of the cumulative projects, retail leakage totaling $138.3million is estimated to remain generated by market area households. This will be compounded by $15.3 million in estimated unmet retail demand by 2019, the Project's first full year of operations. Thus, the market area is anticipated to be characterized by more than sufficient unmet demand to support backfilling of any retail commercials spaces that might become vacant as a result of cumulative project impacts. This unmet demand, totaling $153.6 million, comprises demand for all major retail categories included in this analysis.

URBAN DECAY DETERMINATION

Definition of Urban Decay

For the purpose of this analysis, urban decay is defined as, among other characteristics, visible symptoms of physical deterioration that invite vandalism, loitering, and graffiti that is caused by a downward spiral of business closures and long term vacancies. This physical deterioration[1] to properties or structures is so prevalent, substantial, and lasting for a significant period of time that it impairs the proper utilization of the properties and structures, and the health, safety, and welfare of the surrounding community.

Retail Market Characteristics

Historically, the City of Sacramento has maintained a moderately healthy retail market sector. As of 3rd quarter 2015 Sacramento had an overall retail vacancy rate of 8.5%. This rate comprises a relative low in recent years, since hitting a peak of 10.6% in both 1st quarter 2010 and 1st quarter 2011. Prior to that time period the Sacramento vacancy rate was as low as 5.9% in 4th quarter 2007, which is healthy vacancy rate. All of these rates, however, indicate a retail market characterized by a healthy and stable retail base throughout Sacramento.

There are no retail market statistics specific to the Project's market area. However, field observation of the market area coupled with compilation and review of representative market area retail vacancies suggests that the retail vacancy rate in the market area is relatively comparable to the citywide vacancy rate. These favorable retail vacancy characteristics bode well for the market area with respect to any potential increases in vacancy attributable to potential Project impacts resulting in store closures.

Retail vacancies in Sacramento and the market area are finding new tenants. At least 11 retail leases were executed over the one-year time frame from approximately mid-October 2014 to mid-October 2015, totaling over 20,000 square feet. These lease transactions ranged in size, up to 8,684 square feet. Many more lease transactions transpired in Sacramento, with many in the 20,000-50,000 square feet range. Over a longer period of time the retail market in and near the market area has demonstrated the ability to backfill large retail spaces, including spaces vacated by grocery stores. Field observation indicates that properties that are not immediately backfilled and remain vacant are in generally good condition and do not exhibit signs of urban decay, although some periodically exhibit select indicators of poor maintenance. These factors suggest that retail vacancies that might occur in the market area as a result of cumulative project impacts may not remain vacant for long, and for those that do not meet with immediate market success, there is no evidence to suggest urban decay would result.

[1] The manifestations of urban decay include such visible conditions as plywood-boarded doors and windows, parked trucks and long term unauthorized use of the properties and parking lots, extensive gang and other graffiti and offensive words painted on buildings, dumping of refuse on site, overturned dumpsters, broken parking barriers, broken glass littering the site, dead trees and shrubbery together with weeds, lack of building maintenance, homeless encampments, and unsightly and dilapidated fencing.

Urban Decay Conclusion

ALH Economics focused on determining whether or not physical deterioration in existing retail centers would likely result from the opening of the Project and other cumulative retail developments in reaching a conclusion about urban decay. The conclusion is based on consideration of current market conditions, findings regarding diverted sales, and regulatory controls. Highlights of these findings are as follows:

Current Market Conditions: The fieldwork and market research indicated that retail market conditions are moderately strong in Sacramento as well as the Project's market area, with low to moderate retail vacancy rates. Retail leasing activity is occurring and existing vacancies are moderately well maintained, with only scattered and limited signs of poor maintenance, none of which is characteristic of urban decay in the market area.

Sales and Vacancy Impacts: The Project alone is not anticipated to result in closure of existing retailers. The Project combined with cumulative project sales impacts could have sales impacts up to $5.5 million in sales spread among several existing food stores, which is unlikely to result in closure of existing retailers. In a worst case scenario this could result in one existing grocery store closure, most likely comprising the relatively new market area Sprout's store. However, the market's demonstrated retail absorption, including backfilling of larger retail spaces, coupled with moderately strong market conditions, suggest that vacancies that might occur as a result of the cumulative project impacts would likely be backfilled within a reasonable time and not be characterized by prolonged vacancy. The most likely outcome, however, is lower sales performance by select existing market area stores, including the Project's Raley's store.

Even if a commercial retail space experiences prolonged vacancy, the prevailing conditions in the market area suggest that this vacancy would be well-maintained and would not devolve into urban decay or deterioration. Moreover, it should be noted that when tenants vacate prior to lease expiration, they continue to be responsible for rent and their share of building operating expenses. While not all tenants would have the wherewithal to continue these payments, national or regional retailers are more likely to have this capability. This is an important consideration because landlords would continue to receive income on these vacated spaces through committed lease payments, which means they would have available financial resources to continue to maintain their properties.

Regulatory Controls: During Project-related fieldwork conducted in December 2015, ALH Economics found there were very limited signs of litter, graffiti, weeds, or rubbish associated with existing commercial nodes in the Project's market area. Thus, ALH Economics concludes that existing measures to maintain private commercial property in good condition in Sacramento and the market area in particular are generally effective and would serve to help preclude the potential for urban decay and deterioration in the event existing retailers in the market area close following the operations of the Project and other cumulative retail projects.

Based upon these findings, ALH Economics concludes that Land Park Commercial Center Project and the identified cumulative projects are not likely to cause or contribute to urban decay.

II. INTRODUCTION

STUDY BACKGROUND

Mo Capital is seeking to build Land Park Commercial Center, an eight-building commercial center anchored by Raley's (the "Project") on 9.87 acres located at Wentworth Avenue and Freeport Boulevard in the Land Park neighborhood of Sacramento, California. The proposed Project would include the relocation of the existing Raley's, just south of the Project at 4850 Freeport Boulevard, and the demolition of existing structures that made up the former retail site of Capital Nursery, which shuttered in 2012, and two small vacant residences. The existing space where Raley's is currently located would become available for retail backfilling by one or more retail tenants. The commercial brokerage firm representing Raley's is already in some discussion with prospective tenants, such as a fitness facility, but no specific tenant has as yet been selected for the space. Raley's, however, indicates a commitment to secure a new tenant(s) compatible with the neighborhood and complementary to Raley's relocated operations.

The Project site is located in a commercial area surrounded by many other retail establishments (see Exhibit 1 for general site location). The proposed commercial center will include a 55,000-square-foot full service Raley's grocery store and pharmacy and seven freestanding retail buildings comprising 53,165 square feet.

An Environmental Impact Report (EIR) for the Project is being prepared and coordinated by Dudek for the City of Sacramento. To support this effort and comply with the California Environmental Quality Act ("CEQA"), ALH Urban & Regional Economics ("ALH Economics") was asked to prepare findings regarding the potential for the Project to cause or contribute to urban decay. The decision by the Fifth District Court of Appeal in *Bakersfield Citizens for Local Control v. The City of Bakersfield* indicated that CEQA requires a lead agency to consider and analyze the potential for the introduction of planned retailers to result in adverse physical impacts on the environment by causing a chain reaction of store closures and long-term vacancies, otherwise referred to as a condition of "urban decay." This analysis is not required for all projects subject to CEQA, but only projects where there is the perceived potential for urban decay or deterioration to result.

This study addresses the Bakersfield decision by considering the potential impact of the Project in conjunction with the introduction of other relevant cumulative retail developments. The key indicator from a CEQA perspective is impacts on the existing physical environment, which in the context of an urban decay analysis includes existing stores and commercial real estate conditions, as measured by the current baseline. The Notice of Preparation (NOP) for the EIR was released in November 2015. The market conditions were most recently assessed in December 2015, comprising the study baseline. Other data included in the report were the most recently available at the time of the NOP. For study purposes, the Project is anticipated to be completed by year-end 2018, with 2019 comprising the first full year of operations.

STUDY TASKS

ALH Economics engaged in numerous tasks to complete this assignment assessing the prospective urban decay of the Project. These tasks included the following:

- Identified the Project's market area, i.e., the area from which the majority of Raley's consumers are anticipated to originate;
- Developed a definition of the Project, including net additional square footage estimates by type of space;
- Estimated the Project's net retail sales;
- Conducted fieldwork to review the Project's site and evaluate existing market conditions;
- Conducted retail sales leakage analyses for the City of Sacramento and the Market Area;
- Estimated demand generated by households added to the market area by the time the Project achieves stabilized sales;
- Estimated the Project's impacts on existing retailers;
- Identified planned market area retail projects;
- Assessed the cumulative impacts of planned retail projects; and
- Assessed the extent to which operations of the Project and the cumulative projects may or may not contribute to urban decay.

The findings pertaining to these tasks are reviewed and summarized in this report, with analytical findings presented in the exhibits in Appendices A and B.

STUDY RESOURCES AND REPORT ORGANIZATION

Study Resources

The urban decay analysis relied upon a number of key resources. These resources are all identified in the sources and notes to the exhibits developed to support the analysis. These resources are as follows:

- ***Governmental resources.*** These sources include representatives from the City of Sacramento Planning, Community Development, and Code Compliance/Housing; the United States Bureau of Labor Statistics, Consumer Price Index; the U.S. Census, U.S. Economic Census; State of California Board of Equalization; Sacramento Area Council of Governments "SACOG Modeling Projections for 2008, 2020, and 2035; May 2012 Total Population, Total Households, Total Dwelling Units, and Total Employment Zip Code Tabulation Area (ZCTA) summary"; City of Sacramento Municipal Code; and U.S. Bureau of Labor Statistics, Consumer Expenditures Survey.

- ***Third party resources.*** These sources include Mo Capital; MuniServies; CB Richard Ellis; CoStar; Nielsen, a national resource for demographic estimates and projections; Retail Maxim, a retail industry performance resource; Sacramento Business Journal; Sacramento Bee; Sacramento Press; downtownsac.org; Safeway Inc., 10-K for the fiscal year ended January 3, 2015; AECOM, "Market Demand Study: Proposed Whole Foods Market at 2025 L Street, Sacramento CA," dated March 3, 2015; International Council of Shopping Centers (ICSC), U.S. Shopping Center Definitions; GoogleMaps; ESRI ArcMap; US Census

Tigerline Shapefiles; LoopNet; Yelp; and select commercial brokerage firms active in Sacramento.

All of these resources are identified as warranted in the text and/or the series of exhibits found in Appendices A and B that document the study analysis.

Report Organization

This report includes nine chapters, as follows:

I. Executive Summary
II. Introduction
III. Project Sales Estimation
IV. Market Area Definition and Retail Characterization
V. Market Area Demographics and Retail Spending Potential
VI. Project Sales Impact Analysis
VII. Competitive Store Impacts
VIII. Cumulative Project Impacts
IX. Urban Decay Determination

This report is subject to the appended Assumptions and General Limiting Conditions.

III. PROJECT SALES ESTIMATION

A description of the planned Land Park Commercial Center Project and ALH Economics' estimates of the net retail sales generated by the Project are presented below. This includes sales generated by retail category. This estimate is necessary to facilitate analysis of the Project's urban decay impacts.

PROJECT DESCRIPTION

This analysis evaluates the proposed relocation of an existing 60,000-square-foot Raley's store, which is located at 4850 Freeport Boulevard in City of Sacramento. The store will be relocated to the Land Park Commercial Center Project, into a new building with 55,000 square feet. Thus, the commercial retail space allocated to Raley's will decline by 5,000 square feet. In addition, the Project will include multiple shop locations, with up to seven additional retail spaces. These additional spaces total 53,165 square feet. Considering the decline in space allocated to Raley's and the additional commercial space, the entire Project will introduce a net change of 48,165 square feet of commercial retail space to the market area. The square footage allocations are summarized below in Table 1.

Table 1. Summary Project Square Feet

Component	Existing	Proposed	Net Change
Raley's	**60,000**	**55,000**	**-5,000**
Shops 1	0	9,282	9,282
Shops 2	0	11,903	11,903
Shops 3	0	6,000	6,000
Shops 4	0	6,000	6,000
Shops 5	0	7,980	7,980
Tenant	0	12,000	12,000
Sub-total	0	53,165	53,165
Total	**60,000**	**108,165**	**48,165**

Source: Exhibit 2.

In order to support the analysis, ALH Economics developed assumptions regarding the prospective distribution of the 53,165 square feet of retail space planned for the Project in addition to the Raley's space. Tenants for this portion of the Project have not yet been determined by the Project developer. ALH Economics developed working assumptions for the space based upon experience in the retail industry, general observations of other neighborhood-oriented shopping centers, the Project's goals, and professional judgment.

The tenant retail categories selected are consistent with categories defined by the State of California Board of Equalization ("BOE"), which collects and reports business count and taxable sales data by retail category for cities and counties. This study makes strong use of these BOE data, as they comprise the best available sales trend data for locations in California. Therefore, it is important to use the BOE's defined retail sales categories for analytical purposes to maximize the use of these data. Accordingly, ALH Economics' analysis is benchmarked to these categories, which generally include:

- Motor Vehicle & Parts Dealers
- Home Furnishings & Appliances
- Building Materials & Garden Equipment
- Food & Beverage Stores
- Gasoline Stations
- Clothing & Clothing Accessories
- General Merchandise Stores
- Food Services & Drinking Places (Restaurants)
- "Other Retail" Group[2]

ALH Economics' distribution of tenant spaces assumes retailers would be spread across only a few merchandising categories due to the Project's neighborhood-serving nature and relatively small size. These categories for the 53,165 square feet of non-anchor or restaurant space, and assumed square footages are presented in Exhibit 3 and summarized in Table 2.

Table 2. Distribution of Project's Space Excluding Raley's

Sales Category	Percent	Square Feet
Motor Vehicle & Parts Dealers	0.0%	0
Home Furnishings & Appliances	10.0%	5,317
Building Materials & Garden Equipment	7.5%	3,987
Food and Beverage Stores	0.0%	0
Gasoline Stations	0.0%	0
Clothing & Clothing Accessories	10.0%	5,317
General Merchandise Stores	7.5%	3,987
Food Services & Drinking Places	20.0%	10,633
Other Retail Group	25.0%	13,291
Non-Retail Uses	20.0%	10,633
Total	**100.0%**	**53,165**

Source: Exhibit 3.

As noted, the 53,165 square feet are assumed to be distributed among all but three of the general categories, with the excluded categories including Motor Vehicle & Parts Dealers, Food and Beverage Stores, and Gasoline Stations. The analysis also assumes that 20% of the space will comprise non-retail uses, such as business and personal services like insurance, banks or credit unions, financial advisors, and hair and nail salons. This is based upon a general observed tendency for neighborhood and community shopping centers to comprise approximately 15% of space for these types of services. Compared to the overall square footage of the Project, this allocation of 20% of the shop space is more equivalent to 10% of the total Project size. Thus, this is a relatively conservative assumption from the perspective of Project retail sales generation.

[2] "Other retail" stores include a wide range of retailers, such as drug stores, health and personal care, art goods and novelties, toy stores, pet supplies, office and school supplies, sporting goods, jewelry, book stores, florists, and gifts.

PROJECTED SALES PER SQUARE FOOT

There will be several net incremental sales components associated with the Project. These include Raley's grocery sales, as the expectation is that the store space will be more efficient and thus generate higher sales despite a smaller store size, and the sales associated with the additional retail shop space to be developed. The following provides support for the sales assumptions for each of these components, which are presented in Exhibit 4.

As noted above, the new, relocated Raley's grocery store will occupy a smaller retail space than the current store. The new store will be 5,000 square feet smaller than the current store. It is not likely that Raley's would choose to relocate and consequently achieve a lower retail sales volume. Thus, the expectation is that sales would at least remain flat if not increase. Raley's is not a publically-owned company. Sales performance at Raley's stores is therefore not available pursuant to the review of public documents, such as annual Form 10-K reports filed with the Securities and Exchange Commission. However, the urban decay analysis is best facilitated pursuant to analysis of store sales, and how any increment in sales will impact stores that comprise existing conditions, or the existing retail sales base. Therefore, to estimate Raley's store sales, ALH Economics turned to industry average sales performance data reported by Retail Maxim, an industry resource that analyzes performance characteristics of retailers in the United States. Retail Maxim, prepares an annual publication that culls reports for numerous retailers and publishes their annual retail sales on a per square foot basis. This type of information for a range of retailers or type of retailers is presented in Exhibit B-1 annually from 2010 through 2013. The figures are then averaged and presented in 2015 dollars as a generalized estimate of sales per square foot per year applicable to the State of California Board of Equalization retail categories, or select specific retailers. The findings presented in Exhibit B-1 indicate that nationally, supermarkets average about $595 per square foot in sales in recent years, inflated to 2015 dollars. Based upon this figure, ALH Economics estimates that the current Raley's store achieves per square foot sales of $600 per square foot, or annual store sales of $33.0 million (see Exhibit 4). For analytical purposes, ALH Economics assumes the new Raley's store will achieve higher sales, selected as an increment of 10%, or $3.3 million. This increment seems reasonable and is substantial enough to warrant new store development.

The Retail Maxim figures presented in Exhibit B-1 are the source for the square foot sales assumptions for the Project's other assumed store sales categories. These figures range from a low of $297 per square foot for General Merchandise Stores to a high of $528 per square foot for Food Services & Drinking Places.

PROJECTED RETAIL SALES BY CATEGORY

The new sales generated by the Project will be spread across several different retail categories, including grocery items pursuant to the increased Raley's sales assumption. As noted earlier, ALH Economics allocated the Project's incremental new space to retail categories that match the classifications reported by the State of California BOE to facilitate the analysis. Specifically, the analysis is benchmarked to the BOE retail categories and the related sales figures reported in its *Taxable Sales in California* publication (with some adjustments, as noted in the Project Retail Sales Impact chapter.)

The sales distribution resulting from the per square foot sales assumptions by category are presented in Exhibit 4 and summarized below in Table 3. These distributions indicate that the greatest categories of anticipated sales with $5.7 million in Other Retail sales which reflects a range of potential sales categories and $5.6 million in Food Services & Drinking Places, e.g., restaurants. This reflects one of

the Project's objectives to provide for a welcoming neighborhood outdoor dining and gathering place for local residents. The estimated $3.3 million Raley's sales increment is then the third largest category of incremental sales. Overall, incremental sales are estimated at $20.8 million. There will be yet additional sales reflecting non-retail services, but these are anticipated to be minimal and their analysis is not supported by available comparative sales information.

Table 3. Summary of Project Sales

Retail Category	Net New Sales
Motor Vehicle & Parts Dealers	$0
Home Furnishings & Appliances	$1,714,584
Building Materials & Garden Equipment	$1,195,508
Food and Beverage Stores	$3,300,000
Gasoline Stations	$0
Clothing & Clothing Accessories Stores	$2,046,698
General Merchandise Stores	$1,184,765
Food Services & Drinking Places	$5,616,462
Other Retail Group	$5,736,674
Non-Retail Services	--
Total	**$20,794,690**

Source: Exhibit 4.

The Project will likely experience periods of some vacancy, thereby reducing the overall potential sales performance. These sales estimates do not take a stabilized vacancy rate into account. Therefore, the $20.8 million sales estimate is likely conservative, with the likelihood that sales performance will be less on an overall average basis.

The analysis presented in subsequent chapters defines the market area from which the majority of the Project's sales are likely to be generated and the range of existing and planned retailers that are anticipated to compete with the Project's new retail space.

IV. MARKET AREA DEFINITION AND RETAIL CHARACTERIZATION

This report chapter discusses the approach to estimating the Project's market area, which is the area from which the majority of shoppers are anticipated to originate. This chapter describes the market area and characterizes the area's existing retail inventory

APPROACH TO DEFINING MARKET AREA

The Project's market area definition is based on the principle that most consumers will travel to the shopping destination most convenient to their homes given the type of goods available. A market area is the geographic area from which the majority of a retail shopping center's demand is anticipated to originate. Several tasks were completed to identify the Project's market area, foremost of which included mapping the location of the Project relative to other grocery and food stores, including existing or planned stores, and taking into consideration comparative travel time and the size and composition of the retail base in Sacramento and the market area.

MARKET AREA CONCEPTUAL DESCRIPTION

In developing a market area, ALH Economics strives to identify the area from which the majority of demand for a shopping center will originate, typically at least 70%, based upon the following industry resources.

Materials published by major industry organizations indicate that a retail store's trade area generally supplies 70% to 90% of the store's sales, while the remaining 10% to 30% of sales are attributed to consumers residing outside of the store's market area. In its Shopping Center Development Handbook, Third Edition, the Urban Land Institute (ULI) states the following:

> "A site generally has a primary and a secondary trade area, and it might have a tertiary area. The primary trade area should generally supply 70 to 80 percent of the sales generated by the site. These boundaries are set by geographical and psychological obstacles."[3]

ULI is a nonprofit research and education organization representing the entire spectrum of land use and real estate development disciplines. Among real estate, retail, and economic development professionals, this organization is considered a preeminent educational forum.

Information published by the International Council of Shopping Centers (ICSC), a trade association for the shopping center industry, also provides instructional information about market area definitions. In the recent publication Developing Successful Retail in Secondary & Rural Markets, the ICSC says:

> "A trade area is the geographic market that you will be offering to potential retailers as a consumer market. … Defining a retail trade area is an art and a science. In general, a trade area should reflect the geography from which 75-90 percent of retail sales are generated. Different stores can have different trade areas based on their individual drawing power and the competitive market context."[4]

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[3] Shopping Center Development Handbook, Third Edition, Urban Land Institute, 1999, page 44.
[4] Developing Successful Retail in Secondary & Rural Markets, International Council of Shopping Centers in cooperation with National Association of Counties, 2007, page 7.

In summary, these industry resources suggest that a retail project's trade area, or market area, typically is defined as the geographic area from which at least 70% of demand is anticipated to originate.

PROJECT MARKET AREA DEFINITION

ALH Economics conducted research to develop an estimate of the market area for the Project, i.e., the area from which the majority of shoppers will originate. This market area took into consideration the location of other retail nodes where consumers can shop, including nodes with other grocery and food stores, as Raley's will be the anchor of the Land Park Commercial Center. The locations of similar full service traditional/upscale grocery and food stores such as Raley's, Bel-Air, Safeway, Corti Brothers, and Nugget Market were taken into consideration. For market area definition purposes, ALH Economics assumes that households that live closer to any other Raley's or Bel-Air store will shop there (since Bel-Air is owned and operated by the same corporate entity, and shoppers are assumed to have operator loyalty), and not shop at the Raley's in the Land Park Commercial Center. However, locations closer to the Land Park Commercial Center are assumed to comprise areas included in the Land Park Commercial Center's market area.

To identify these closer areas ALH Economics selected several geographic locations and calculated their travel time and distance between the Land Park Commercial Center and the next nearest full service grocery store. This mapping was achieved using the Google Maps functionality. Thus, the general boundary of the Project's market area was determined based upon this mapping analysis. ALH Economics then superimposed census tract boundaries over the general boundary to identify the census tracts that would best comprise the market area for the Project. An advantage of using census tracts is that the market area definition is easily defined, easily replicable, and key demographic estimates and projections can often be readily available in this format.

Estimated drive times from household locations within each census tract were analyzed to determine which grocery and food stores were closer. The parameters used to determine which census tracts to include in the market area were a drive time of 10 minutes or under to the Project, a distance of less than 3.0 miles to the Project, and whether or not there is a similar store type located closer. This resulted in the identification of 16 census tracts spanning the Sacramento neighborhoods of Land Park, Curtis Park, Oak Park, and Hollywood Park.

Census Tracts 22, 23, 24, 25, 26, 33, 34, 35.01, 35.02, 36, 37, and 39 all fit the qualifying parameters. Homes in Census Tract 27 are about equal distance with the Bel Air on Fruitridge Road. This census tract is included because it meets the parameters for the Project market area and residents will likely shop at either or possibly both stores. Sections of homes in Census Tracts 38 and 41 fall within the 10-minute and 3.0-mile parameters and other sections of homes are around 3.3 to 3.8 miles distance, but still fall at or under 10 minutes. The majority of homes within Census Tract 45.01 fall in the northern corner and these homes are within less than a 10-minute drive parameter and less than 3.0 miles to Project. The resulting market area is presented in Exhibit 5, and includes the locations of key stores considered in defining the market area.

MARKET AREA SUPPORT OF PROJECT SALES

For the purpose of this study, ALH Economics developed an estimate of the percentage of Project sales from market area resident spending. This estimate is based on considering the geographic size of the market area, the Project size and tenant orientation, population density of the area, amount of existing retail in the market area, and Project proximity to major thoroughfares, including State Highway 50 and Interstate 5. Pursuant to all these considerations, ALH Economics estimates that 80% of the Project's demand would be generated from market area shoppers.

Pursuant to this 80% market area sales assumption, the estimated portion of Project sales generated by market area residents is $40.4 million, or $16.6 million net new sales. This leaves the estimated portion of sales generated from other sources at $10.1 million, or $4.2 million net new (see Exhibit 6). These $16.6 million in net new market area generated sales are summarized in Table 4, which identifies that the largest amount at 28% of the total comprises $4.6 million in Other Retail Group sales, followed closely at 27% by $4.5 million in Food Services & Drinking Places sales. The next highest amount at 16% of the total is $2.6 million in Food and Beverage Stores sales.

Table 4. Net New Project Sales Generated by Market Area Residents

	Market Area Generated	
Retail Category	Amount	Percent
Motor Vehicle & Parts Dealers	$0	0%
Home Furnishings & Appliances	$1,371,667	8%
Building Materials & Garden Equipment	$956,406	6%
Food and Beverage Stores	$2,640,000	16%
Gasoline Stations	$0	0%
Clothing & Clothing Accessories Stores	$1,637,358	10%
General Merchandise Stores	$947,812	6%
Food Services & Drinking Places	$4,493,170	27%
Other Retail Group	$4,589,339	28%
Non-Retail Services	$0	0%
Total	$16,635,752	100%

Source: Exhibit 6.

As noted in Table 4, market area support is also estimated to account for $1.4 million in Home Furnishings & Appliances sales, approximately $956,000 in Building Materials and Garden Equipment sales, and $948,000 in General Merchandise sales at the Project.

The remaining 20% balance of Project sales are anticipated to originate from other sources, such as people who work nearby but live beyond the market area, visitors to the area, and other shoppers traveling through the area.

MARKET AREA RETAIL ORIENTATION

Located within two miles of the California State Capitol, the market area is within close proximity to downtown Sacramento's urban core. The area is anchored by several Sacramento neighborhoods, including the more premier neighborhoods of Land Park and Curtis Park as well as Oak Park and Hollywood Park. These established communities offer a diverse mix of housing, ranging from affordable multi-unit apartments to some of the most expensive homes in the region. Retail and restaurant options include many unique local stores as well as traditional chain options.

The major commercial nodes in the market area overlap many neighborhoods and run predominantly along Broadway Avenue, Freeport Boulevard, Franklin Boulevard, Fruitridge Road, and Florin Road. These retail corridors are primarily older and were developed mostly after the post World War II economic boom, with some in the Oak Park and Curtis Park areas being developed in the early 20th century. These retail corridors contain relatively small to medium neighborhood-serving strip type retailers with both local and major chains. A strong characteristic of this market area is the diverse amount of ethnic food, clothing, and personal services that are a regional draw. Many of these retail offerings have diverse amounts of commercial uses not found in Sacramento.

Despite their age, most of the retail centers are well maintained and have low vacancy rates. Some of the older retail centers have been rehabilitated, such as Park Center located at 4491 Freeport Blvd. One of the newer developed retail centers, Stone Pointe, located at 4001 Freeport Blvd is currently 100% leased. Regional big box stores are predominantly located outside of the market area, with the exception being Target, which is located at 2505 Riverside Blvd. In addition, there is strong interest in new residential, retail, and restaurant growth in the market area. Numerous infill projects are underway, which include the transit-oriented and mixed-use master planned community of Curtis Park Village. This development, now under construction, will add hundreds of single-family and multifamily units and 180,000 square feet of retail.

There is also a renewed focus and attraction to the Broadway corridor which includes Oak Park, one of Sacramento's first suburbs. Oak Park experienced decline as many urban areas did in the 1950s and 1960s. Recently, this neighborhood has seen a resurgence of both housing and retail development in projects such as the Broadway Triangle. Oak Park is currently one of Sacramento's most popular neighborhoods for boutique retailers, restaurants, and first-time home buyers. Further west of Broadway, the Mill at Broadway is one of the most anticipated regional developments in Sacramento and is helping to spark additional infill interest that boasts an abundance of restaurants and other commercial opportunities. An example of this is Selland's Market Café, a local family-owned restaurant, which is opening its third location on Broadway. Another example is located on a vacant property on Freeport Blvd., across the street from Executive Airport, a new AM-PM mini mart, gas station, and drive thru will be constructed in 2017.

This market area offers many regional amenities, including William Land Park, the largest urban park in the region. This park contains a golf course, the Sacramento Zoo, and child-oriented Fairytale Town and Funderland. The adjacent Sacramento City College is one of the most populous Community Colleges in the area. Sacramento Executive Airport offers general aviation options for light commercial and recreational uses. Since the 1930s, the Tower Theater has been an iconic gem that plays many main stream or art house movies. The opening of the Golden 1 Center in downtown Sacramento in the fall of 2016 will only increase the desirability of nearby urban living. Overall, established neighborhoods, increasing lower commercial vacancy rates, unique retail, restaurant, and cultural attractions, as well as a new emphasis on development in the market area, are all indicators of healthy retail nodes in the Sacramento market area.

V. MARKET AREA DEMOGRAPHICS AND RETAIL SPENDING POTENTIAL

This report chapter identifies the market area's demographic characteristics, including in comparison to the City of Sacramento. The chapter additionally estimates retail demand generated by the market area's residents.

DEMOGRAPHIC CHARACTERISTICS

ALH Economics developed household estimates and projections for the market area to provide a basis for estimating market area retail demand. These estimates and projections were prepared using a combination of several data sources. The reason for this combination is because the market area was defined as an aggregation of census tracts, which was designed to facilitate geographic precision; however, existing governmental data sources do not present existing estimates or projections at this level of geography. The closest level of geography for which governmental estimates and projections are available include zip codes pursuant to the Sacramento Area Council of Governments. These data are based on the 2008 and 2020 timeframes. Thus, ALH Economics matched the market area census tracts to the corresponding zip code and prepared estimated compound annual average growth rates for the zip codes pursuant to these SACOG demographic projections.[5] These growth rates were layered in with the 2010 census tract household count estimates prepared by the U.S. Bureau of the Census. Thus, household projections for relevant study time periods were predicated upon U.S. Bureau of the Census estimates by census tract, grown out on a compound annual average basis for each census tract in accordance with the growth rates for each corresponding zip code pursuant to SACOG's estimates and projections. Household counts were also prepared for the City of Sacramento as a whole. These counts were more specifically predicated upon SACOG's estimates, with interim years calculated by ALH Economics based upon the SACOG estimates for the entire City of Sacramento.

The resulting demographic estimates and projections for the Project's market area indicate that the market area has an estimated 2015 household count of 23,608 (See Exhibit 7). This is for the 16 census tracts that collectively comprise the market area. By 2019, the first estimated year of full operations for the Project, the household count is forecasted to increase to 24,594, for an increase of 986 households.

As shown in Exhibit 7, the Project's market area comprises just a small portion of the City of Sacramento demographic base. Corresponding household count figures for Sacramento are 194,584 in 2015 and 197,520 in 2019. Thus, approximately 12.0% to 12.5% of all City of Sacramento households live in the market area.

The average household income in the market area is $66,344 in 2015. This average income is modestly higher than the citywide average of $63,731. These average household incomes are estimated by Nielsen Reports, which are reports generated for defined geographies and customized geographical areas by Nielsen, a national resource for demographic estimates and projections. This resource was utilized as there are no governmental resources with current household income estimates for the census tracts comprising the market area or for the City of Sacramento.

[5] If the census tract was split between two zip codes the growth rate for the zip code encompassing the majority of the census tract was selected to support the analysis.

Approach to Estimating Retail Demand

ALH Economics prepared a retail spending potential analysis, or demand analysis, for the Project's market area households. This spending analysis takes into consideration average household income, the percent of household income spent on retail goods, and prospective spending on retail by the same retail categories reported by the BOE. Pursuant to data published by the U.S. Bureau of Labor Statistics, 2013 Consumer Expenditures Survey, households in the income group with annual household incomes between $50,000 and $70,000 throughout the United States spent an average of 36% of household income on the type of retail goods tracked by the BOE (see Exhibit B-3). This is the second highest income bracket analyzed by the Consumer Expenditures Survey, and these households had average household incomes of $59,101 before taxes. These income parameters are the most appropriate Consumer Expenditures Survey match for the market area. Based on minor interpolation of the findings presented in Exhibit B-3, ALH Economics therefore assumes that for the market area households, 35% of income will be spent on retail goods.

As a proxy for household spending patterns, ALH Economics analyzed statewide taxable sales trends for 2013 and converted them to estimated total sales. The results, presented in Exhibit B-4, indicate that household spending by retail category ranges from a low of 5.2% on Home Furnishings & Appliances to a high of 17.1% on food & beverage stores.

Market area retail demand projections for the market area's current and future household bases were estimated based upon the percent share of income spent on retail and estimated distribution of retail spending. The demand projection for the current household base is presented in Exhibit 8, the demand estimates for the incremental new households is presented in Exhibit 9. These demand estimates are then combined in Exhibit 10, which presents the total demand estimate for the current 2015 time period as well as future household demand in 2019, all in 2015 dollars.

Retail Demand Findings

The household demand estimates in Exhibit 10 are summarized below in Table 5. This indicates that the current household base has the estimated potential to spend $548.2 million on retail goods. The largest share of spending is for Food & Beverage Stores, which totals $93.9 million for the existing household base. The total demand figure will increase by over $20.0 million by the time the Project is fully operational, totaling $571.1 million in 2019.

Table 5. Market Area Retail Demand Estimates, in millions

Type of Retailer	Existing 2015	Projected 2019
Motor Vehicles and Parts Dealers	$75.7	$78.9
Home Furnishings and Appliance Stores	$28.3	$29.5
Building Materials and Garden Equip	$33.0	$34.4
Food and Beverage Stores	$93.9	$97.8
Gasoline Stations	$63.3	$66.0
Clothing and Clothing Accessories Stores	$38.9	$40.5
General Merchandise Stores	$76.4	$79.5
Food Services and Drinking Places	$69.9	$72.8
Other Retail Group	$68.8	$71.7
Total	**$548.2**	**$571.1**

Sources: Exhibits 8 and 10.

These figures demonstrate that the market area has strong retail spending potential, with even more potential emerging by the time the Project is estimated to become fully operational in 2019.

VI. PROJECT SALES IMPACT ANALYSIS

This chapter assesses the extent to which the Project's sales might impact the existing retail sales base. It examines the characterization of the sales bases in Sacramento as a whole and the Project's market area, and then considers the extent to which the Project may or may not divert sales away from existing retailers.

RETAIL SALES BASE CHARACTERIZATION

Approach

For the purpose of this study, ALH Economics characterized the retail sales base of Sacramento and the market area with regard to the extent to which they attract or leak retail demand generated by their household base. Toward this end, ALH Economics uses a retail model that estimates retail spending potential for an area based upon household counts, income, and consumer spending patterns. The model then computes the extent to which the area is or is not capturing this spending potential based upon taxable sales data published by the State of California Board of Equalization (BOE) or provided by local government municipal tax consultants. This analysis can be most readily conducted for cities, groupings of cities, or counties, consistent with the geographies reported by the BOE. When necessary, the analysis can be customized for other areas, but the integrity of the data is not as strong, because the resulting figures are approximations based on some set assumptions, rather than geographically-based reported and collected data.

For any study area, retail categories in which spending by locals is not fully captured are called "leakage" categories, while retail categories in which more sales are captured than are generated by residents are called "attraction" categories. This type of study is generically called a retail demand, sales attraction, and spending leakage analysis, or retail gap analysis. Generally, attraction categories signal particular strengths of a retail market while leakage categories signal particular weaknesses. ALH Economics' model, as well as variations developed by other urban economic and real estate consultants and economic analysts, compares projected spending to actual sales.

For the purpose of generating a Retail Demand, Sales Attraction, and Spending Leakage Analysis for Sacramento and the market area as a whole, ALH Economics obtained taxable retail sales data for 3rd Quarter 2013 through 2nd Quarter 2014 as reported by the BOE and adjusted the taxable sales to reflect total, more current sales. These were the most recent BOE data available at the time the study was conducted. Using the retail sales data, combined with the household count and household income estimates, ALH Economics conducted Retail Demand, Sales Attraction, and Spending Leakage Analyses. These analyses compared total estimated household spending to actual retail sales in both Sacramento and the market area. To the extent possible, sales estimates were updated to reflect a more current time period than measured by the BOE data. This included analyzing sales tax trend data in the City of Sacramento from 2nd Quarter 2014 through 2nd Quarter 2015, to generate sales adjustment factors by category to result in an estimated 2015 retail sales base. These data were provided by the City of Sacramento via the City's tax consultant. Comparable data were not available for just the market area, so the market area's analysis was derived from the City of Sacramento's analysis, benchmarked to retail sales data estimated by Nielsen reports (see discussion below). Retail sales for the City of Sacramento were adjusted upward to adjust for nontaxable sales in key sales categories, including food & beverage stores and the drug store component of other retail sales. These adjustments carried into the market area analysis, and are noted as relevant in the analysis.

Household Spending Estimates

ALH Economics' Retail Demand, Sales Attraction, and Spending Leakage Analysis requires household count, average household income, and percent of income spent on retail inputs for the area of analysis. As noted earlier, the household income profiles in the market area is slightly higher than the City as a whole, but within the same general income band. Accordingly, the percent of income spent on retail is assumed to be comparable, at 35% of household income pursuant to the aforementioned findings pertaining to the U.S. Consumer Expenditures Survey. As referenced earlier, households in the income group with annual household incomes between $50,000 and $70,000 throughout the United States spent an average of 36% of household income on the type of retail goods tracked by the BOE. The survey findings further indicated that U.S. households with incomes greater than $70,000 spent an average of 25% of income on retail (see Exhibit B-3). Thus, as incomes increase, the percent of spending on retail decreases. Based on these findings, interpolation pursuant to the summary presented in Exhibit B-5, and the respective average household incomes of $63,731 in Sacramento and $66,344 in the market area, ALH Economics assumed that market area and City of Sacramento households would spend 35% of income on retail. As presented in Table 6, below, these assumptions result in per household spending estimates of $23,220 for market area households and $22,306 for Sacramento households. These findings are summarized in Table 6, below.

Table 6. Market Area Average Household Income

Area	2015 Income	% Spent on Retail	Average HH Spending
Market Area	$66,344	35%	$23,220
City of Sacramento	$63,731	35%	$22,306

Sources: Nielsen Reports; and ALH Urban & Regional Economics.

Retail Sales Base Size and Composition

City of Sacramento. The estimate of Sacramento's retail sales base pursuant to the most recently available BOE data is presented in Exhibit 11. This figure, reflective of annual retail sales ending the 2nd Quarter of 2014, is approximately $5.0 billion. With interim adjustments to mid-2015 based on changes in citywide retail sales trends, the sales base was estimated to increase to increase modestly, rounding to $5.1 billion by the end of 2nd Quarter 2015 (see Exhibit 12). This indicates average sales on a per household basis of $26,100. This figure reflects sales captured per household, not demand per household. As noted in Exhibit 12, the largest component of retail sales in the City of Sacramento is Food & Beverage stores, surpassing all other categories with over $1.0 billion in estimated sales. Other categories with more than an estimated $500 million in sales include Food Services & Drinking Places, Other Retail, General Merchandise Stores, and Gasoline Stations.

Market Area. BOE sales data are not available for the Project's customized market area. Therefore, ALH Economics engaged in an estimation procedure involving data generated by another source benchmarked to the BOE data. This source is Nielsen Reports, which can generate total retail sales estimates for a variety of customized areas. Because these data are not comparable to or derived from the same source as the BOE data, ALH Economics benchmarked the Nielsen market area sales

to a Nielsen estimate of City of Sacramento sales, and then applied the resulting market area share of sales to the City of Sacramento sales estimate based upon the BOE data. This estimation procedure is presented in Exhibit 13, which resulted in an estimated sales base of $383.6 million in the Project's market area. As with the City of Sacramento, the category with the largest estimated increment of sales is the Food & Beverage Stores category, comprising an estimated 22.6% of all market area retail sales. The pattern of other major sales categories is relatively similar to the pattern citywide.

Retail Demand, Sales Attraction, and Spending Leakage Findings

City of Sacramento. Pursuant to the estimated distribution of household demand based upon the pattern noted earlier in Exhibit B-4, and cited in Table 6, estimated retail spending per household in Sacramento $22,306 (see Exhibit 14). This demand figure is somewhat lower than the sales per household figure, indicating in the aggregate that Sacramento captures more sales than is spent by its own households. In other words, Sacramento as a whole attracts retail sales. This result is not surprising, as Sacramento has a large retail base, including several major regional shopping locations.

Overall, the Retail Demand, Sales Attraction, and Spending Leakage estimates in Exhibit 14 suggest that just approximately 15% of the sales achieved in Sacramento are attracted from elsewhere. As Exhibit 14 further indicates, this retail sales attraction extends across most categories, excluding only Motor Vehicles and Parts Dealers and to a small extent Building Materials and Garden Equipment. Several categories have a relatively high level of attraction, exceeding approximately 30% of household demand potential. These include Food Services and Drinking Places (37% attraction) and Food and Beverage Stores (30% attraction). As noted earlier, the existence of retail attraction signifies particular strengths of an area, with the potential for yet additional sales to complement and enhance existing market strengths.

Market Area. The findings for the market area display a very different trend than for the City of Sacramento. The household demand presented in Exhibit 8 is compared with the market area sales presented in Exhibit 13 to derive an estimate of the market area's retail sales and attraction. As noted, household spending is estimated at $548.2 million compared to market area sales of $383.6 million (this sales base is equal to 7.6% of the citywide sales base). Thus, in contrast to the City of Sacramento, the market area is estimated to experience sales leakage in all major retail categories. This is attributable to the market area's relatively thin retail base, especially with regard to any sales beyond neighborhood- or community-oriented sales. As noted in Exhibit 15, the degree of retail sales leakage varies by category, but overall approaches an estimated 30% of household spending potential. Leakage is greatest in the Clothing and Clothing Accessories category, at 84%, and lowest in the Food and Beverage Stores category, at 8.0%. Only the sales leakage in Food and Beverage Stores is a single digit figure, with all other levels of leakage in the double-digit range. This finding indicates that in contrast to the City of Sacramento, the market area has the opportunity to recapture sales leakage, depending upon the nature of the retail.

The leakage in the market area can be expressed in terms of the amount of supportable square feet of retail space, demonstrating the extent to which market area households are likely supporting retail in other locations, most notably other City of Sacramento locations (see Exhibit 16). This is accomplished based on industry average assumptions regarding store sales performance and an allocation of additional space for services, such as banks, personal services, and business services. ALH Economics refers to an industry resource to develop per square foot sales estimates. As referenced earlier, this resource, Retail Maxim, prepares an annual publication that culls reports for numerous retailers and publishes their annual retail sales on a per square foot basis. This type of

information for a range of retailers or type of retailers is presented in Exhibit B-1 annually from 2010 through 2013. The figures are then averaged and presented in 2015 dollars as a generalized estimate of sales per square foot per year applicable to the retail categories for which the market area exhibits leakage. The resulting sales per square foot range from a low of $297 per square foot for General Merchandise Stores to a high of $595 per square foot for Food and Beverage Stores (e.g., grocery stores). In addition, Exhibit 16 indicates an estimate of $800 per square foot for Motor Vehicles and Parts, which is an estimate prepared by ALH Economics for analytical purposes to drive the analysis. Finally, the analysis assumes 15% of retail space will be occupied by uses whose sales are not reflected in the major BOE categories, yet which require commercial space. This typically includes service retail, such as finance, personal, and business services.

The result of the supportable space analysis indicates that the estimated market area leakage of $165 million is equivalent to support for about 560,000 square feet of retail. A nominal portion of this estimate comprises space for Motor Vehicles and Parts. Absent this square footage the amount of space supportable by the estimated market area leakage totals about 540,000 square feet of retail space. This provides insight into the retail dynamics in the market area, and demonstrates an opportunity for new retail outlets in the market area to recapture some sales leakage and increase the local retail base. It is unlikely that market area retail outlets can recapture all or even the majority of this leakage, as some component of demand is for regional comparison goods that are price sensitive and for which consumers are willing to travel some distance to obtain either high quality merchandise or competitively priced goods. However, the presence of leakage is a strong indicator that retail needs are not fully being met, and that retailers targeted to address unmet needs have the potential to meet with local success.

PROJECT SALES IMPACTS

This section estimates the extent to which the Project's sales may comprise a negative sales impact on the existing retail sales base. The analysis examines the impact citywide, through Sacramento, as the Project's sales will be added to the entire City of Sacramento sales base, but then also hones in on potential impacts specific to the market area, reflecting the Project's more neighborhood shopping orientation.

Approach

ALH Economics has developed an analytic approach that estimates the impact of the Project's incremental sales on existing retailers. For this analysis, the approach assumes that if the Project is adding sales to a category in an amount greater than any potential recaptured leakage in the category, ***then at worst***, the amount of sales in that category in excess of any recaptured leakage would be diverted away from existing area retailers. In cases when this applies, this can be a conservative assumption given that diverted sales beyond the amount of recaptured leakage could also occur among other retailers beyond the market area or relevant city boundaries. Or, in cases where new household growth occurs, demand captured from these new households can offset impacts by increasing total sales captured by retailers throughout the area under study.

Estimated Project Sales Base Impacts

Approach. ALH Economics analyzed the Project impacts on the existing sales base based upon the amount of Project sales estimated to be net new to the sales base. This means the sales captured by the existing Raley's store are already considered in the retail base. As estimated in Exhibit 6, the

portion of net new sales anticipated to be contributed by market area consumers totals $16.6 million. Overall, the Project's net new sales regardless of customer origin totals $20.8 million (see Exhibit 4).

These sales were examined as impacts on the existing sales base, taking into account existing retail leakage and additional demand that would result from new household growth. This does not mean that the market area has the potential to recapture all retail leakage or that new households are anticipated to spend all their retail dollars at the Project, but that as new retail dollars are spent in the market it provides support for all retailers, which may or may not include the Project's retailers. Thus, if the Project diverts retail dollars spent at existing retailers, new demand generated by household growth can potentially offset these sales diversions. Moreover, new demand for sales categories not represented by the Project can additionally provide support for yet other retailers, and hence support retail occupancy by additional new retailers.

City of Sacramento Sales Base Impacts. The analysis first examines the Project's impact on the overall retail base for the City of Sacramento. This provides a sense of context for the Project and its overall scale. This analysis is presented in Exhibit 17, which takes into account the Project's net sales regardless of customer origin and demand anticipated to be generated by households new to the City of Sacramento between 2015 and 2019, with 2019 comprising the anticipated first full year of Project operations. The citywide analysis then assesses if new demand will be sufficient to absorb the Project sales or if there will be any amount of Project sales in excess of new demand, and if so, what impact that will have on the existing retail base as a percent of the sales base. The analysis further considers what excess demand, if any, would remain after absorption of the Project's sales.

The results of the analysis in Exhibit 17 indicate that on the scale of the entire City of Sacramento, the Project will not result in a sales impact on existing retailers. This is attributable to the expectation that the Project's net new sales of $20.8 million will comprise only a portion of the new demand generated by Sacramento households by 2019. This level of future demand totals an estimated $65.5 million, pursuant to an increase in almost 3,000 new households by 2019, and the anticipated per household retail spending estimate of $22,300 (see Exhibits 7 and 14). Even with absorption of the Project's sales there will be an estimated $44.7 million in yet additional new retail demand generated by Sacramento households, indicating that the Project only needs to absorb a portion of the new citywide demand to achieve market success. Thus, at the level of the entire City of Sacramento, the Project is not anticipated to result in any sales impact on the existing Sacramento retail base.

Market Area Sales Base Impacts. The sales impact analysis for the Project's market area is documented in Exhibits 18 and 19. This analysis is similar to the citywide analysis, but also takes into account the volume of retail sales leakage estimated for the market area. For this analysis, the volume of Project sales examined is the volume anticipated to be supported by market area households, which is $16.6 million. This is because only this volume of sales has the potential to be diverted from market area retailers, since the remaining 20% of sales generated by households living outside the market area is assumed to not otherwise be spent in the market area.

As estimated earlier, the market area is characterized by a high level of retail sales leakage. This is because the market area is relatively devoid of regional retail shopping opportunities, although relatively well supplied with neighborhood- and community-oriented shopping opportunities. Nonetheless, the enhanced shopping opportunities provided by the Project could serve to help recapture some existing retail leakage, and this recapture is a component of the market area's impact analysis. The amount of recaptured leakage will depend upon the nature of the Project's retail opportunities and the complexity of the retail purchase. As a relatively small center, the Project will not have the ability to absorb all the noted leakage, or even a majority of the leakage.

Potential Project leakage recapture figures are based upon assumptions prepared by ALH Urban & Regional Economics. The assumptions vary by category, depending upon the nature of the prospective Project tenant, the type of existing market area retailers, and the likelihood that retailers outside the market area will continue to attract sales from the market area due to their brand, national orientation, or regional prevalence. For purposes of the analysis, ALH Economics assumes that if anticipated net new Project sales generated by market area households are less than 25% of the estimated leakage, then 100% of the Project's net new sales generated by market area households are anticipated to be absorbed through leakage. If the net new Project sales generated by market area households are equal to 25% to 50% of the leakage, then 50% of the Project sales are anticipated to be absorbed through leakage. If the net new Project sales generated by market area households comprise more than 50% of the estimated leakage then only 37.5% of the Project sales are anticipated to be absorbed through leakage. This approach controls the amount of retail leakage recaptured by the Project.

Consideration of recaptured leakage comprises the first layer of the Project's market area sales impact analysis. This is presented in Exhibit 18, which shows that given the above recapture assumptions, the Project as a whole is assumed to recapture 6.2% of the market area's retail leakage. The amount of recaptured leakage varies by category, ranging from 2.4% in the General Merchandise Stores category to 18.5% in the Food & Beverage Stores category. Overall, the assumed recaptured sales accounts for $10.2 million in Project sales, resulting in a net remaining impact of $6.4 million, which comprises 1.7% of the market area's existing retail base. This impact, however, is prior to consideration of new household growth and associated retail demand, which are further estimated and accounted for in Exhibit 19.

Exhibit 19 demonstrates that once new market area demand is taken into consideration, comprising an estimated 986 households between 2015 and 2019 with demand totaling $22.9 million, and assuming the Project can meet the retail shopping needs of new market area households, there are no retail categories with residual impacts on the existing market area retail base. This reflects the relatively low net new sales associated with the Project. These findings are summarized in Table 7, below.

Table 7. Project Sales Impacts on Existing Sales Base

Retail Category	Market Area Sales Base	Total Net New Project MA Sales	Estimated Absorbed Leakage	Sales Impact Less Absorbed Leakage	Less New Market Area Demand	Sales Impact Less New Demand
Motor Vehicle & Parts Dealers	$63,031,269	$0	$0	$0	($3,160,209)	$0
Home Furnishings & Appliances	$9,746,076	$1,371,667	($1,371,667)	$0	($1,181,178)	$0
Buildling Materials & Garden Equip.	$11,621,657	$956,406	($956,406)	$0	($1,379,616)	$0
Food & Beverage Stores	$86,713,070	$2,640,000	($1,320,000)	$1,320,000	($3,918,388)	$0
Gasoline Stations	$55,084,956	$0	$0	$0	($2,643,047)	$0
Clothing & Clothing Accessories	$6,288,545	$1,637,358	($1,637,358)	$0	($1,623,093)	$0
General Merchandise Stores	$36,288,298	$947,812	($947,812)	$0	($3,187,558)	$0
Food Services & Drinking Places	$59,059,395	$4,493,170	($1,684,939)	$2,808,231	($2,918,029)	$0
Other Retail Group	$55,804,046	$4,589,339	($2,294,669)	$2,294,669	($2,873,257)	$0
Total	$383,637,312	$16,635,752	($10,212,851)	$6,422,900	($22,884,375)	$0

Sources: Exhibits 6, 13, 18, and 19.

The market area Project impact analysis indicates that with consideration of existing leakage and anticipated demand from future growth, the Project's new retail space is not anticipated to result in negative impacts on existing retailers.

Conclusion Regarding Project Impacts on Store Closures

The Project impact analysis indicates that no negative store impacts are anticipated pursuant to Project development. Thus, no existing market area stores are projected to close as a consequence of declining sales attributable to Project development. However, relocation of the existing Freeport Boulevard Raley's store to the Project will result in the vacancy of an existing 60,000-square-foot market area retail space. Thus, relative to Project impacts, the key consideration in the urban decay analysis is the outcome of the existing Raley's space after store relocation. Market factors influencing this potential outcome are discussed in Chapter IX. Urban Decay Determination.

VII. COMPETITIVE STORE IMPACTS

This chapter discusses the market area and environs grocery and food stores. These stores were identified and reviewed as part of the study in the event the study findings found the potential for Project impacts on existing stores. As noted in the prior chapter such impacts were not identified; however, this information is presented for general background, especially with regard to the cumulative project analysis in the following report chapter.

COMPETITIVE GROCERY STORES

There are a number of grocery and food stores distributed throughout the market area and in nearby areas outside the market area boundaries, including upscale markets, traditional grocery stores, discount stores, and general merchandise stores selling groceries (e.g., Target). There are also numerous independent stores, mostly of an ethnic orientation. In addition, there are smaller markets selling food items useful for the preparation of limited meal preparation. All of the identified stores are mapped on Exhibit 20, and listed on Exhibit 21. Exhibit 21 also identifies the address and location of the stores (e.g., inside or outside of the Project's market area), the store distance from the Project site, the shopping center name if relevant, identification of other shopping center tenants, and the number of retail vacancies per shopping center.

For the purpose of the analysis ALH Economics visited all of the cited shopping centers and many of the cited grocery stores, including all stores in and immediately surrounding the market area. The purpose of these visits was to classify the stores and assess their overall condition, especially in the context of heightened competition resulting from the Project's new Raley's store. Stores close to but not in the market area have relevancy as they likely have some market area overlap with the Project. This speaks to the relevancy of identifying the store distance from the Project site, as it is an indicator of the likely degree of market area overlap.

IDENTIFICATION OF COMPETITIVE GROCERY AND FOOD STORES

Upscale Grocery and Food Stores

Upscale stores focus on providing extensive or exclusive product selection often in a stylized setting. There is usually an emphasis on fresh foods, gourmet products, and organic foods at upscale stores. These stores have wider aisles and nicer decors, such as wood flooring in the produce section. It can sometimes be difficult to distinguish upscale stores from the more traditional stores, but ALH Economics believes that three market area stores exhibit more of an upscale orientation. These include the existing Raley's store that will be replaced by the Project's Raley's store and two additional stores – Sprouts located approximately 0.9 miles from the Project site and Taylor's Market, located 1.8 miles from the Project site. This store is the most recent market entrant, opening in May 2012, replacing a former Asian-oriented market. Taylor's is also an independent, specialty-oriented market, with an associated restaurant space. All of these stores are not in standard shopping center locations, surrounded by limited other retailers, with no associated vacancies. There are also several upscale markets located outside the market area, including Nugget and Corti Brothers, the nearest of which is 3.7 miles from the Project site. The two Nugget stores are located in shopping centers, both of which are in good physical condition with limited vacancies, most of which are located in Southport Town Center, the Nugget-anchored shopping center located furthest from the market area, at a distance of 6.1 miles.

Traditional Grocery and Food Stores

Traditional stores are full-service grocery stores that offer most or all of the following: a fresh bakery; fresh meat and seafood; frozen foods including frozen meat; fresh produce; a deli counter; and prepared foods. Other specialties sometimes include organic foods, a flower selection, a pharmacy, or a photo center. The market area per se has a relative lack of traditional food stores, with the market area characterized by a more upscale and ethnic orientation. For lack another category, the market area's Target store with expanded food sales is categorized as a more traditional market. However, there are many more traditional grocery stores in the area immediately surrounding the market area. These include other Raley's stores, Bel-Air (under the same corporate ownership as Raley's), Safeway, and Save Mart. The nearest of these stores is 2.6 miles from the Project site, which is a Bel Air store. These more traditional grocery stores are generally located in neighborhood or community shopping centers, or in standalone locations or accompanied by only a few additional tenants. All of the shopping centers have multiple small shop vacancies, ranging from four to six vacancies. All, however, are in good physical condition.

Specialty and Niche Market Stores

Specialty and niche market stores are usually smaller stores that are distinguished from other stores by offering a certain type of grocery selection that is different than conventional stores. This may be the store's own, local, or imported brands of items, or oftentimes organic or natural foods products. In the Project's market area, there is one example of this type of store, Curtis Park Market, although the earlier referenced Taylor's Market also serves as a specialty market. The Curtis Park Market has a strong craft beer selection and offers limited grocery products for meal preparation. Outside the market area there are two well-established niche markets. These include the Sacramento Natural Foods Co-Op, located 3.1 miles from the Project site, and a Trader Joe's, further from the project site at a distance of 5.1 miles. The Sacramento Natural Foods Co –Op is very popular, and is presently undergoing a significant expansion (see next report section, VIII. Cumulative Project Impacts). There are yet other smaller stores in the market area and beyond, but these are not included as they tend to be relatively small, more convenience-oriented food stores, and not competitive with full-service grocery stores like the Project's planned Raley's.

Ethnic Markets

Ethnic food stores are stores that are distinguished from other stores by offering food products unique to a specific international culture or cuisine. These stores are often but not always smaller than conventional food stores. The market area features many of these stores, almost exclusively with an Hispanic orientation, with one additional market selling Asian products. Areas just outside the market area also have ethnic food store representation. In contrast to the market area, these stores are mostly Asian-oriented. Some of the market area's ethnic stores are located in small shopping centers, which are usually characterized by one or two small shop vacancies. The situation is similar for the cited ethnic stores located outside the market area, with the centers, often comprising larger shopping centers, characterized by two to three shop vacancies. Many ethnic stores, however, are situated in stand-alone locations.

Discount Grocery and Food Stores

Discount stores are characterized by lower-than-average price points. Sometimes these are manifested by bulk sales, which allow the customer to get more for their dollar relative to most other grocery stores. The market area has no discount food stores, reflecting the more upscale orientation of the

market area's food shopping opportunities. However, market area residents have discount food shopping opportunities nearby, as nearby areas outside the market area include numerous discount food shopping opportunities. These discount food shopping opportunities include two Smart & Final stores located adjacent to the market area boundary to the north and the south. Other discount food retailers located within 3.0 to about 5.0 miles of the Project site include Grocery Outlet, Foods Co, and Food Max. Similar to the other grocery-anchored shopping centers, many of the shopping centers were these stores are located have some shop vacancies, averaging about three per center.

MARKET AREA SUMMARY

In summary, the market area and nearby environs have a number of grocery and food stores, spanning several market orientations, including upscale, ethnic, specialty, conventional, and niche. ALH Economics believes the Project's Raley's store will be competitive with many of these stores, much like the current store is competitive with these existing stores. However, as noted in the preceding Chapter VI. Project Sales Impact Analysis, the store's estimated sales increase upon inclusion in the Project is not anticipated to negatively affect existing market area stores, or by extension other nearby stores. Moreover, the existing stores reviewed in this chapter appear to be in good physical condition, and located in neighborhood or community shopping centers also in good physical condition. While there may be up to four shop vacancies in some of the shopping centers where these competitive stores are located, the overall market conditions for the grocery and food stores in the market area and general environs appear reasonably healthy.

VIII. CUMULATIVE PROJECT IMPACTS

This analysis seeks to quantify the impact of the Project taking into consideration other planned competitive retail projects within and near the market area. The cumulative projects assessed for impacts include retail developments that are in various stages of entitlement or planning. Because specific development timelines are not available for many of the projects, the analysis carefully considers each project prior to determining the set of projects most likely to be operational during the Project's approximate timeframe.

IDENTIFIED RETAIL DEVELOPMENT PROJECTS

ALH Economics identified 24 potential cumulative retail development projects in and within a broad area around the market area by reviewing development pipeline materials maintained by the City of Sacramento. Only a few of the projects are located within the Project's market area, but many may have some market area commonality, and thus were reviewed and considered for relevancy. Information about these projects was primarily derived from the City's pipeline supplemented by additional information from project websites, the Sacramento Business Journal, and the Sacramento Bee. These 24 projects are described in Exhibit 22, which includes their address, square footage, development status, anticipated completion date, and distance from the Project Site.

The 24 projects included in Exhibit 22 total approximately 2.5 million square feet of retail space. Many of these projects are very substantial, with preliminary square footage figures that have not yet been refined or updated. One such example is Project #19, the Railyards project (project number refers to project identifier on Exhibit 22). This project has been on the City of Sacramento's pipeline for a long time, with its anticipated 1.4 million square feet of retail space planned and approved prior to the recent Great Recession. A portion of the infrastructure for this project has been built, but the project description could ultimately change when project development becomes more active. The planned project list also includes an estimated 115,800 square feet identified in scattered locations for projects that are in very early stages of planning, 182,000 square feet for a project whose timeline is undetermined, and 100,000 square feet for a neighborhood-oriented project whose location is too far from the Project to be deemed competitive.

ALH Economics reviewed the information on the planned projects, status, and anticipated timing, and identified the projects most likely to be developed during a timeframe concurrent with the Project, i.e., by 2019. This includes 11 of the projects listed on Exhibit 22, with a total of 723,622 square feet of net new retail space. After review and consideration, all other projects were deemed not likely to occur during the timeframe of the Project's construction and initial operation, and thus are not reasonably foreseeable. These projects are excluded from subsequent cumulative projects analysis, and are highlighted in light gray in Exhibit 22.

These 11 identified cumulative projects are summarized below, with more project detail included in Exhibit 22 and mapped in Exhibit 23.

- Curtis Park Village (#1) - The composition of this project's retail component has been the source of contention between the City of Sacramento, the project developer, and the community, with the main issue being the proposed gas station component of a proposed Safeway. There are two versions of this project, one of which includes the Safeway (Curtis Park Village) and one that would include a Grocery Outlet and related retail (Crocker Village). ALH

Urban & Regional Economics conservatively analyzed the Safeway version of this project as results in a higher competitive sales estimate, since Safeway typically outperforms Grocery Outlet in sales per square feet. As Curtis Park Village this project comprises 288 single-family units, 222 multifamily units, and 180,000 square feet of retail. This includes a 55,000-square-foot Safeway and other community-oriented retail, located 0.5 miles northeast of the Project site, approved and anticipated to be completed in 2017;

- AM/PM, Arco, and fast food restaurant (#3)- An estimated 5,050 square feet of convenience store, gas station, and fast food restaurant with a drive through, located 1.4 miles south of the Project site, with potential completion in 2017;
- CVS (#4) - A 17,200-square-foot store under construction, located 1.5 miles northeast of the Project site;
- Sacramento Natural Foods Co-Op (#7) - This project is under construction and is replacing the store at 1900 Alhambra Boulevard with an estimated 9,467 square feet of net retail expansion space and 320 parking spaces, located 3.1 miles north of the Project site, estimated to be complete in 2016;
- Whole Foods (#8) - An approved 41,000-square-foot Whole Foods store, 141 residential units, and three levels of parking, approximately 3.2 miles north of the Project site, estimated to be complete in 2017;
- 2101 Capitol Avenue (#10) - A part of the Whole Foods project, this approved project is 12,405 square feet of retail/commercial space and a 6-level parking garage, 3.2 miles north of the Project site, estimated to be complete in 2017;
- 401 Broadway (#12) - A mixed-used project with a total of 10,300 square feet of retail space, other commercial space, and condominiums located 3.1 northwest miles from the Project site; the building permits are in process, estimated to be complete in 2017;
- The Mill at Broadway (#13) – A mixed-use project under construction with 1,000 single-family units, 18,200 square feet of retail, and 6,000 square feet of office space located 3.5 miles northwest of the Project site, the final completion date is unknown;
- Downtown Commons (DOCO) (#16) - A mixed-use portion of a multi-use indoor venue for entertainment and sporting events in the former Downtown Plaza, with 1.5 million square feet of additional development including 475,000 square feet of office, 350,000 square feet of retail, a 250-room hotel, and 550 residential units located 4.6 miles from the Project, under construction and projected to open by Fall 2016;
- 700 Block K Street (#18) - A mixed-use project under construction with 12-15 retail spaces for predominantly local restaurants, retail, and nightlife and 137 apartments, located 4.8 miles away from the Project, estimated to open by 2016; and
- California Fruit Building (#20) - Current renovation of the California Fruit Building into 49,000 square feet of office space and 10,000 square feet of ground floor retail and restaurant space, located 5.0 miles from the Project, estimated to open in 2016.

All, but one of these 11 projects are anticipated to be completed by the end of 2017. The Mill at Broadway has unknown timing because the phased project does not have estimated starting dates for the retail portion.

CUMULATIVE PROJECT SALES ESTIMATES

Cumulative Projects Sales Estimates

Total Sales. Sales figures for the 11 cumulative projects anticipated to be competitive coincident (or approximately thereof) with the Project are estimated in Exhibit 24. The estimates were developed with

sensitivity to the size and nature of the prospective retail space, and range from $375 per square foot to $930 per square foot, as general sales estimations. These figures reflect estimates for generalized retail tenants based on the store sales survey presented in Exhibit B-1 or specific retail tenants or categories, depending upon the nature of the cumulative project. For example, sales are estimated for the Sacramento Natural Foods Co-Op expansion (#7) based on the range of sales for organic/gourmet grocery stores reported by Retail Maxim, this study's source of industry average retail sales per square foot. Sales associated with the planned CVS store (#4) are likewise based on an inflation-adjusted sales figure reported by Retail Maxim. The $375 per-square-foot figure assumed for all other projects reflects a generalized industry average figure, which ALH deemed sufficient given the relative lack of information about the planned projects with respect to tenant or retail composition.

For the full amount of planned retail development among the cumulative projects analyzed in Exhibit 24, which totals approximately 723,622 square feet, the estimated sales total $215.3 million. These sales estimates assume for most projects that 5%-15% of the space would be occupied by non-retail sales generating services. This assumption was not applied to the planned projects that entail single or a limited number of users. Smaller projects were assumed to have a lesser allocation. In general, the analysis assumed that projects with less than 20,000 square feet would have a 5% service allocation, projects with 20,000 – 100,000 square feet would have a 10% service allocation, and projects with greater than 100,000 square feet would have a 15% allocation. In addition, most projects, especially those above 20,000 square feet, were assumed to have a 5% vacancy factor. The exception again is projects reflecting single or a limited number of users.

The cumulative retail projects will compete with the Project's market area only to the extent that their market areas overlap. Exhibit 24 also shows estimates of the share of each cumulative project sales anticipated to be sourced from the same market area as the Project. These estimates are the result of generalized assumptions, based on consideration of the location of the projects, their distance from the Project site, and the anticipated nature of their retail space and likely consumer. Pursuant to individual assumptions regarding share of market area overlap with the Project, the cumulative projects are estimated to generate $26.9 million in sales competitive with the Project, and also generated by market area households. Following are explanations of the market area overlap assumptions for key cumulative projects.

- The AM/PM, Arco, and fast food restaurant (#3) is anticipated to have a smaller market area than the Land Park Commercial Center Project. A large portion of this project's market area is estimated to be subsumed within the Land Park Commercial Center Project's market area and is estimated to have a 60% overlap of market area sales with the Project.
- The CVS (#4) project is anticipated to have a smaller market area than the Land Park Commercial Center Project, but extending further east than the Project's market area given its location. Thus, this project is assumed to have a 40% overlap of market area sales with the Project.
- Curtis Park Village (#1) is estimated to have a different market area than the Project, extended to the north and east of areas encompassed by the Project's market area. Therefore, this project is estimated to have a 33% overlap with the Project's market area.
- The Mill at Broadway (#13) and 401 Broadway (#12) projects are estimated to have very localized market areas, including focused on serving the needs of their own project residents and occupants. Thus, the analysis assumes only approximately 10% of the sales at these two projects will be generated by Land Park Commercial Center Project market area residents.
- The Sacramento Natural Foods Co-Op (#7) is estimated to have a large market area given its unique product orientation. Accordingly, this project is assumed to have 15% market area

overlap with the Project, with demand for this store generated from a large geographic area with only partial overlap with the Project's market area.

- Based upon a recent market study conducted for the Whole Foods Store (#8), demand for this store is anticipated to be generated by employees working in the vicinity of the store as well as residents.[6] Further, the anticipated household-based market area for the Whole Foods store has only limited geographic overlap with the Project's market area, mostly at the northern end of the market area. Based upon these two factors, 5% of the Whole Foods sales are assumed to be generated by market area households.
- Downtown Commons (#16) is estimated to have a very large market area including both the City of Sacramento and the City of West Sacramento, with a small percentage traveling beyond these areas for events at the Arena. Therefore, this cumulative project is estimated to derive only 5% of sales from the Project's market area.
- The 700 Block of K Street (#18) is estimated to have 5% market area overlap with the Project. This estimate assumes this cumulative project will have a smaller market area than the Land Park Commercial Center Project, with limited physical overlap and numerous consumers originating from outside the market area
- The 2101 Capitol (#10) and California Fruit Building (#20) projects are assumed to have small market areas with little to no physical overlap with the Land Park Commercial Center Project, resulting in a 5% market area overlap assumption.

Sales by Retail Category. Assumptions were developed regarding the distribution of cumulative project sales by type of retail, using the BOE retail categories to facilitate the cumulative project impact analysis. This analysis is presented in Exhibit 25. Sales are distributed based upon professional judgement exercised by ALH Economics. Projects that are grocery store oriented are assigned 100% of sales to the Food and Beverage category. The sales at CVS are assigned to the Other Retail category as this is how these sales are categorized by the BOE at the city level. All other assumptions were developed by ALH Economics based upon the location, size, and type of retail space, and generally include a mix of most major retail categories, excepting Motor Vehicles and Parts Dealers and Building Materials and Garden Equipment.

Based upon the sales distribution assumptions, ALH Economics estimates that the competitive sales at the cumulative projects generated by market area households are as follows:

- $846,400 in Home Furnishings & Appliances;
- $13.9 million in Food & Beverage Stores;
- $819,000 in Clothing & Clothing Accessories;
- $824,900 in General Merchandise Stores;
- $3.1 million in Food Services & Drinking Places; and
- $7.4 million in Other Retail.

As noted, these sales increments total a net increase of $26.9 million in sales attributed to the cumulative projects.

[6] See "Market Demand Study: Proposed Whole Foods Market at 2025 L Street, Sacramento, CA" by AECOM, March 3, 2015.

ALL PLANNED PROJECTS SALES ESTIMATES

To fully assess the prospective sales impacts of the cumulative projects they need to be added to the net new sales estimated for the Project. This addition is shown in Exhibit 26, which totals $43.6 million. These are the total amount of sales projected for the Project and the 11 cumulative projects deemed competitive identified in Exhibits 22 and 23. The sales by retail category are presented below in Table 8.

Table 8. Competitive Cumulative Project Net New Sales by Retail Category, in $millions

Type of Retailer	Project	Cumulative Projects	Total
Motor Vehicles and Parts Dealers	$0	$0	$0
Home Furnishings and Appliance Stores	$1,371,667	$846,443	$2,218,109
Building Materials and Garden Equip	$956,406	$0	$956,406
Food and Beverage Stores	$2,640,000	$13,925,619	$16,565,619
Gasoline Stations	$0	$0	$0
Clothing and Clothing Accessories Stores	$1,637,358	$818,999	$2,456,357
General Merchandise Stores	$947,812	$824,892	$1,772,704
Food Services and Drinking Places	$4,493,170	$3,101,284	$7,594,453
Other Retail Group	$4,589,339	$7,418,550	$12,007,889
Total	**$16,635,752**	**$26,935,786**	**$43,571,538**

Source: Exhibit 26.

As noted in Table 8, Food & Beverage Stores comprises the largest category of competitive planned project net new sales at $16.6 million. This is notable as there has been an insurgence of grocery and food stores interested the changing area over the past two years. This sales amount is followed by $12.0 million for Other Retail. The next largest retail category is the Food Services and Drinking Places category at $7.6 million. Sales in all other competitive categories are less than $2.5 million.

Impact Analysis

In an analysis parallel to the Project impact analysis, the cumulative project impact analysis is documented in Exhibit 27 for the cumulative projects inclusive of the Land Park Commercial Center Project. This exhibit takes into consideration the anticipated sales by retail category from the Project and the cumulative projects, focusing on the sales anticipated to originate from the Project's market area for each project. As with the Project's sales impact analysis, the cumulative projects analysis includes consideration of existing retail leakage from the Project's market area and interim demand generated by the time the Project experiences its estimated first full operational year in 2019.

The results in Exhibit 27, which are summarized Table 9 on the next page, indicate maximum cumulative project impacts on market area retailers totaling $7.6 million. This compares to no impact associated with just the Project. The figures in Table 9 indicate that three categories are estimated to experience cumulative sales impacts after recaptured retail sales leakage and new household demand are taken into account. These categories include Food & Beverage Stores with $5.5 million in impacts, Food Services and Drinking Places with approximately $900,000 in impacts, and Other Retail with $1.2 million in impacts.

Table 9. Project and Cumulative Project Sales Impacts on Existing Sales Base

Retail Category	Market Area Sales Base	Total Net New Cumulative Project Market Area Sales	Estimated Recaptured Leakage	Sales Impact Less Absorbed Leakage	Market Area Demand	Sales Impact Less New Demand	
						Amount	Percent of Sales Base
Motor Vehicle & Parts Dealers	$63,031,269	$0	$0	$0	$3,160,209	$0	0.0%
Home Furnishings & Appliances	$9,746,076	$2,218,109	($2,218,109)	$0	$1,181,178	$0	0.0%
Building Materials & Garden Equip.	$11,621,657	$956,406	($956,406)	$0	$1,379,616	$0	0.0%
Food & Beverage Stores	$86,713,070	$16,565,619	($7,151,922)	$9,413,697	$3,918,388	$5,495,309	6.3%
Gasoline Stations	$55,084,956	$0	$0	$0	$2,643,047	$0	0.0%
Clothing & Clothing Accessories	$6,288,545	$2,456,357	($2,456,357)	$0	$1,623,093	$0	0.0%
General Merchandise Stores	$36,288,298	$1,772,704	($1,772,704)	$0	$3,187,558	$0	0.0%
Food Services & Drinking Places	$59,059,395	$7,594,453	($3,797,227)	$3,797,227	$2,918,029	$879,197	1.5%
Other Retail Group	$55,804,046	$12,007,889	($7,925,207)	$4,082,682	$2,873,257	$1,209,425	2.2%
Total	$383,637,312	$43,571,538	($26,277,932)	$17,293,606	$22,884,375	$7,583,931	2.0%

Sources: Exhibits 13 and 27.

The impacts in the Food Services & Drinking Places and Other Retail Group are relatively low impacts, comprising 1.5% and 2.2% of the market area sales base, respectively. These percentages are so low that they are not anticipated to result in existing store closures. These levels of sales impacts are likely not sufficient to result in restaurant or store closures, especially since the impacts are likely to be spread throughout the market area, such that no single operation is likely to bear much of the burden of the sales loss. Moreover, based upon the sales per square foot metric presented earlier for Food Services and Drinking Places (e.g., $528 per square foot per Exhibit 16), this volume of sales is equivalent to support for approximately 1,660 square feet. This is a very low increment of space, which would result in an insignificant complement of vacant retail space if such space became vacant as a result of the cumulative projects. In like manner, the generic sales per square foot for Other Retail in Exhibit 16 is $432 per square foot. Given the $1.2 million in sales impact this is equivalent to 2,800 square feet, which again is an insignificant amount of retail space.

The estimated cumulative project impacts in the Food & Beverage Stores category are of a more substantial nature, comprising an estimated $5.5 million, or 6.3% of the market area sales base. The Project itself comprises only a small portion of the cumulative project sales, equivalent to 16% of the Food & Beverage store sales anticipated to be generated by market area residents. Thus, the bulk of these cumulative impacts are attributable to other major new food stores, e.g., Safeway at Curtis Park and Whole Foods.

For the projected sales impact to occur, market area residents would need to divert their sales to these new stores from other existing stores in the market area. Given the nature of the cumulative projects with the bulk of the food sales, e.g., Safeway, Whole Foods, and Raley's, the sales are anticipated to be diverted from other stores selling comparable goods. This comprises stores with a more conventional, upscale, or health orientation, and likely not any of the market area's smaller, ethnic-oriented stores. Thus, the stores most likely to be competitive with the cumulative projects include the market area's upscale and traditional markets, which include Sprouts, Taylor's Market, the Raley's store itself, and Target's food-based sales. While Raley's is itself a cumulative project, it is also a store that could experience sales impacts from the growing base of food stores represented by Safeway and Whole Foods.

Using the above-referenced sales per square foot approach, the $5.5 million in sales impact is equivalent to support for approximately 9,200 square feet of retail space. The cited impacts are anticipated to be spread across at least the four cited market area stores, and thus are not anticipated to comprise a sufficient amount of sales loss to result in existing store closures. Each of these stores is a well-established store with loyal customers, demonstrated by strong customer traffic noted during

ALH Economics fieldwork, as well as select social media reviews. As the newest store in the market area (e.g., May 2012 opening), Sprout's will have the least loyal customer base, making this store possibly most at risk of sales declines.[7] However, its product mix and orientation will likely help insulate it from impacts, including unique meat products and health supplements. And while newer, the store already has a 3.5-year tenure in the market area. The most likely impact, however, is that select existing stores will experience some sales declines, including Raley's itself, but not sufficient to result in store closure. Ultimately, these sales declines are likely be recovered over time as market area population continues to grow and market area households experience growing wealth.

Cumulative Impacts Conclusion. The cumulative impacts analysis concludes that existing food stores in the market area may experience some sales declines as a result of the new competitive store sales. These sales declines are not anticipated to be sufficient to result in store closure, although the existing Sprout's store could experience the greatest declines because of its relatively shorter-term presence in the market area. ALH Economics believes it is unlikely that this or any other market area food store will close as a result of the cumulative impacts. However, if such closures do occur, even with the introduction of the cumulative projects, the findings suggest that additional retail leakage and unmet new retail demand will still remain for other retailers, as noted in Table 10.

Table 10. Remaining Market Area Leakage and Unmet New Demand

Leakage and New Demand Characteristic	Amount
Total Market Area Leakage	$164,557,944
Leakage Absorbed by Cumulative Projects	-$26,277,932
Remaining Market Area Leakage	$138,280,012
Total New Market Area Demand	$22,884,375
New Demand Absorbed by Cumulative Projects	-$7,583,931
Remaining New Demand	$15,300,444
Total Remaining Leakage and New Demand	$153,580,456

Source: Exhibit 27.

As the findings in Table 10 indicate, even with absorption of the cumulative projects, retail leakage totaling $138.2million will still remain generated by market area households. This will be compounded by $15.3 million in unmet retail demand by 2019, the Project's first full year of operations. Thus, the market area is anticipated to be characterized by more than sufficient unmet demand to support backfilling of any retail commercials spaces that might become vacant as a result of cumulative project impacts. This unmet demand, totaling $153.6 million, comprises demand for all major retail categories included in this analysis.

[7] Sprouts located in space formerly occupied by Sunflower Market (see Exhibit 30).

IX. URBAN DECAY DETERMINATION

The purpose of this chapter is to assess the degree to which development of the Land Park Commercial Center Project would or would not contribute to or cause urban decay. This includes impacts associated with the Project combined with other cumulative planned retail development. This chapter discusses the definition of urban decay, the study's approach to determining urban decay potential, and ALH Economics' urban decay determination.

STUDY DEFINITION OF URBAN DECAY

For the purpose of this analysis, urban decay is defined as, among other characteristics, visible symptoms of physical deterioration that invite vandalism, loitering, and graffiti that is caused by a downward spiral of business closures and long term vacancies. This physical deterioration[8] to properties or structures is so prevalent, substantial, and lasting for a significant period of time that it impairs the proper utilization of the properties and structures, and the health, safety, and welfare of the surrounding community.

APPROACH TO DETERMINING URBAN DECAY POTENTIAL

ALH Economics engaged in several tasks to assess the probability of urban decay ensuing from Project development and the identified cumulative projects. These tasks revolved around assessing the potential for closed retail store spaces, if any, to either (a) remain vacant for a prolonged period of time such that they contribute to the multitude of causes that could eventually lead to urban decay, or (b) be leased to other retailers within a reasonable marketing period.

The purpose of this research was to determine if sufficient retailer demand exists to absorb vacated space in the event existing retailers close due to any negative economic impacts of the Project and the development of other planned cumulative retail. An additional purpose was to assess the potential for long-term vacancies to devolve into urban decay. ALH Economics conducted field research and contacted real estate brokers and third party resources to determine the commercial health of the market area.

THE CURRENT ENVIRONMENT

ALH Economics conducted fieldwork throughout the Project's market area and surrounding portions of the City of Sacramento. The purpose of this fieldwork was to perform reconnaissance of the Project site, identify and visit select competitive retailers, examine the physical condition of major shopping centers and commercial shopping corridors, and identify existing retail vacancies and assess their condition and appearance. These personal observations are complemented by historical and current retail market performance data, demonstrating the underlying strength or weakness of the local commercial retail market.

[8] The manifestations of urban decay include such visible conditions as plywood-boarded doors and windows, parked trucks and long term unauthorized use of the properties and parking lots, extensive gang and other graffiti and offensive words painted on buildings, dumping of refuse on site, overturned dumpsters, broken parking barriers, broken glass littering the site, dead trees and shrubbery together with weeds, lack of building maintenance, homeless encampments, and unsightly and dilapidated fencing.

Retail Market Statistics

Historically, the City of Sacramento has maintained a moderately healthy retail market sector. Historical trend data in Exhibit 28 presents quarterly vacancy, absorption, and new construction trends in Sacramento beginning 1st quarter 2006 through 3rd quarter 2015. This exhibit indicates that the retail inventory in all of Sacramento totals 36.8 million square feet.

As shown in Exhibit 28, as of 3rd quarter 2015 Sacramento had an overall retail vacancy rate of 8.5%. This rate comprises a relative low in recent years, since hitting a peak of 10.6% in both 1st quarter 2010 and 1st quarter 2011. Prior to that time period the Sacramento vacancy rate was as low as 5.9% in 4th quarter 2007, which is healthy vacancy rate. All of these rates, however, indicate a retail market characterized by a healthy and stable retail base throughout Sacramento.

In general, retail markets are deemed most healthy when there is some increment of vacancy, at least 5.0%, which allows for market fluidity and growth of existing retailers. Even retail vacancy rates at the 10.0% level are generally considered a reasonably healthy retail market. Thus, the current Sacramento retail vacancy rate of 8.5% is a reasonable rate and indicative of a strong market.

There are no retail market statistics specific to the Project's market area. However, field observation of the market area coupled with compilation and review of representative market area retail vacancies suggests that the retail vacancy rate in the market area is relatively comparable to the citywide vacancy rate.

Representative Retail Lease Transactions

Table 11 demonstrates that retail vacancies in the market area and Sacramento as a whole are finding new tenants. This table summarizes 253 retail lease transactions for retail spaces that occurred over the one-year time frame generally from mid-October 2014 to mid-October 2015. Most of these were previously occupied retail spaces.

Table 11. Market Area and Sacramento Retail Lease Transactions
10/13/14 - 10/13/15

Geography	Number of Leases	Total Sq. Ft.	Largest Space	Average Sq. Ft.
Market Area	11	21,555	8,684	1,960
Sacramento	253	967,348	132,000	3,824

Sources: CoStar; and ALH Urban & Regional Economics.

The 253 lease transactions in Sacramento totaled approximately 967,348 square feet of leased space, with a relatively small average of 3,824 square feet. The largest lease transaction during this timeframe was 132,000 square feet for a Walmart Supercenter. Other large lease transactions during this time included the following:

- 22,000 square feet for Paul Blanco's Good Car Company;
- 9,000 square feet for Leatherby's Family Creamery;
- 32,669 square feet for Sports Authority;
- 22,540 square feet for Budget Moving and Storage;
- 27,870 square feet for Smart & Final;
- 6,000 square feet for Pour Society;

- 9,100 square feet for Sauced BBQ and Spirits;
- 21,150 square feet for PB Social;
- 50,000 square feet for Century Theatres;
- 31,912 square feet for Cinema West Theaters;
- 8,865 square feet for Universal Wholesale; and
- 19,608 square feet for Viva Supermarket.

As a small subset of the entire Sacramento market, the market area achieved 11 lease transactions, totaling 21,555 square feet. The largest of these transactions totaled 8,684 square feet, with an average of 1,960 square feet. This lease transaction was for George L. Klumpp – Chapel of Flowers, which is not a traditional retail use. However, the remaining retail lease transactions were for more traditional retail spaces, and indicate that the market area is a dynamic area with interest to retailers seeking a range of small to medium-sized retail spaces.

Existing Vacancies

ALH Economics conducted fieldwork in the market area and its immediate environs to assess the condition of existing retail vacancies. A selection of properties was identified representing a range of vacancies, including the Project site. This selection was weighted toward properties with larger sized vacancies due to the large size of the existing Raley's space that will become vacated upon Raley's relocation to the Project. However, some smaller vacancies were also sampled due to proximity and to provide a more even examination.

The identified market area and environs vacancies are listed in Exhibit 29. This includes property name or identifier, address, distance from the Project site, year built if available, retail space available, and identification of former use (if available). In general, these include vacancies at older and newer shopping centers, or in stand-alone locations.

Following are photos and comments regarding some of the representative vacancies, including the Project site. As noted in the photo comments, in general the vacancies were found to be well maintained with limited signs of urban decay, although a few properties displayed boarded up windows, visible signs of trash, or a small amount of graffiti. While these are indicators of some lax property maintenance practices, they are not escalated to the condition of urban decay because they are not impairing the use of the properties and structures, and do not appear to be impacting the health, safety, and welfare of the surrounding community, as discussed above in the definition of urban decay.

The vacancies are presented based upon distance from the Project site, with an emphasis on including vacancies located closest to the Project site. As noted, this is a sample of the identified vacancies. The numbers cited at the beginning of each vacancy description match the number identifiers on Exhibit 29. The first vacancy does not have a number, as it is the Project site. As such, the property is not available for lease, which was a basic criterion for property inclusion on Exhibit 29.

Existing Project Site. Below are three photos of the former Capital Nursery property that will be demolished to facilitate Project development. This structure has been vacant since 2012 when Capital Nursery ceased operations. Accordingly, this property has remained closed and vacant for over three years. As can be seen in the photos, despite long term vacancy, this property has been well-maintained with no signs of decay or deterioration, such as boarded up windows and doors or visible graffiti.

1. Park Center, 4491-4543 Freeport Boulevard, Former O'Reilly Auto Parts, 0.3 miles from Project site. This is a 4,995-square-foot shop vacancy in the Project's market area, formerly occupied by O'Reilly Auto Parts. Park Center is a 17,849-square-foot strip shopping center. This vacancy and the entire center appear to be in good physical condition with no visible signs of decay.

2. Freeport Shopping Center, 5101-5171 Freeport Boulevard, Former Computer Store, 0.3 miles from Project site. This is a former computer store located in the market area's Freeport Shopping Center, a medium-sized strip shopping center. This vacancy comprises 3,080 square feet. The center appears to be an older commercial property but is moderately well maintained, with no visible signs of decay. Center tenants include small local stores, including ethnic-oriented stores. These tenants include Shannon's Drapes, billiards, liquor, Crystal Aquarium, beauty salon, restaurant, nail salon, dry cleaners, cigarettes, and phone store, among others.

4. Lanai Center, 5663-5713 Freeport Boulevard, Former Waldorf School, 0.7 miles from Project site. While not pictured, this center has a 10,000-square-foot vacancy that is in good condition, having only recently been placed on the market when the former Waldorf School tenant relocated the end of 2015. This older center, built in 1965 and renovated in 1987, shows no signs of disrepair. This center comprises three lots that were merged together.

5 & 6. Florin West Center, 7135 S. Land Park Drive and 1299-1309 Florin Rd, Former Hollywood Video and other vacancy, 1.2 miles from Project site. This is an older shopping center anchored by Bel Air Market. There is a long time vacancy of an 8,000-square-foot Hollywood Video store (first photo below). There are other small shop vacancies, including the second and third photos. These are likely in addition to the vacancies cited on Exhibit 29. The second vacancy pictured below has a limited amount of graffiti on a window, but the third photo displays another well-maintained vacancy. Hence, the center is generally well maintained. Florin West Center tenants include Bel Air, Round Table Pizza, a Mexican restaurant, a liquor store, cleaners, nails, hair salon, O'Reilly Auto Parts, Chase Bank, a bakery, Kumon Learning Center and other personal services-oriented businesses.

7. South Hills Shopping Center, 5820 S. Land Park Drive, former Vic's IGA Market, 1.5 miles from Project site. This is part of South Hills Shopping Center, with the former Vic's IGA Market comprising a 29,000-square-foot vacancy. This store closed in February 2015. There is fencing around the building with a sign that says "New Business Underway - Watch for Upcoming Improvements." Even though this space is vacant, the building and lot do not show any signs of deterioration or decay. The large parking lot is well maintained.

8. **South Hills Shopping, 5990 S. Land Park Drive, 1.7 miles from Project site.** This is an older neighborhood shopping center, with a dated appearance. The center includes many tenants in addition to approximately 2-3 small vacancies (plus the above-referenced vacancy). The center is generally well-maintained, and demonstrates evidence of upkeep, including apparent remediation of past graffiti. The center also appears to have recently secured at least one new tenant (cleaners). Other existing tenants include a hair salon, liquor, pizza, US Post Office, Jazzercise, D&P Cards, computer, massage, insurance, florist, bar, and other business services.

17. Florin Square Shopping, 2326 Florin Road, former Bowling Alley, 3.4 miles from Project site. This vacancy is relatively distant from the Project site, but is included as it comprises one of the largest vacancies near the Project site, at almost 40,000 square feet. This is an older shopping center, with some visible trash in the parking lot (mostly fast food items and beverage cans), but is otherwise well maintained and actively being marketed. Existing tenants include a wig shop, beauty supply, thrift type store, shoe repair, nails, cigarette store, bingo parlor, pharmacy, and a Chinese restaurant. According to a marketing flyer for the property the bowling alley space is undergoing remodeling activity. Moreover, the bowling alley space, which has been vacant since at least 2013, has recently been leased, with improvements underway for the new tenant, Fitness Evolution, which anticipates occupancy in 2016. The photos below include the vacant bowling alley space and a general photo of Florin Square Shopping Center.

Representative Vacancy Summary. As the preceding photos demonstrate, the existing vacancies span a range of conditions, including individual instances of graffiti, trash, and boarded up windows (not shown). However, none of these conditions are extreme enough to be labeled urban decay, as they are relatively isolated and usually not paired with other indicators. Moreover, there is also evidence of graffiti remediation. This is true of properties that have been vacant for extended periods of time, as well as vacancies of shorter duration. Therefore, despite some isolated indicators of lax property maintenance practices, the overall condition of the longer term vacancies is indicative of reasonably good property management in the face of prolonged vacancy. Further, the few instances of lax property maintenance practices are not escalated to the condition of urban decay because they are not impairing the use of the properties and structures, and do not appear to be impacting the health, safety, and welfare of the surrounding community.

Retail Backfilling Examples

ALH Economics compiled a representative list of examples of backfilled retail tenants in Sacramento. The purpose of the list is to demonstrate the potential for backfilling of retail vacancies, including the existing Raley's store that will be vacated when Raley's relocates to the Project as well as any vacancies that might result from the cumulative project's sales impacts. The representative list includes select examples of backfilled grocery store spaces. This list is presented in Exhibit 30, and includes 10 backfilling examples.

Several of the backfilled retail space examples are mid- to large-sized, with the majority in the 20,000 to 30,000-square-foot range. Examples on this list include the Sprouts grocery store in the Project's market area, located 0.8 miles from the Project site, which was previously an Asian-oriented market. In like manner, a former Nugget Market space on Riverside Boulevard 3.7 miles from the Project site was backfilled by a Grocery Outlet. The former Rick's Uptown Market on Capitol Avenue 3.3 miles from the Project site was also backfilled by Grocery Outlet. Yet other backfilling examples include different types of tenants, such as California Family Fitness backfilling a former Longs Drugs pharmacy space, Planet Fitness backfilling Big Lots, and Anna's Linens backfilling Office Max space.

The representative vacancy cited above (#17) is yet another example of a large vacant retail space backfilled by a fitness facility.

This representative list of good-sized retail backfill examples is a strong indicator of the reuse potential of larger retail spaces and the attraction of the retail market in Sacramento. The examples in Exhibit 30 also include an example of an existing space being subdivided to accommodate smaller tenants. These are just some representative examples collected for the purpose of this study, and this list is not comprehensive. The presence of these and yet other backfilling examples in Sacramento shows that the market has the demonstrated ability to backfill retail vacancies, including former grocery store space as well as larger spaces subdivided for multiple tenants. This information suggests that the vacated Raley's space will not comprise a market anomaly, and thus has as much potential to achieve successful backfilling as other representative retail spaces in the market. This includes the potential to be backfilled by a fitness facility, which the brokerage company representing the space indicates is a prospective target tenant for occupation of the space after it is vacated by Raley's. In addition, the backfilling examples indicate that any retail vacancies that might occur as a result of cumulative project impacts have the potential to be backfilled and also not contribute to conditions of urban decay or deterioration, including other food store spaces that might become available due to the cumulative project impacts.

REGULATORY CONTROLS

Owners of commercial retail properties are generally financially motivated to maintain property in a manner appropriate to retain existing tenants and attract new retail tenants. This appears to generally be the case in the City of Sacramento, as evidenced by the overall positive prevailing physical condition of the retail vacancies in these jurisdictions. If property owners lag, however, and property maintenance begins to show signs of deferred maintenance or other disrepair, these two areas have regulatory controls that can be implemented to avoid the onset of deterioration or decay. A review of these regulations follows.

City of Sacramento

City ordinances, such as the City of Sacramento Municipal Code of Ordinances Chapter 8.04 on Nuisances Generally, specifically 8.04.060 on Responsibility for Proper Property Maintenance, Chapter 8.16 on Abatement Procedure for Abandoned, Wrecked, Dismantled, or Inoperative Vehicles, Chapter 8.20 on Summary of Dangerous Vehicles, Chapter 8.24 on Graffiti Abatement, Chapter 8.28 on Weed and Rubbish Abatement, Chapter 8.76 on Securing Unimproved or Unoccupied Real Property, Chapter 8.96 Dangerous Buildings Code, Chapter 9.16.140 on Trespass on Private Property or Business Premises Prohibited, Chapter 15.16 on Dangerous, Unsafe, or Insanitary Buildings, and Chapter 15.52 on Vacant Buildings and Structures require property owners to maintain their properties so as not to create a nuisance by creating a condition that reduces property values and promotes blight and neighborhood deterioration.[9] Enforcement of these ordinances can help prevent physical deterioration due to any long-term closures of retail spaces. The City of Sacramento's Code Compliance Division is part of the Community Development Department. The Department currently has four Supervisors, 12 Code Enforcement Officers, one Principle Building Inspector, three supervising Building Inspectors, 16 Building/Rental Housing Inspectors, one Code

[9] City of Sacramento, "Municipal Code," http://www.qcode.us/codes/sacramento/ (accessed January 2016).

Enforcement Manager, one Housing & Code Enforcement Chief and approximately six Administrative/Customer Service Representatives within the Code Enforcement Division.[10]

Code enforcement within the City of Sacramento is done on both a proactive basis by the Code Compliance Department and a complaint basis by the public, with the majority being reactive.[11] Public complaints can be made through the City's website, by email, and by calling the 311 service. The process for abating the violation depends on the severity and hazard level of the violation. A critical violation receives an immediate response to the complaint and usually is resolved within 2-3 days, while minor issues can take up to two-four weeks for response. Some building violations/cases may take much longer depending upon the specific circumstances.[12] An initial notice to a property owner allows a specified amount of days for voluntary abatement. If the violation is not abated and a second notice is required, a fee will be assessed along with a claim on the property title.[13].

The City of Sacramento Municipal Code Section 8.04.120 on Commencement of nuisance abatement proceedings—Issuance of notice and order, Section 8.04.130 on Fees imposed, Section 8.04.140 on Notice and order—Service generally, Section 8.04.150 on Method of service, and Section 8.04.160 on Proof of service of notice and order states that once a nuisance has been determined the property owner on record, the lease on record, the owner of any estate or legal interest in the building will receive in person or by certified mail and a posted copy of the property itself, a written notice describing the nuisance, action required to abate the nuisance, a set amount of time to abate the nuisance, options to appeal the notice, and advises the property owner of the potential consequences if the nuisance is not abated.[14] In addition, according to Section 8.04.350 on Lien or personal obligation any work performed by or on behalf of the city including administrative costs, "shall be assessed against the subject premises as a lien or made a personal obligation to the owner or both a personal obligation and a lien."[15]

In 2013 the Code Compliance Department opened 18,349 cases and closed 18,404, providing a closure rate of over 100%; in 2014 18,908 cases were opened and 18,669 were resolved, proving a closure rate of 99%; and in 2015 20,456 cases were opened and 20,289 were resolved, providing a closure rate of 99%. The majority of these cases are violations related to code, weeds, environmental, fire, graffiti, housing, housing/code, vehicle, and work without permits, with an estimate of 90% relating to residential property and only 10% relating to commercial property. The majority of commercial property violations relate to illegal fences, illegal businesses, land use, and signs.[16] The City of Sacramento Code Compliance Department has a special Anti-Graffiti Program that works with City residents by:

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[10] Code Enforcement Department, Code Enforcement Manager, City of Sacramento; interview conducted January 2016.
[11] Ibid.
[12] Ibid.
[13] City of Sacramento, "Municipal Code," http://www.qcode.us/codes/sacramento/ (accessed January 2016).
[14] City of Sacramento, "Municipal Code Section 8.04.120 on Commencement of nuisance abatement proceedings—Issuance of notice and order, Section 8.04.130 on Fees imposed, Section 8.04.140 on Notice and order—Service generally, Section 8.04.150 on Method of service, and Section 8.04.160 on Proof of service of notice and order," http://www.qcode.us/codes/sacramento/ (accessed January 2016).
[15] City of Sacramento, "Municipal Code Section 8.04.350 on Lien or personal obligation," http://www.qcode.us/codes/sacramento/ (accessed January 2016).
[16] Code Enforcement Department, Code Enforcement Manager, City of Sacramento; interview conducted January 2016.

- providing, free of charge, one of four standardized paint colors for residents to utilize in graffiti removal on their own property;
- providing custom color matched paint up to one gallon on a one time basis for the property owner to abate their own property;
- abating graffiti on any City structure located near or around their property or neighborhood; and
- providing anti-graffiti information and referral services. We will abate graffiti on private residences whose owners fail to comply with the City of Sacramento's current anti-graffiti ordinance. These property owners are subject to a service fee and clouded property title.[17]

The program also provides information on methods to remove graffiti and residents can also call 311 24 hours a day to report any graffiti.

In addition, the City of Sacramento Code Compliance Division has a Vacant Buildings Program. Within this program a neglected vacant property can be cited as a public nuisance if one of the following violations continues for 30 days:

- Exterior not up to code;
- Windows and/or doors are boarded, not ready for occupancy;
- Structure is a neighborhood blight and may include debris or broken windows;
- Structure attracts transients or crime;
- Structure is neglected by owner;
- Paint peeling throughout structure;
- Lawn not mowed, little or no care to yard; and
- Junk and debris on property.[18]

Once a violation is declared the owner of the vacant building may be charged a monthly monitoring fee of $150, and an additional $150 enforcement response fee for each time an enforcement officer is called to the site. Moreover, the owner will be charged a penalty of up to $1,000 for the first violation and up to $5,000 for every 30 days for every following violation.[19]. The City's focus is not on properties with substandard conditions, but on properties that are considered dangerous.

Summary

During the fieldwork conducted in December 2015 there were some, but limited visible signs of litter, graffiti, or rubbish associated with existing commercial properties in the Project's market area and the general environs. All examined representative vacant commercial properties were reasonably well-maintained with only minor signs of lax maintenance in a few instances, including some obvious efforts at remediation. Thus, ALH Economics concludes that existing measures to maintain private commercial property in good condition in the City of Sacramento are reasonably effective and would serve to preclude the potential for urban decay and deterioration in the event any existing area retailers close following the operations of the Project (which is deemed unlikely) and other cumulative retail projects. This conclusion pertains as well to the condition of the building housing the existing

[17] City of Sacramento, "Anti-Graffiti Program," http://www.cityofsacramento.org/Community-Development/Code-Compliance/Neighborhoods/Graffiti (accessed January 2016).
[18] City of Sacramento, "Vacant Buildings," http://portal.cityofsacramento.org/Community-Development/Code-Compliance/Programs/Vacant-Buildings.aspx (accessed October 1, 2013).
[19] Ibid.

Raley's store that will be relocated upon completion of the Project, as many of the larger as well as longer-term vacancies appear to be maintained in reasonable condition.

POTENTIAL FOR URBAN DECAY RESULTING FROM THE PROJECT

Contributing Causes to Urban Decay

Before considering how the Project and cumulative projects might affect the market and environs, it is useful to focus on what constitutes the *environmental* impact known as urban decay. The leading court case on the subject, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1204, described the phenomenon as "a chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake." The court also discussed prior case law that addressed the potential for large retail projects to cause "physical deterioration of [a] downtown area" or "a general deterioration of [a] downtown area." (Id. at pp. 1206, 1207). When looking at the phenomenon of urban decay, it is also helpful to note economic impacts that do not constitute urban decay. For example, a vacant building is not urban decay, even if the building were to be vacant over a relatively long time. Similarly, even a number of empty storefronts would not constitute urban decay. Based on the preceding descriptions regarding urban decay, therefore, ALH Economics' analysis examined whether there was sufficient market demand to support the Project without affecting existing retailers so severely such as to lead to a downward spiral toward decay of the commercial real estate market.

Project and Cumulative Project Vacancy Impacts

The preceding analysis indicated that the Project alone is not anticipated to cause existing retailers to close and vacate their commercial spaces. However, the analysis suggested that the cumulative project impacts could lead to potential sales declines at existing market area food stores, including Raley's, with some, limited risk that one existing food store could close (e.g., Sprout's). Further, the existing Raley's store will be vacated once Raley's relocates to the Project's new grocery store space. Thus, there will be at least one large retail vacancy occurring in the market area as a result of Project development, with potential for yet a second major vacancy.

Moderate retail market conditions and demonstrated examples of retail backfilling indicate that larger retail vacancies in or near the market area generally meet with market success, and that retail conditions remain the market area suggest the likelihood that Project or cumulative project-related vacancies will be successfully backfilled. The numerous examples presented in Exhibit 30 demonstrate that the market is resilient and that larger scale vacancies can be successfully backfilled. This provides support and evidence to suggest that continued backfilling can occur, without risk the market devolving into urban decay. In addition, as noted in Table 10, there will be remaining retail market leakage and new market area demand not absorbed by the cumulative projects. This level of demand totals $153.6 million, which will generate support for additional retailers new to the market, which can help fill cumulative project-induced or other vacancies. This includes demand in all major retail categories.

Urban Decay Conclusion

In developing a conclusion regarding the potential for urban decay, ALH Economics relied on the definition presented earlier in this chapter, which focused on determining whether or not physical deterioration would likely result from the opening of the Project and other cumulative retail

developments. ALH Economics' conclusion is based on consideration of current market conditions, findings regarding sales and vacancy impacts, and regulatory controls, as summarized below:

Current Market Conditions: The fieldwork and market research indicated that retail market conditions are moderately strong in Sacramento as well as the Project's market area, with low to moderate retail vacancy rates. Retail leasing activity is occurring and existing vacancies are moderately well maintained, with only scattered and limited signs of poor maintenance, none of which is characteristic of urban decay in the market area.

Sales and Vacancy Impacts: The Project alone is not anticipated to result in closure of existing retailers. The Project combined with cumulative project sales impacts could have sales impacts up to $5.5 million in sales spread among several existing food stores, which is unlikely to result in closure of existing retailers. In a worst case scenario this could result in one existing grocery store closure, most likely comprising the relatively new market area Sprout's store. However, the market's demonstrated retail absorption, including backfilling of larger retail spaces, coupled with the moderately strong market conditions, suggest that vacancies that might occur as a result of the cumulative project impacts would likely be backfilled within a reasonable time and not be characterized by prolonged vacancy. The most likely outcome, however, is lower sales performance by select existing market area stores, including the Project's Raley's store.

Even if a commercial retail space experiences prolonged vacancy, the prevailing conditions in the market area suggest that this vacancy would be well-maintained and would not devolve into urban decay or deterioration. Moreover, it should be noted that when tenants vacate prior to lease expiration, they continue to be responsible for rent and their share of building operating expenses. While not all tenants would have the wherewithal to continue these payments, national or regional retailers are more likely to have this capability. This is an important consideration because landlords would continue to receive income on these vacated spaces through committed lease payments, which means they would have available financial resources to continue to maintain their properties.

Regulatory Controls: During Project-related fieldwork conducted in December 2015, ALH Economics found there were very limited signs of litter, graffiti, weeds, or rubbish associated with existing commercial nodes in the Project's market area. Thus, ALH Economics concludes that existing measures to maintain private commercial property in good condition in Sacramento and the market area in particular are generally effective and would serve to help preclude the potential for urban decay and deterioration in the event existing retailers in the market area close following the operations of the Project and other cumulative retail projects.

In conclusion, while some existing stores may experience negative impacts following the addition of the Project combined with cumulative retail developments, there is limited evidence to suggest that closed store spaces would exhibit traditional signs of deterioration and decay, such as graffiti, refuse dumping, and dilapidated fencing. Existing vacant spaces throughout the area appear reasonably well-maintained, including longer-term vacancies. This, plus the recent area leasing activity, indicates that the City of Sacramento, including the market area, is an inherently appealing retail market. Based upon these findings, ALH Economics concludes that the Land Park Commercial Center Project and the identified cumulative projects will not cause or contribute to urban decay.

ASSUMPTIONS AND GENERAL LIMITING CONDITIONS

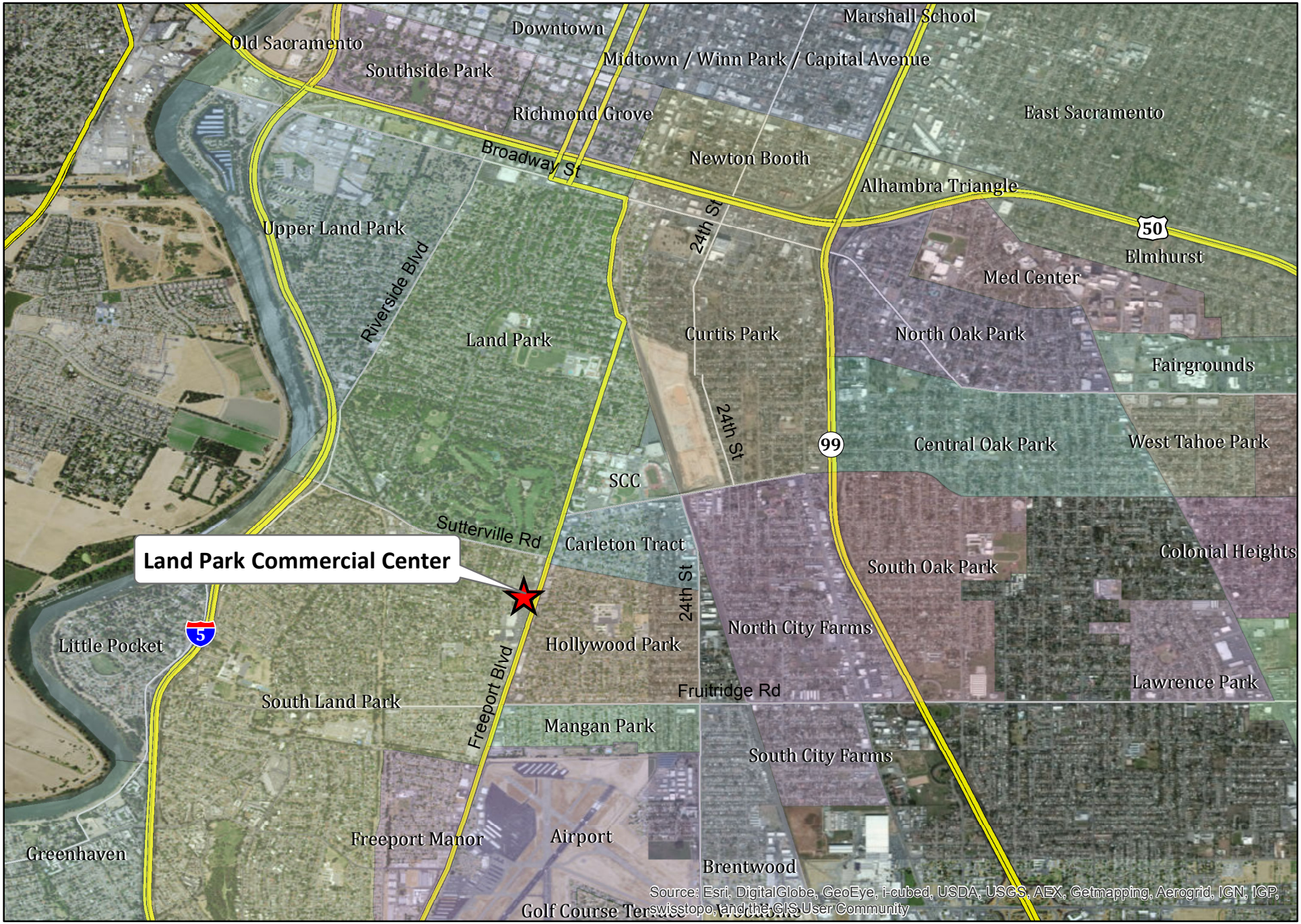
ALH Urban & Regional Economics has made extensive efforts to confirm the accuracy and timeliness of the information contained in this study. Such information was compiled from a variety of sources, including interviews with government officials, review of City and County documents, and other third parties deemed to be reliable. Although ALH Urban & Regional Economics believes all information in this study is correct, it does not warrant the accuracy of such information and assumes no responsibility for inaccuracies in the information by third parties. We have no responsibility to update this report for events and circumstances occurring after the date of this report. Further, no guarantee is made as to the possible effect on development of present or future federal, state or local legislation, including any regarding environmental or ecological matters.

The accompanying projections and analyses are based on estimates and assumptions developed in connection with the study. In turn, these assumptions, and their relation to the projections, were developed using currently available economic data and other relevant information. It is the nature of forecasting, however, that some assumptions may not materialize, and unanticipated events and circumstances may occur. Therefore, actual results achieved during the projection period will likely vary from the projections, and some of the variations may be material to the conclusions of the analysis.

Contractual obligations do not include access to or ownership transfer of any electronic data processing files, programs or models completed directly for or as by-products of this research effort, unless explicitly so agreed as part of the contract.

APPENDIX A: EXHIBITS

Exhibit 1: Land Park Commercial Center Project Site Location and Area Context



Miles
0 0.375 0.75 1.5

Exhibit 2
Land Park Commercial Center Project
Project Description and Net Change from Existing Raley's
Square Feet by Land Use

Land Use	Existing	Proposed	Net Change
Raley's	60,000	55,000	(5,000)
Additional Retail Space (1)			
Shops 1	0	9,282	9,282
Shops 2	0	11,903	11,903
Shops 3	0	6,000	6,000
Shops 4	0	6,000	6,000
Shops 5	0	7,980	7,980
Tenant	0	12,000	12,000
Subtotal	*0*	*53,165*	*53,165*
TOTAL	60,000	108,165	48,165

Sources: Mo Capital, Land Park Commercial Center, Sacramento, CA, Planning Entitlement Submittal June 25, 2015; and ALH Urban & Regional Economics.

Exhibit 3
Land Park Commercial Center Project
Distribution of Additional Retail Space (Excluding Raley's)
By Type of Retail (1)

California Board of Equalization Sales Category (2)	Percent	Square Feet
Motor Vehicle & Parts Dealers	0.0%	0
Home Furnishings & Appliances (3)	10.0%	5,317
Building Materials & Garden Equipment (4)	7.5%	3,987
Food and Beverage Stores	0.0%	0
Gasoline Stations	0.0%	0
Clothing & Clothing Accessories (5)	10.0%	5,317
General Merchandise Stores (6)	7.5%	3,987
Food Services & Drinking Places	20.0%	10,633
Other Retail Group (7)	25.0%	13,291
Non-Retail Uses (8)	20.0%	10,633
Total	**100.0%**	**53,165**

Source: ALH Urban & Regional Economics.

(1) Retail tenants for this portion of the retail space have not yet been determined. ALH Economics developed working assumptions for this space based upon professional judgment, review of the tenant mix at other grocery-anchored shopping centers, and experience in the retail industry.
(2) Retail categories pursuant to the State of California Board of Equalization categories. Use of these categories facilitates analysis of prospective sales at the Land Park Commercial Center Project relative to the existing sales base.
(3) Includes retailers selling home furnishings and appliances, such as electronics, home décor, kitchenware, bedding, small and large appliances, furniture, and mattresses.
(4) Includes retailers selling building materials, hardware, lawn and garden equipment, nursery plants, and supplies.
(5) Includes retailers selling a wide range of clothing, shoes, and accessories such as purses and hats.
(6) Includes department stores, dollar stores, and a mix of general merchandise retailers.
(7) The Other Retail Group includes a range of retail goods, such as drug stores, health and personal care, gifts, art goods and novelties, sporting goods, pet supply, toy stores, florists, photographic equipment and supplies, musical instruments, stationary and books, office and school supplies, second-hand merchandise, and miscellaneous other retail stores.
(8) Non-retail uses include bank/financial and personal services, such as hair and nail salons. The 10,633 square feet shown here comprise approximately 9.8% of the total project square footage (i.e., 108,165 square feet as presented in Exhibit 2).

Exhibit 4
Land Park Commercial Center Project
Distribution of Annual Retail Sales Estimates
2015 Dollars

BOE Retail Category (1)	Square Feet Total (2)	Square Feet Net (2)	Sales per Square Foot Estimates (3)	Annual Retail Sales Total	Annual Retail Sales Net New
Motor Vehicle & Parts Dealers	0	0	NA	$0	$0
Home Furnishings & Appliances	5,317	5,317	$323 (4)	$1,714,584	$1,714,584
Building Materials & Garden Equipment	3,987	3,987	$300 (5)	$1,195,508	$1,195,508
Food and Beverage Stores	55,000	-5,000	$600 (6)	$33,000,000	$3,300,000 (7)
Gasoline Stations	0	0	NA	$0	$0
Clothing & Clothing Accessories Stores	5,317	5,317	$385 (8)	$2,046,698	$2,046,698
General Merchandise Stores	3,987	3,987	$297 (9)	$1,184,765	$1,184,765
Food Services & Drinking Places	10,633	10,633	$528 (10)	$5,616,462	$5,616,462
Other Retail Group	13,291	13,291	$432 (11)	$5,736,674	$5,736,674
Non-Retail Services	10,633	10,633	-- (12)	--	--
Total	**108,165**	**48,165**	**NA**	**$50,494,690**	**$20,794,690**

Sources: Retail Maxim; and ALH Urban & Regional Economics.

(1) Retail sales are analyzed pursuant to the State of California Board of Equalization classification to facilitate analysis.
(2) See Exhibits 2 and 3.
(3) See Exhibit B-1.
(4) The sales per square foot estimate for the Home Furnishings & Appliance Stores space is based on the average for Domestics and Furniture, see Exhibit B-1.
(5) The sales per square foot estimate for the Building Materials & Garden Equipment space is based on the average for Home Improvement, see Exhibit B-1.
(6) The sales per square foot estimate for the Food and Beverage Stores space is based on the average for Supermarkets, see Exhibit B-1. This is an estimate of the store performance for the existing Raley's grocery store.
(7) Raley's estimates that there will be a small net increase in sales with the brand new store even with a small net decrease in square footage.
(8) The sales per square foot estimate for the Clothing & Clothing Accessories stores space is based on the average for Apparel, see the Retail Maxim summary data in Exhibit B-1.
(9) The sales per square foot estimate for the General Merchandise Stores space is based on the average for Discount Stores and Department Stores, see the Retail Maxim summary data in Exhibit B-1.
(10) The sales per square foot estimate for the restaurant space is based on the average sales among Major National Restaurant chains. See the Retail Maxim summary data in Exhibit B-1.
(11) The sales per square foot estimate for the other retail space is based on the average of Other Retail categories. See the Retail Maxim summary data in Exhibit B-1.
(12) Non-retail services include uses such as banks, salons, and tutoring centers. Sales generated by these uses are not reported by the State of California BOE in a manner that is conducive to comparative analysis. Given the limited area devoted to these uses the sales are anticipated to be relatively low and not highly competitive with other service providers.

Exhibit 5: Land Park Commercial Center Project Market Area and Area Raley's and Bel Air Stores

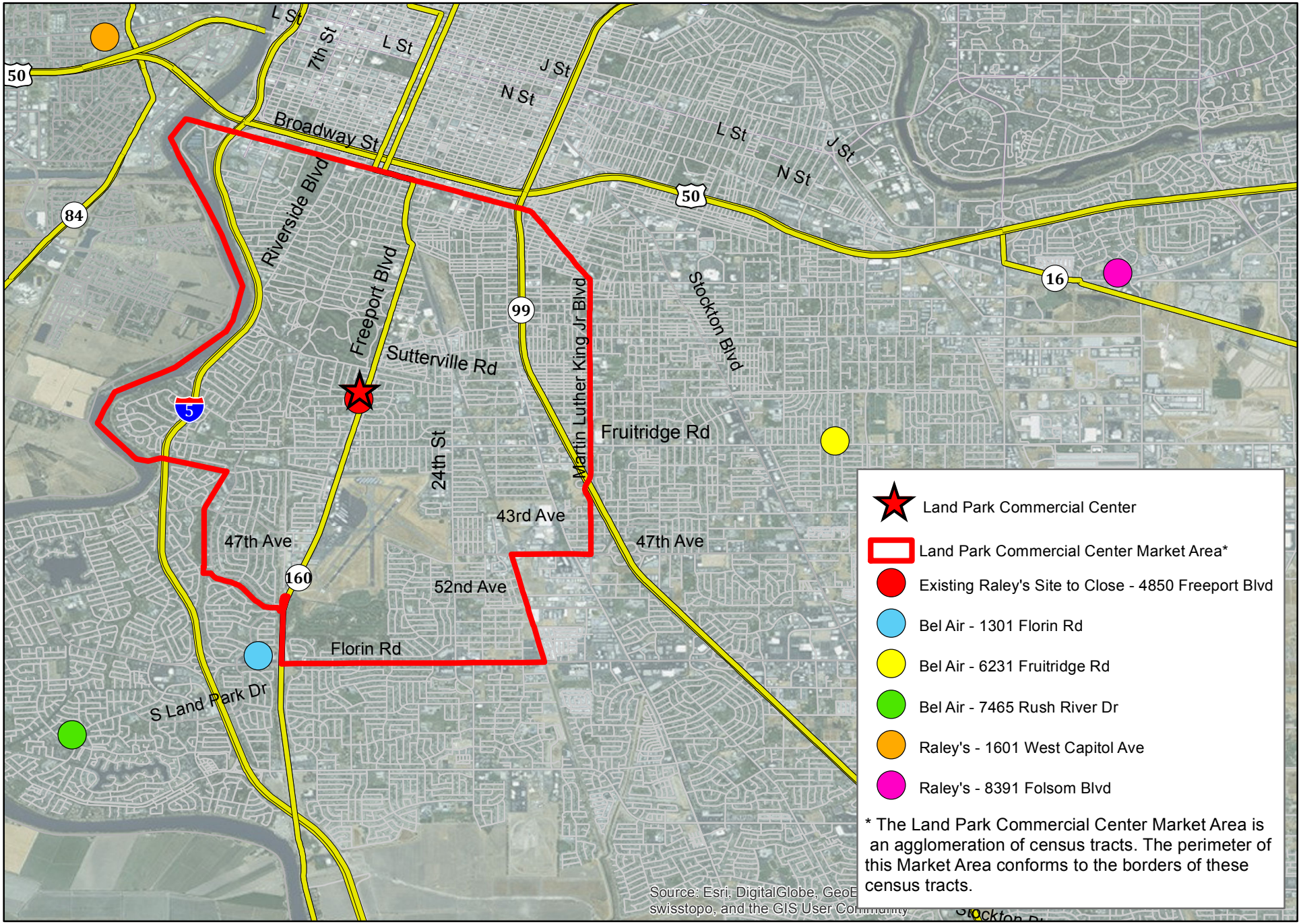


Exhibit 6
Land Park Commercial Center Project
Share of Project Sales Generated by Market Area Residents
2015 Dollars

BOE Retail Category	Annual Land Park Commercial Center Retail Sales (1) Total	Annual Land Park Commercial Center Retail Sales (1) Net New	Sales Generated By Market Area Residents (2)	Annual Retail Sales Generated by Market Area (3) Total	Annual Retail Sales Generated by Market Area (3) Net New
Motor Vehicle & Parts Dealers	$0	$0	NA	$0	$0
Home Furnishings & Appliances	$1,714,584	$1,714,584	80%	$1,371,667	$1,371,667
Building Materials & Garden Equipment	$1,195,508	$1,195,508	80%	$956,406	$956,406
Food and Beverage Stores	$33,000,000	$3,300,000	80%	$26,400,000	$2,640,000
Gasoline Stations	$0	$0	NA	$0	$0
Clothing & Clothing Accessories Stores	$2,046,698	$2,046,698	80%	$1,637,358	$1,637,358
General Merchandise Stores	$1,184,765	$1,184,765	80%	$947,812	$947,812
Food Services & Drinking Places	$5,616,462	$5,616,462	80%	$4,493,170	$4,493,170
Other Retail Group	$5,736,674	$5,736,674	80%	$4,589,339	$4,589,339
Total	**$50,494,690**	**$20,794,690**	**80%**	**$40,395,752**	**$16,635,752**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 4.
(2) Assumption developed by ALH Urban & Regional Economics.
(3) Comprises share of store sales anticipated to be generated by market area households.

Exhibit 7
Household Estimates and Projections
City of Sacramento and Land Park Commercial Center Market Area (1)
2010 - 2019

Demographic Characteristic	2010 (2)	2015 (3)	2016 (3)	2017 (3)	2018 (3)	2019 (3) (4)	Compound Annual Average Growth Rates (3) 2015-2019
Households							
Market Area Census Tracts (0606700)							
22.00	1,685	1,766	1,783	1,800	1,817	1,834	0.95%
23.00	1,588	1,665	1,680	1,696	1,712	1,729	0.95%
24.00	2,012	2,109	2,129	2,149	2,170	2,190	0.95%
25.00	710	744	751	758	766	773	0.95%
26.00	1,218	1,277	1,289	1,301	1,313	1,326	0.95%
27.00	1,364	1,406	1,414	1,423	1,432	1,440	0.61%
33.00	1,832	1,926	1,945	1,965	1,985	2,005	1.01%
34.00	1,782	1,873	1,892	1,911	1,931	1,950	1.01%
35.01	1,163	1,223	1,235	1,247	1,260	1,273	1.01%
35.02	1,253	1,317	1,331	1,344	1,357	1,371	1.01%
36.00	927	1,004	1,020	1,037	1,053	1,070	1.61%
37.00	1,161	1,257	1,278	1,298	1,319	1,340	1.61%
38.00	1,687	1,774	1,791	1,809	1,828	1,846	1.01%
39.00	1,517	1,595	1,611	1,627	1,643	1,660	1.01%
41.00	1,557	1,637	1,653	1,670	1,687	1,704	1.01%
45.01	978	1,035	1,047	1,059	1,072	1,084	1.15%
Total Market Area	**22,434**	**23,608**	**23,851**	**24,096**	**24,343**	**24,594**	**1.03%**
City of Sacramento (5)	180,547	194,584	197,520	197,520	197,520	197,520	1.00%

Sources: Nielsen 2015 Reports; Sacramento Area Council of Governments, "SACOG Modeling Projections for 2008, 2020, and 2035; May 2012 Total Population, Total Households, Total Dwelling Units, and Total Employment Zip Code Tabulation Area (ZCTA) summary"; and ALH Urban & Regional Economics.

(1) See Exhibit 1 for a map of the Land Park Commercial Center Project market area.
(2) Demographic Census data for 2010 provided by Nielsen Reports. All data points reflect counts for April of the respective year, pursuant to census benchmarking in April for each decennial census.
(3) Demographic estimates for 2015 through 2019 were prepared by ALH Urban & Regional Economics based on the SACOG estimated incremental growth rates between 2008 and 2020 for each census tract's associated zip code. See Exhibit B-2.
(4) The estimated first full year of sales for the Land Park Commercial Center Project is 2019 per Dudek.
(5) Demographic estimates for 2010 through 2019 were prepared by ALH Urban & Regional Economics based on the SACOG estimated incremental growth rates between 2008 and 2020 for the City of Sacramento.

Exhibit 8
Market Area Retail Spending Potential (1)
Existing Retail Demand, 2015
2015 Dollars

Type of Retailer	Per Household Demand (2)	Total Market Area Demand (3)
Motor Vehicles and Parts Dealers	$3,207	$75,702,816
Home Furnishings and Appliance Stores	$1,199	$28,295,127
Building Materials and Garden Equip (4)	$1,400	$33,048,704
Food and Beverage Stores	$3,976	$93,864,992
Gasoline Stations	$2,682	$63,314,194
Clothing and Clothing Accessories Stores	$1,647	$38,881,192
General Merchandise Stores	$3,234	$76,357,950
Food Services and Drinking Places	$2,961	$69,901,403
Other Retail Group (5)	$2,915	$68,828,878
Total	**$23,220**	**$548,195,255**

Source: ALH Urban & Regional Economics.

(1) All figures are expressed in 2015 dollars.
(2) The per household spending estimates for the market area were generated by ALH Urban & Regional Economics by taking the estimated average 2015 market area household income figure of $66,344 and multiplying by 35%, utilizing the assumption that 35% of household income is spent on BOE type retail.This figure was then multiplied by the percentages calculated from the ratio of the BOE sales for the State of California. See Exhibit B-3. The 35% estimate was interpolated based upon the findings presented in Exhibit B-3.
(3) Represents per household spending multiplied by the respective household count in Exhibit 7.
(4) Building Materials and Garden Equipment includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, lawn and garden equipment, and lumber.
(5) Other Retail Group includes drug stores, electronics, health and personal care, pet supplies, gifts, art goods and novelties, sporting goods, florists, electronics, musical instruments, stationary and books, office and school supplies, second-hand merchandise, and miscellaneous other retail stores.

Exhibit 9
Retail Demand Generated by Market Area Household Growth
2015-2019 (1)
2015 Dollars

	Market Area	
Type of Retailer	**Per Household Demand (2)**	**Demand From New Households 2015-2019 (3)**
Motor Vehicles and Parts Dealers	$3,207	$3,160,209
Home Furnishings and Appliance Stores	$1,199	$1,181,178
Building Materials and Garden Equip .	$1,400	$1,379,616
Food and Beverage Stores	$3,976	$3,918,388
Gasoline Stations	$2,682	$2,643,047
Clothing and Clothing Accessories Stores	$1,647	$1,623,093
General Merchandise Stores	$3,234	$3,187,558
Food Services and Drinking Places	$2,961	$2,918,029
Other Retail Group	$2,915	$2,873,257
Total	**$23,220**	**$22,884,375**

Source: ALH Urban & Regional Economics.

(1) The year increment represents the base time period and the anticipated completion of the Land Park Commercial Center Project expansion in 2019.
(2) The per household spending estimates for the Market Area were generated by ALH Urban & Regional Economics by taking the estimated average 2015 area household income figure of $66,344 for 2015 from Nielsen Reports and multiplying by 35%, utilizing the assumption that 35% of household income is spent on BOE type retail.This figure was then multiplied by the percentages calculated from the ratio of the BOE sales for the State of California. See Exhibit B-3. The 35% estimate was interpolated based upon the findings presented in Exhibit B-3.
(3) Represents per household spending multiplied by the respective increase in households. The balance of market area households count is 986 between 2015 and 2019. See Exhibit 7 for household projections.

Exhibit 10
Existing and Future Market Area Retail Demand by Category
2015 and 2019

Type of Retailer	Existing 2015 (1)	Incremental 2015-2019 (2)	Total 2019
Motor Vehicles and Parts Dealers	$75,702,816	$3,160,209	$78,863,025
Home Furnishings and Appliance Stores	$28,295,127	$1,181,178	$29,476,306
Building Materials and Garden Equip	$33,048,704	$1,379,616	$34,428,320
Food and Beverage Stores	$93,864,992	$3,918,388	$97,783,380
Gasoline Stations	$63,314,194	$2,643,047	$65,957,241
Clothing and Clothing Accessories Stores	$38,881,192	$1,623,093	$40,504,285
General Merchandise Stores	$76,357,950	$3,187,558	$79,545,507
Food Services and Drinking Places	$69,901,403	$2,918,029	$72,819,432
Other Retail Group (6)	$68,828,878	$2,873,257	$71,702,135
Total	**$548,195,255**	**$22,884,375**	**$571,079,631**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 8.
(2) See Exhibit 9.

Exhibit 11
City of Sacramento Board of Equalization Taxable Sales Estimate
in Current Dollars
Third Quarter 2013 Through Second Quarter 2014
(in $000s)

	BOE Taxable Sales Estimate in $000s (1)					
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Total Taxable Sales City of Sacramento	City of Sacramento Taxable Sales Adjusted to Total Retail
Type of Retailer	[A]	[B]	[C]	[D]	[E = A + B + C +D]	
Motor Vehicle & Parts Dealers	$106,456	$96,341	$97,559	$99,680	$400,036	$400,036
Home Furnishings & Appliances	$49,235	$55,897	$57,055	$63,751	$225,938	$225,938
Building Materials & Garden Equipment	$76,954	$70,283	$78,094	$79,076	$304,407	$304,407
Food & Beverage Stores	$71,623	$83,308	$71,803	$81,203	$307,937	$1,026,457 (2)
Gasoline Stations	$154,229	$143,073	$139,088	$161,227	$597,617	$597,617
Clothing & Clothing Accessories	$78,886	$102,389	$74,162	$79,821	$335,258	$335,258
General Merchandise Stores	$117,003	$159,577	$110,480	$120,479	$507,539	$676,719 (3)
Food Services & Drinking Places	$193,677	$204,497	$206,348	$213,112	$817,634	$817,634
Other Retail Group	$127,136	$132,636	$118,552	$126,236	$504,560	$661,602 (4)
Total (5)	**$975,199**	**$1,048,001**	**$953,141**	**$1,024,585**	**$4,000,926**	**$5,045,667**

Sources: California State Board of Equalization (BOE), "Taxable Sales in California (Sales & Use Tax)" reports, for Third Quarter 2013, Fourth Quarter 2013, First Quarter 2014, and Second Quarter 2014; U.S. Economic Census, "Retail Trade: Subject Series - Product Lines: Product Lines Statistics by Kind of Business for the United States: 2007"; and ALH Urban & Regional Economics.

(1) Taxable sales are pursuant to reporting by the State of California Board of Equalization (BOE).

(2) Sales for Food and Beverage Stores have been adjusted to account for non-taxable sales; only 30.0% of all food store sales are estimated to be taxable.

(3) Sales for General Merchandise Stores have been adjusted to account for non-taxable food sales, since some General Merchandise Store sales include non-taxable food items. ALH Urban & Regional Economics estimates that at least 25% of General Merchandise sales are for grocery items that are also non-taxable. This estimate is based on analysis of the 2007 U.S. Economic Census, which attributes 26% of General Merchandise Stores sales to food.

(4) Sales for Other Retail Group have been adjusted to account for non-taxable drug store sales, since drug store sales are included in the Other Retail Group category. ALH Urban & Regional Economics estimates that 33.0% of drug store sales are taxable, based on discussions with the California BOE and examination of U.S. Census data. In Sacramento County, drug store sales in Q3 2013, Q4 2013, Q1 2014, and Q2 2014 represented approximately 15.84% of all Other Retail Group sales. ALH Urban & Regional Economics applied that percentage and then adjusted upward for non-taxable sales.

(5) Totals may not add up due to rounding.

Exhibit 12
City of Sacramento
Adjusted Retail Sales Base
2015 Estimate

Type of Retailer	City of Sacramento Sales Base: 2013 (1) (2) [A]	Increase to Q2 2015 (3) [B]	Approx. 2015 Estimate [C = A x (1+ B)]	Sales per Household 2015 (4) [D = C / # of HH]
Motor Vehicles & Parts Dealers	$400,036,000	6.2%	$424,973,474	$2,184
Home Furnishings & Appliance Stores	$225,938,000	5.4%	$238,135,436	$1,224
Building Materials & Garden Equipment	$304,407,000	(14.4%)	$260,550,080	$1,339
Food & Beverage Stores	$1,026,456,667	3.2%	$1,059,317,795	$5,444
Gasoline Stations	$597,617,000	(13.5%)	$517,032,921	$2,657
Clothing & Clothing Accessories Stores	$335,258,000	2.9%	$344,994,699	$1,773
General Merchandise Stores	$676,718,667	(2.2%)	$661,612,022	$3,400
Food Services & Drinking Places	$817,634,000	7.5%	$879,265,293	$4,519
Other Retail Group	$661,601,829	4.3%	$690,342,268	$3,548
Total	**$5,045,667,162**	**0.6%**	**$5,076,223,988**	**$26,088**

Sources: MuniServices, "Economic Composition and Performance Analysis - 2nd Quarter 2013 through 2nd Quarter 2015; and ALH Urban & Regional Economics.

(1) See Exhibit 11.
(2) Reflects sales for third quarter 2013 through second quarter 2014.
(3) The sales base is adjusted pursuant to analysis of recent retail sales trends for the City of Sacramento (i.e., second quarter 2015 and second quarter 2014). This is the most recent sales performance data available through the City's tax consultant.
(4) The City of Sacramento had an estimated 194,584 households in early 2015. See Exhibit 7.

Exhibit 13
Calculation of Land Park Commercial Center Market Area Taxable Sales
2015 Dollars

Retail Category	2015 Nielson Data (1) City of Sacramento Sales [A]	2015 Nielson Data (1) Market Area Sales [B]	Ratio of Market Area to Entire City [C = B / A]	Estimated 2015 BOE Data (2) City of Sacramento Sales (3) D	Estimated 2015 BOE Data (2) Market Area Sales [E = D * C]	Percent of Total
Motor Vehicle & Parts Dealers	$428,625,049	$63,572,864	14.8%	$424,973,474	$63,031,269	16.4%
Home Furnishings & Appliances	$163,665,740	$6,698,284	4.1%	$238,135,436	$9,746,076	2.5%
Building Materials & Garden Equipment	$516,692,266	$23,046,703	4.5%	$260,550,080	$11,621,657	3.0%
Food & Beverage Stores	$685,901,860	$56,146,188	8.2%	$1,059,317,795	$86,713,070	22.6%
Gasoline Stations	$382,156,933	$40,715,198	10.7%	$517,032,921	$55,084,956	14.4%
Clothing & Clothing Accessories	$249,218,361	$4,542,739	1.8%	$344,994,699	$6,288,545	1.6%
General Merchandise Stores	$855,728,314	$46,935,247	5.5%	$661,612,022	$36,288,298	9.5%
Food Services & Drinking Places	$974,581,906	$65,461,719	6.7%	$879,265,293	$59,059,395	15.4%
Other Retail Group	$789,006,920	$63,779,636	8.1%	$690,342,268	$55,804,046	14.5%
Totals	**$5,045,577,349**	**$370,898,578**	**7.4%**	**$5,076,223,988**	**$383,637,312**	**100.0%**

Sources: California State Board of Equalization, "Taxable Sales in California"; Nielsen Reports 2015; and ALH Urban & Regional Economics.

(1) Nielsen data are in 2015 dollars. See Appendices B-5 and B-6 for translation of Nielsen to BOE categories.
(2) BOE data are in 2015 Dollars.
(3) See Exhibit 12.

Exhibit 14
City of Sacramento
Retail Demand, Sales Attraction, and Spending Analysis (1)
2015

Type of Retailer	Per Household Spending (2)	Per Household Sales (3) (4)	Sacramento Household Spending (4)	Sacramento Sales (3)	Retail Sales Attraction/(Leakage) Amount	Retail Sales Attraction/(Leakage) Percent
Motor Vehicles and Parts Dealers	$3,080	$2,184	$599,376,227	$424,973,474	($174,402,754)	(29.1%)
Home Furnishings and Appliance Stores	$1,151	$1,224	$224,026,365	$238,135,436	$14,109,072	5.9%
Building Materials and Garden Equip (5)	$1,345	$1,339	$261,662,756	$260,550,080	($1,112,676)	(0.4%)
Food and Beverage Stores	$3,819	$5,444	$743,175,060	$1,059,317,795	$316,142,735	29.8%
Gasoline Stations	$2,576	$2,657	$501,289,447	$517,032,921	$15,743,474	3.0%
Clothing and Clothing Accessories Stores	$1,582	$1,773	$307,841,415	$344,994,699	$37,153,284	10.8%
General Merchandise Stores	$3,107	$3,400	$604,563,241	$661,612,022	$57,048,781	8.6%
Food Services and Drinking Places	$2,844	$4,519	$553,443,599	$879,265,293	$325,821,694	37.1%
Other Retail Group (6)	$2,801	$3,548	$544,951,898	$690,342,268	$145,390,369	21.1%
Total	**$22,306**	**$26,088**	**$4,340,330,009**	**$5,076,223,988**	**$735,893,979**	**14.5%**

Source: ALH Urban & Regional Economics.

(1) All figures are expressed in 2015 dollars.
(2) The per household spending estimates for the City of Sacramento were generated by ALH Urban & Regional Economics by taking the estimated average 2015 area household income figure of $63,731 for 2015 from Nielsen Reports and multiplying by 35%, utilizing the assumption that 35% of household income is spent on BOE type retail.This figure was then multiplied by the percentages calculated from the ratio of the BOE sales for the State of California. See Exhibit B-3. The 35% figure was derived based upon interpolation of the findings in Exhibit B-3.
(3) See Exhibit 12.
(4) Represents per household spending multiplied by the respective household count for the City of Sacramento of 194,584.
(5) Building Materials and Garden Equipment includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, lawn and garden equipment, and lumber.
(6) Other Retail Group includes drug stores, health and personal care, pet supplies, gifts, art goods and novelties, sporting goods, florists, musical instruments, stationary and books, office and school supplies, second-hand merchandise, and miscellaneous other retail stores.

Exhibit 15
Land Park Commercial Project Market Area
Retail Demand, Sales Attraction, and Spending Analysis (1)
2015

Type of Retailer	Market Area Household Spending (2)	Market Area Sales (3)	Retail Sales Attraction/(Leakage) Amount	Retail Sales Attraction/(Leakage) Percent
Motor Vehicles and Parts Dealers	$75,702,816	$63,031,269	($12,671,547)	(16.7%)
Home Furnishings and Appliance Stores	$28,295,127	$9,746,076	($18,549,051)	(65.6%)
Building Materials and Garden Equip (5)	$33,048,704	$11,621,657	($21,427,047)	(64.8%)
Food and Beverage Stores	$93,864,992	$86,713,070	($7,151,922)	(7.6%)
Gasoline Stations	$63,314,194	$55,084,956	($8,229,238)	(13.0%)
Clothing and Clothing Accessories Stores	$38,881,192	$6,288,545	($32,592,647)	(83.8%)
General Merchandise Stores	$76,357,950	$36,288,298	($40,069,652)	(52.5%)
Food Services and Drinking Places	$69,901,403	$59,059,395	($10,842,008)	(15.5%)
Other Retail Group (6)	$68,828,878	$55,804,046	($13,024,832)	(18.9%)
Total	**$548,195,255**	**$383,637,312**	**($164,557,944)**	**(30.0%)**

Source: ALH Urban & Regional Economics.

(1) All figures are expressed in 2015 dollars.
(2) See Exhibit 8.
(3) See Exhibit 13.

Exhibit 16
Supportable Square Feet from Existing Household Retail Leakage
Land Park Commercial Center Project Market Area
2015 Dollars

Retail Category	Market Area Retail Leakage (1)	Sales Per Sq. Ft. (2)	Supportable Sq. Ft. Amount (3)	Supportable Sq. Ft. Vacancy Adjusted (4)
Motor Vehicles and Parts	($12,671,547)	$800 (5)	15,839	17,599
Home Furnishings and Appliances	($18,549,051)	$323	57,516	63,907
Building Materials and Garden Equip.	($21,427,047)	$300	71,466	79,406
Food and Beverage Stores	($7,151,922)	$595	12,015	13,349
Gasoline Stations	($8,229,238)	N/A (6)	N/A (6)	N/A (6)
Clothing and Clothing Accessories	($32,592,647)	$385	84,663	94,070
General Merchandise Stores	($40,069,652)	$297	134,856	149,840
Food Services and Drinking Places	($10,842,008)	$528	20,526	22,807
Other Retail Group	($13,024,832)	$432	30,177	33,530
Subtotal	($164,557,944)	--	427,057	474,508
Additional Service Increment (15% of total) (7)	N/A	N/A	75,363	83,737
Total	**N/A**	**N/A**	**502,420 (8)**	**558,245**
Total Rounded to Nearest 10,000			**500,000**	**560,000** (9)

Source: ALH Urban & Regional Economics.

(1) See Exhibit 14 for the amount of estimated City of Sacramento retail sales leakage.
(2) These figures reflect achievable sales per square foot estimates for each respective retail category except as noted. The figures reflect general industry averages as well as national averages reported in the Retail MAXIM publication "Alternative Retail Risk Analysis for Alternative Capital." See Exhibit B-1.
(3) Reflects the estimated supportable square feet of retail for each category with leakage.
(4) Includes a 10% vacancy allowance for all categories of retail space.
(5) The cited source for sales per square foot, Retail Maxim (see Exhibit B-1), does not include sales figures for auto dealers. Sales figures for auto parts stores are included, and average $227 per square foot. However, auto dealer sales greatly outweigh these sales in the overall category. Such sales are typically very high, especially relative to the amount of building area required to support their sales. For analytical purposes ALH Urban & Regional Economics assumes such sales are high, and overall average $800 for the category.
(6) Gasoline sales are highly volatile, and gasoline stations do not typically require large increments of built space. Therefore, estimates for gasoline stations are excluded from this analysis.
(7) Includes an allocation of 15% of space to accommodate service retail, such as banks, personal, and business services.
(8) Excludes Gasoline Stations.
(9) Reflects the total amount of retail space supportable by 100% of the estimated City of Sacramento retail leakage.

Exhibit 17
Land Park Commercial Center Project Sales Impacts
Impact on Existing Market Area Retail Sales Base Inclusive of Future Demand to 2019
2015 Dollars

Retail Category	Land Park Commercial Center Total Net Project Sales (1) [A]	New City of Sacramento Demand 2015-2019 (2) [B]	Project Sales in Excess of New Demand (3) [C = A - B if >0]	Remaining Demand Available for Retail Backfilling [D = B - A if >0]	City of Sacramento Sales Impacts Inclusive of Future Demand: Sacramento Area Existing Sales Base (4) [E]	City of Sacramento Sales Impacts Inclusive of Future Demand: Sales Impact % of Market Area Sales Base [F = C / E]
Motor Vehicle & Parts Dealers	$0	$9,042,838	$0	$9,042,838	$424,973,474	0.0%
Home Furnishings & Appliances	$1,714,584	$3,379,904	$0	$1,665,320	$238,135,436	0.0%
Building Materials & Garden Equipment	$1,195,508	$3,947,727	$0	$2,752,220	$260,550,080	0.0%
Food & Beverage Stores	$3,300,000	$11,212,342	$0	$7,912,342	$1,059,317,795	0.0%
Gasoline Stations	$0	$7,562,994	$0	$7,562,994	$517,032,921	0.0%
Clothing & Clothing Accessories	$2,046,698	$4,644,428	$0	$2,597,731	$344,994,699	0.0%
General Merchandise Stores	$1,184,765	$9,121,095	$0	$7,936,329	$661,612,022	0.0%
Food Services & Drinking Places	$5,616,462	$8,349,848	$0	$2,733,386	$879,265,293	0.0%
Other Retail Group	$5,736,674	$8,221,733	$0	$2,485,060	$690,342,268	0.0%
Total	**$20,794,690**	**$65,482,910**	**$0**	**$44,688,220**	**$5,076,223,988**	**0.0%**

Source: ALH Urban & Regional Economics.

(1) This figure is inclusive of all project sales, including sales generated by consumers from outside the Project's market area. See Exhibit 4.
(2) Future demand generated by new City of Sacramento households is based on anticipated household growth of 2,936 between 2015 and 2019 (see Exhibit 7) and the per household retail spending estimates presented in Exhibit 14.
(3) Comprises the level of net Land Park Commercial Center market-area-generated sales not anticipated to be absorbed by new demand occurring between the 2015 baseline period and 2019, the projected first full year of operations for the Land Park Commercial Center. These are the amount of sales anticipated to be diverted from existing baseline retail establishments in the Market Area in order for the Land Park Commercial Center to achieve its assumed level of sales generated by Market Area residents, assuming only Market Area establishments experience sales impacts.
(4) See Exhibit 13.

Exhibit 18
Land Park Commercial Center Project Potential Sales Impacts
Market Area
2015 Dollars

Retail Category	Net New Project Sales Generated by Market Area Households (1)	Market Area Sales Base (2)	Market Area			Sales Impacts	
			Leakage (3)	Potential Project Recapture (4)	Share of Total Leakage	Amount (5)	% of Market Area Sales Base
	[A]	[B]	[C]	[D]	[E = D / C]	[F = A + D]	[G = E / B]
Motor Vehicle & Parts Dealers	$0	$63,031,269	($12,671,547)	$0	0.0%	$0	0.0%
Home Furnishings & Appliances	$1,371,667	$9,746,076	($18,549,051)	($1,371,667)	7.4%	$0	0.0%
Building Materials & Garden Equipment	$956,406	$11,621,657	($21,427,047)	($956,406)	4.5%	$0	0.0%
Food & Beverage Stores	$2,640,000	$86,713,070	($7,151,922)	($1,320,000)	18.5%	$1,320,000	1.5%
Gasoline Stations	$0	$55,084,956	($8,229,238)	$0	0.0%	$0	0.0%
Clothing & Clothing Accessories	$1,637,358	$6,288,545	($32,592,647)	($1,637,358)	5.0%	$0	0.0%
General Merchandise Stores	$947,812	$36,288,298	($40,069,652)	($947,812)	2.4%	$0	0.0%
Food Services & Drinking Places	$4,493,170	$59,059,395	($10,842,008)	($1,684,939)	15.5%	$2,808,231	4.8%
Other Retail Group	$4,589,339	$55,804,046	($13,024,832)	($2,294,669)	17.6%	$2,294,669	4.1%
Total	**$16,635,752**	**$383,637,312**	**($164,557,944)**	**($10,212,851)**	**6.2%**	**$6,422,900**	**1.7%**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 6.
(2) See Exhibit 13.
(3) See Exhibit 15.
(4) Potential Project leakage recapture figures are based upon assumptions prepared by ALH Urban & Regional Economics. The assumptions vary by category, depending upon the nature of the prospective Project tenant, the type of existing market area retailers, and the likelihood that retailers outside the market area will continue to attract sales from the market area due to their brand, national orientation, or regional prevalence. Typically, if anticipated net new Project sales generated by market area households are less than 25% of the estimated leakage, then 100% of the Project's sales are anticipated to be absorbed through leakage. If the net new Project sales generated by market area households are equal to 25% to 50% of the leakage, then 50% of the Project sales are anticipated to be absorbed through leakage. If the net new Project sales generated by market area households comprise more than 50% of the estimated leakage then only 37.5% of the Project sales are anticipated to be absorbed through leakage.

Exhibit 19
Project Market Area Impacts Less Consideration of New Market Area Retail Demand to 2019
2015 Dollars

Type of Retailer	Project Sales Impacts (1) [A]	Total New Market Area Demand (2) [B]	Remaining Impacts Less New Demand (3) [C = A - B]
Motor Vehicles and Parts Dealers	$0	$3,160,209	$0
Home Furnishings and Appliance Stores	$0	$1,181,178	$0
Building Materials and Garden Equip .	$0	$1,379,616	$0
Food and Beverage Stores	$1,320,000	$3,918,388	$0
Gasoline Stations	$0	$2,643,047	$0
Clothing and Clothing Accessories Stores	$0	$1,623,093	$0
General Merchandise Stores	$0	$3,187,558	$0
Food Services and Drinking Places	$2,808,231	$2,918,029	$0
Other Retail Group	$2,294,669	$2,873,257	$0
Total	**$6,422,900**	**$22,884,375**	**$0**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 18.
(2) See Exhibit 9.
(3) Designates the amount of retail sales impacts remaining after consideration of market area demand generated between 2015 and 2019, with 2019 comprising the first full year of operations for the Land Park Commercial Center Project.

Exhibit 20: Land Park Commercial Center Project Market Area and Nearby Grocery and Food Stores

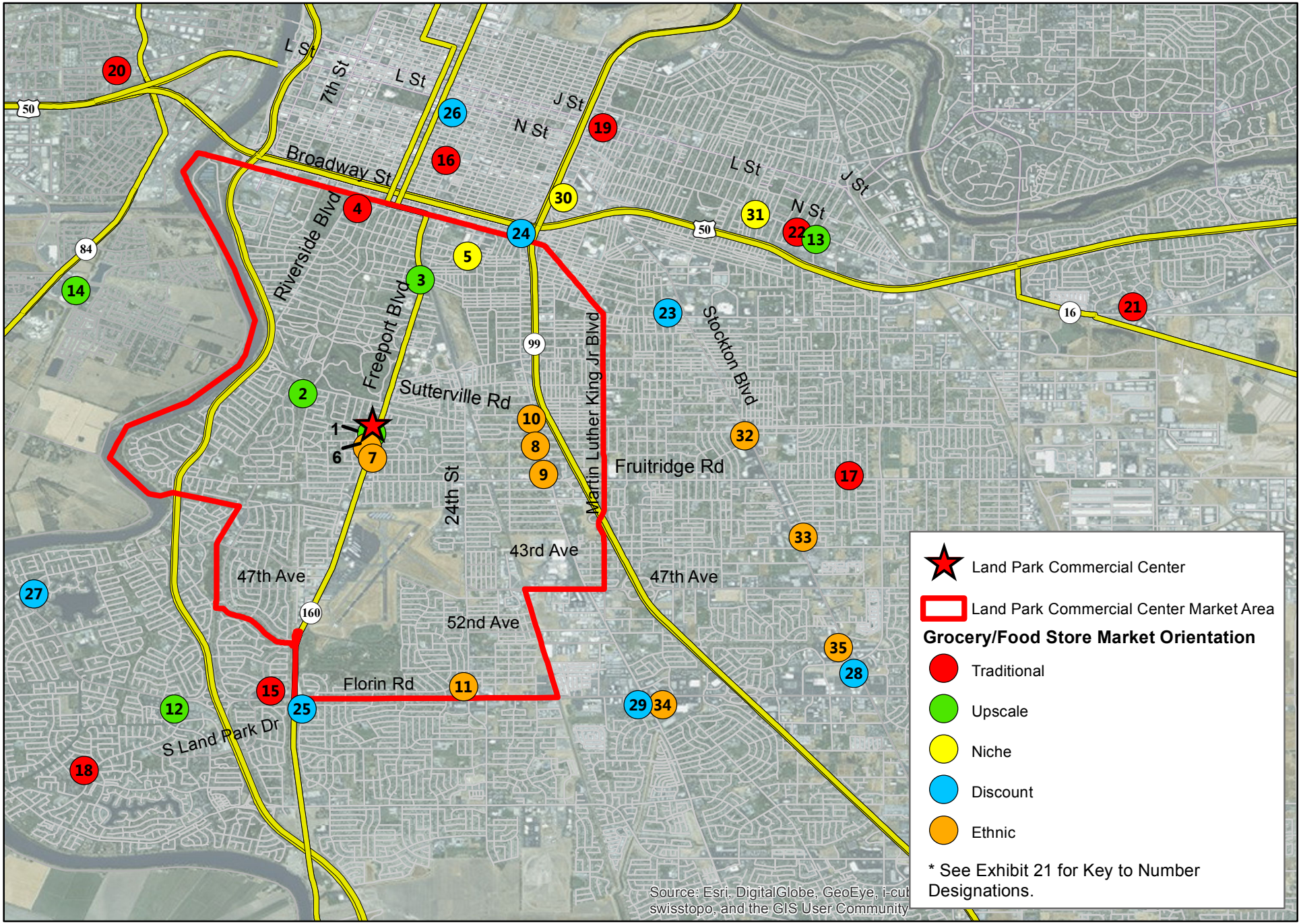


Exhibit 21
Land Park Commercial Center Market Area and Nearby Grocery and Food Stores by Orientation (1) (2)
December 2015

Map Identifier	(3) Store	Address	Miles from Site	Shopping Center	Other Tenants	Estimated # of Vacancies
MARKET AREA						
	Upscale Market Orientation (Map color code Green)					
1	Raley's (Existing store being closed and replaced at Land Park Commercial Center)	4850 Freeport Blvd	0.1	NA		NA
2	Sprouts	4408 Del Rio	0.9	NA	Parkside Pharmacy, La Bou, Macau Café	NA
3	Taylor's Market	2900 Freeport Blvd	1.8	NA	Taylor's Kitchen, Capitol Power Equipment	NA
	Traditional Market Orientation (Map color code Red)					
4	Target with Fresh Grocery	2505 Riverside Blvd	2.8		Stand Alone	NA
	Niche Market Orientation (Map color code Pink)					
5	Curtis Park Market	2703 24th St	2.1	NA	Stand Alone	NA
	Ethnic Market Orientation (Map color code Orange)					
6	Oto's Marketplace	4990 Freeport Blvd	0.3	NA	Stand Alone	NA
7	Ho Chin Market	5069 Freeport Blvd	0.3	NA	Shannon's Drapes, billiards, liquor, Crystal Aquarium, beauty salon, restaurant, foot spa, café, dry cleaners, cigarettes, acupuncture, massage, nails, hair, phones, frames	One
8	Harvest Foods - La Esperanza Grocery & Store	5040 Franklin Blvd	1.6	La Esperenza	La Esperanza Mexican Food & Bakery, La Pantera Club	NA
9	Carniceria Lopez Market	5550 Franklin Blvd	1.8	NA	Panaderia La Mexicana Bakery, Fashion City II, Jewelry Casa de Oro, Ola de Sueno, notary and taxes, Mexican restaurant	Two
10	La Superior Supermercados	4604 Franklin Blvd	2.0	NA	Restaurant, insurance, jeweler, clothing store	NA
11	Mi Rancho	2355 Florin Rd	3.5	NA	WIC, Alma's Fashion, Boost Mobile, McDonald's, gas, mechanic, Chinese restaurant, taxes, insurance, florist	One

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Exhibit 21
Land Park Commercial Center Market Area and Nearby Grocery and Food Stores by Orientation (1) (2)
December 2015

Map Identifier	(3) Store	Address	Miles from Site	Shopping Center	Other Tenants	Estimated # of Vacancies
OUTSIDE OF MARKET AREA						
	Upscale Market Orientation (Map color code Green)					
12	Nugget Market	1040 Florin Rd	3.7	Lake Crest Village	Rite Aid, Big 5, Marshall's, Radio Shack, Payless Shoes, Panda Garden Restaurant, Starbucks, Subway, Massage Envy, Petco, Armed Forces Career Center, Hawaiian BBQ, Citibank, Shari's Restaurant, Burger King, Leslies Pool Supplies, Jimboy Tacos, jewelry, cleaners, beauty supply, optometry, nail, Styles for Less, Great Clips, Wingstop, AAA	One: 881 sq. ft.
13	Corti Brothers	5810 Folsom Blvd	5.2	NA	Stand Alone	NA
14	Nugget Market	2000 Town Center Plaza	6.1	Southport Town Center	Dry cleaner, dentist, GNC, nails, Curves, beauty salon, Dickey's BBQ, T-Mobile, FedEx/Kinko's, Jamba Juice, Super Cuts, Subway, Big Kahuna Yogurt, Hula Hawaiian BBQ, Starbucks, Safe Credit Union, Dollar Tree, Massage Green, East Side Chef, Round Table Pizza, Metro PCS, Capital West Realty, Anytime Fitness	Four vacancies: 6,000, 2,200, 1,300, and 2,442 sq. ft.
	Traditional Market Orientation (Map color code Red)					
15	Bel Air	1301 Florin Rd	2.6	Florin West Center	Mexican restaurant, liquor & deli, Round Table Pizza, Cut-N-Go, cleaners, nails, beauty salon, O'Reilly Auto parts, Chase, Kumon, bakery	Four visible vacancies
16	Safeway	1814 19th St	3.1		Wells Fargo, Ramen, UPS Store, vapor store, Sport Clips, Verizon Wireless, salon, Panda Express, Peet's	Two
17	Bel Air	6231 Fruitridge Rd	3.5	NA	Stand Alone	NA
18	Bel Air	7465 Rush River Dr	3.8	Promenade Shopping Center	USPS, GNC, CVS, cleaners, loan brokerage, UPS Store, sushi, seafood restaurant, liquor store, California Bee Pollen, Golden1 Credit Union, Optometry, daycare, dentist, curves, Goodwill, tan, Tuesday Morning, Boba tea, HR Block	Five visible vacancies
19	Safeway	1025 Alhambra Blvd	3.8		U.S. Bank	NA
20	Raley's	1601 West Capitol Ave	3.8	NA	Locksmith	NA
21	Raley's	8391 Folsom Blvd	3.8	College Greens	99 Cents Only, Bank of America, gym, lenders, Jack in the Box Chase, Starbucks, pizza restaurant, Carl's Jr, burger restaurant, cigarette store, salon, cleaners, Subway, Mexican restaurant, spa, Metro PCS, beauty supply, Hawaiian BBQ, Cash Express	Six visible vacancies
22	Save Mart Supermarket	5600 Folsom Blvd	5.4	Camellia Shopping Center	Papa Murphy's, Petco, H&R Block, cruises, insurance, Baskin Robbins, Togo's, Radio Shack, Wells Fargo, Rite Aid, The UPS Store, Great Clips, nails, Chipotle, martial arts, Mexican restaurant	One

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Exhibit 21
Land Park Commercial Center Market Area and Nearby Grocery and Food Stores by Orientation (1) (2)
December 2015

Map Identifier	(3) Store	Address	Miles from Site	Shopping Center	Other Tenants	Estimated # of Vacancies
	Discount Market Orientation (Map color code Blue)					
23	Food Source	4401 Broadway	2.4	NA	Walgreens, Chase	NA
24	Smart & Final	2431 28th St	2.6	NA	Stand Alone	NA
25	Smart & Final	7205 Freeport Blvd	2.9	NA	CVS	NA
26	Grocery Outlet	1700 Capitol Ave	3.2	NA	Stand Alone	NA
27	Grocery Outlet	6419 Riverside Blvd	3.5	Riverside Plaza II	Nails, Goodwill, Baskin Robbins, Chinese restaurant, Le Croissant Factory, liquor store, martial arts, salon, sushi, smoke ship, massage, Shell Station	Two
28	FoodsCo	5330 Stockton Blvd	3.5	Stockridge Plaza Shopping Center	Pho restaurant, Money Mart, beauty supply, Dollar Tree, Harbor Freight Tools, Little Caesars Pizza, Arco, Jack in the Box, water store, donuts, Subway, Rent A Center, Salon, HR Block, Cigarette City, Cricket Wireless, Hair Tech, City Trends, Papa Murphy's, Western Wear, nutrition	Three
29	Food Maxx	3860 Florin Rd	4.1	River Parks	KFC, nails, New Look Fashion, smoke shop, La Costena Market, Rite Aid, Goodwill, Lollicup, nails, hair	Four visible vacancies
	Niche Market Orientation (Map color code Yellow)					
30	Sacramento Natural Foods Co-Op	1900 Alhambra Blvd	3.1	NA	Stand Alone	NA
31	Trader Joe's	5000 Folsom Blvd	5.1	NA	Stand Alone	NA
	Ethnic Market Orientation (Map color code Orange)					
32	La Superior Market	4940 Stockton Blvd	3.5	NA	Stand Alone	NA
33	Wing Wa Seafood Supermarket	6021 Stockton Blvd	4.1	NA	Stand Alone	NA
34	99 Ranch Market	4220 Florin Rd	4.4	Southgate Plaza	Ross, Sketchers Footwear Outlet, Payless Shoes, Sally Beauty Supply, Home Town Buffet, Avenue, Walmart Neighborhood Market, 99 Cent Only, Oxford Street, Baskin Robbins, H&R Block, Tap Plastics, Cricket, beauty college, security academy, The UPS Store, nails, Budget Mobile, Chinese restaurant, Chase, The Golden 1 Credit Union, F&M Bank, Taco Bell, McDonald's, Metro PCS, photography	Three visible vacancies
35	SF Supermarket	6930 65th St	5.7	65th Street Center	Cricket, Huong Lan Sandwiches, restaurant, Chinese herbs, tea bar, Top Speed, bakery, liquor store, Boiling Crab, foot spa, law office	Two

Sources: Maps.Google.com; and ALH Urban & Regional Economics.

(1) Includes major grocery stores in the Land Park Commercial Center market area and outside the market area within six miles, as well as smaller markets within relative proximity of the planned Land Park Commercial Center site.
(2) Market orientation pursuant to visual observation. As more grocery stores are upgraded the distinctions between upscale and conventional stores are blurred. Map colors pertain to the Competitive Stores Map.
(3) Stores are presented by area (inside or outside of the market area), by orientation of store, and then by distance from the planned site for Land Park Commercial Center.

Exhibit 22
Cumulative Major Retail Developments (5,000+ Square Feet)
City of Sacramento (1)
December 2015

	Project (2)	City Area	Description	Estimated Net New Retail Square Footage	Status	Location	Distance from Site (miles)	Anticipated Opening / Completion
1	Curtis Park Village (or Crocker Village)	Land Park	The retail portion of this project has been going back and forth between the developer and this City with the main issue being a gas station component of a proposed Safeway. The Mayor of Sacramento may intervene to help settle the matter as the City Council recently rejected the gas station. The two different versions of the retail project are Curtis Park Village or Crocker Village. As Curtis Park Village, the project will comprise 288 single-family units, 222 multifamily units, and 180,000 square feet of retail. This includes a 55,000-square-foot Safeway and other community-oriented retail. If the project goes through as Crocker Village it will comprise 268 single-family units, 132 market-rate multifamily units, 92 senior affordable housing, and 96,980 square feet of retail. The developer now shows a 25,000-square-foot Grocery Outlet along with a 18,450-square-foot dollar store, 10,080.-square-foot Pet Supply Plus, Cali Clips and Joe's BBQ, both 4,950 square feet. The remaining square footage is unknown; however the plans do show a 27,500-square-foot and 6,000-square-foot spaces.	180,000	Approved	Sutterville and 5th Ave	0.5	2017
2	2401 Fruitridge Rd	Land Park	Proposed new convenience store.	2,810	In Planning Stages	2401 Fruitridge Rd	1.1	NA
3	AM/PM, Arco, and Fast Food Restaurant	Freeport Manor	This former vacant Kwik Shop and service station was purchased by a franchisee planning to put in an AM/PM Convenience store, Arco gas station, and a fast food restaurant with drive-through (most likely a Del Taco) on 1.51 acres of land. The exact square footages are unknown.	5,050 (3)	In Planning Stages	6240 Freeport Blvd	1.4	2017
4	CVS	Land Park	This project comprises a new 17,200-square-foot retail building for CVS pharmacy.	17,200	Under Construction	3710 Franklin Blvd	1.5	NA
5	1500 S St	Midtown	This mixed use project includes 76 apartment units above 13,000 square feet of commercial space. Amenities would include a clubhouse, fitness center, outdoor courtyard with kitchen, lounge and swimming pool.	13,000	In Planning Stages	1500 S ST	2.9	NA
6	Ice Blocks	Midtown	This project includes new mixed use buildings after the demolition of the former Crystal Ice buildings. Ice Blocks I will be a 3-story mixed-use building with large first-floor retail spaces, including outdoor patios and two floors of office space. Block 2 will be approximately 150 residential units across two buildings. The 3rd Block will have a preserved façade and a cluster of businesses in smaller spaces. The project will have approximately 60,000 square feet of retail and 50,000 square feet of office space. A fire in early November 2015 has temporarily derailed the project and timing is unknown.	60,000	In Planning Stages	R St between 16th and 18th streets	3.0	NA
7	Sacramento Natural Foods Co-Op	Midtown	This project includes an expanded store with 320 parking spaces. This store is going to replace the existing 16,000-square-foot store at 1900 Alhambra and scattered office space. The new store will include 25,467 square feet of ground floor commercial space and 16,586 square feet of second floor office space. ALH Economics estimates up to 9,467 square feet of net additional retail space.	9,467	Under Construction	29th and R streets	3.1	2016

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Exhibit 22
Cumulative Major Retail Developments (5,000+ Square Feet)
City of Sacramento (1)
December 2015

	Project (2)	City Area	Description	Estimated Net New Retail Square Footage	Status	Location	Distance from Site (miles)	Anticipated Opening / Completion
	CONTINUED FROM THE PREVIOUS PAGE							
8	Whole Foods	Midtown	The project is a mixed-use building at 2001/2025 L St. With approximately a 41,000-square-foot Whole Foods store, 141 residential units, and three levels of parking. Construction is estimated to begin Spring 2016.	41,000	Approved	2001 L Street	3.2	2017
9	Alder Gove/Marina Vista	Upper Land Park	This project is in very concecptual stages and seeks to redevelop 751 existing affordable housing units and replace it with 1,200 to 1,500 units and 28,000-34,000 square feet of retail and/or services and upto 6,000 of commercial use.	34,000	In Planning Stages	Broadway and 5th St	3.2	NA
10	2101 Capitol Ave	Midtown	The six-level structure is part of the Whole Foods project and will include 12,405 square feet of retail / commercial space and a 6-level parking garage.	12,405	Approved	2101 Capitol Ave	3.2	2017
11	3675 T St	Elmhurst	This mixed use project includes the demolition of an existing office building and the construction of a new building with 214 residential units and 6,000 square feet of first-floor retail	6,000	In Planning Stages	3675 T St	3.3	NA
12	401 Broadway	Upper Land Park	The first phase of the project will be a four-story commercial building of about 122,000 square feet. The majority of this space is self-storage business and units and the building will also have 5,000 square feet of retail space. A second phase will be a five-story, 53,000-square-foot building of condominiums above approximately 5,300 square feet of retail. This project is estimated to begin construction in spring 2016 and the second phase is expected to begin six months after the first phase.	10,300	Building permits in process	401 Broadway	3.4	2017
13	The Mill at Broadway (formerly Northwest Land Park) Future Phases	Upper Land Park	This project comprises close to 1,000 single-family units, 18,200 square feet of retail, and 6,000 square feet of office space. Work began on the first homes in 2015.	18,200	Under Construction	5th St and 1st Ave	3.5	NA
14	800 Block (K Street)	Downtown	The City is making contributions to the arena project including transferring additional parcels to the Kings in lieu of a financial contribution, including this parcel. The City has accepted a proposal from D&S Development if the Kings don't move forward with the first right of refusal to acquire 800 K Street. The parcel is currently approved as a mixed-used development with 200 multifamily units and 22,577 square feet of ground floor retail space.	22,577	Approved	800 K St	4.1	NA
15	The Towers on Capitol Mall	Downtown	This is a mixed-used development with 810 condo units and 80,000 square feet of retail space. This project has been on hold since the most recent recession. CalPERS owns the site and noted that interest is growing since the arena development.	80,000	Approved - Permits Expired	Capitol and 4th St	4.2	NA

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Exhibit 22
Cumulative Major Retail Developments (5,000+ Square Feet)
City of Sacramento (1)
December 2015

	Project (2)	City Area	Description	Estimated Net New Retail Square Footage	Status	Location	Distance from Site (miles)	Anticipated Opening / Completion
	CONTINUED FROM THE PREVIOUS PAGE							
16	Downtown Commons (DOCO)	Downtown	This is the mixed use portion of a multi-use indoor venue for entertainment and sporting events in the former Downtown Plaza. The project will add up to 1.5 million square feet of additional development with 475,000 square feet of office, 350,000 square feet of retail, a 250-room hotel, and 550 residential units projected to open by Fall 2016.	350,000	Under Construction	J St and 3rd St	4.6	2016
17	Sacramento Commons	Downtown	This project proposes two high-rise residential building, two mid-rise residential buildings, and a mixed-use building with 36,400-49,000 square feet of neighborhood support/retail and hotel that could include up to 300 rooms.	49,000	Proposed	658 N St	4.6	NA
18	700 Block K St	Downtown	This project includes 12-15 retail spaces of predominantly local restaurants, retail, and nightlife, tenants already include the Shady Lady, Insight Coffee Roasters, and Red Rabbit. Above the retail are 137 mixed-income apartments with amenities such as a community room on the upper level of the historic "WT Grant" building, fitness room, underground parking, and residential storage closets.	70,000	Under Construction	7th and K St	4.8	2016
19	The Railyards	Downtown	This project is one of the Nation's largest infill projects. The property was recently transferred with new concepts for the development including a public market, stores, restaurants, a brewery, hotel, a corporate campus, and a MLS soccer stadium. Kaiser has plans for a medical center in the northwestern portion. Street infrastructure is complete, but not open to the public. The original conceptualization of the project comprised 12,200 housing units, 2.4 million square feet of office space, 1.4 million square feet of retail, 485,000 square feet of cultural/historical space, a 1,100-room hotel, and 40+ acres of open space. In addition the existing train depot will be restored and enhance transit.	1,400,000	Infrastructure Under Construction	The Southern Pacific Railyards with I-5 and the Sacramento River to the east	4.8	2035
20	California Fruit Building	Downtown	This project is the renovation of the California Fruit Building into 49,000 square feet of office space and 10,000 square feet of ground floor retail and restaurant space.	10,000	Under Construction	1006 4th St	5.0	2016
21	Metropolitan	Downtown	This project comprises a 41-story high rise with 190 multifamily units and 11,000 square feet of retail. Demolition work has begun on part of the property, though it is unsure when construction will start.	11,000	Approved	10th St and J St	5.1	NA

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Exhibit 22
Cumulative Major Retail Developments (5,000+ Square Feet)
City of Sacramento (1)
December 2015

	Project (2)	City Area	Description	Estimated Net New Retail Square Footage	Status	Location	Distance from Site (miles)	Anticipated Opening / Completion
	CONTINUED FROM THE PREVIOUS PAGE							
22	Vanir Tower	Downtown	This proposed project comprises a 26-story tower with 372,000 square feet of office and ground floor retail space situated across the street from the Entertainment and Sports Center. It is estimated that the ground floor will be retail.	14,308	Approved	601 J St	5.2	NA
23	6601 Folsom Blvd	East Sacramento	The proposal is to construct a new three-story, mixed use building with 5,104 square feet of ground floor retail and 10 residential dwellings on the upper floors.	5,104	Approved	6601 Folsom Blvd	5.8	NA
24	Township Nine	Sacramento	This project is mixed-use development located adjacent to the American River in Downtown. The project is situated on 65 acres and comprises 2,350 housing units, 800,000 square feet of office space, and 100,000 square feet of urban retail. The first apartment is complete with 180 affordable apartment units.	100,000	Under Construction	640 Bercut Dr	5.9	2019
			Grand Total	**2,521,421**				
			Total Projects Potentially Developed Before or Concurrent with the Raley's retail (2)	**723,622**				

Sources: City of Sacramento Planning Department; Sacramento Business Journal; Sacramento Bee; downtownsac.org; project websites; and ALH Urban & Regional Economics.

(1) Projects listed based on distance from the Project site.
(2) Projects with an undetermined timeline are too speculative for inclusion in the following cumulative supply analysis, are anticipated to be developed after the 2019 anticipated timeframe for development of Land Park Commercial Center Project, or are located too far from the Site are denoted with gray shading. Thus the total of projects potentially developed before or concurrent with the Land Park Commercial Center Project includes projects not shaded in gray.

(3) Square footages estimated by ALH Urban & Regional Economics based on typical size for fast food restaurants and gas station convenience stores.

Exhibit 23: Land Park Commercial Center Project and Cumulative Projects

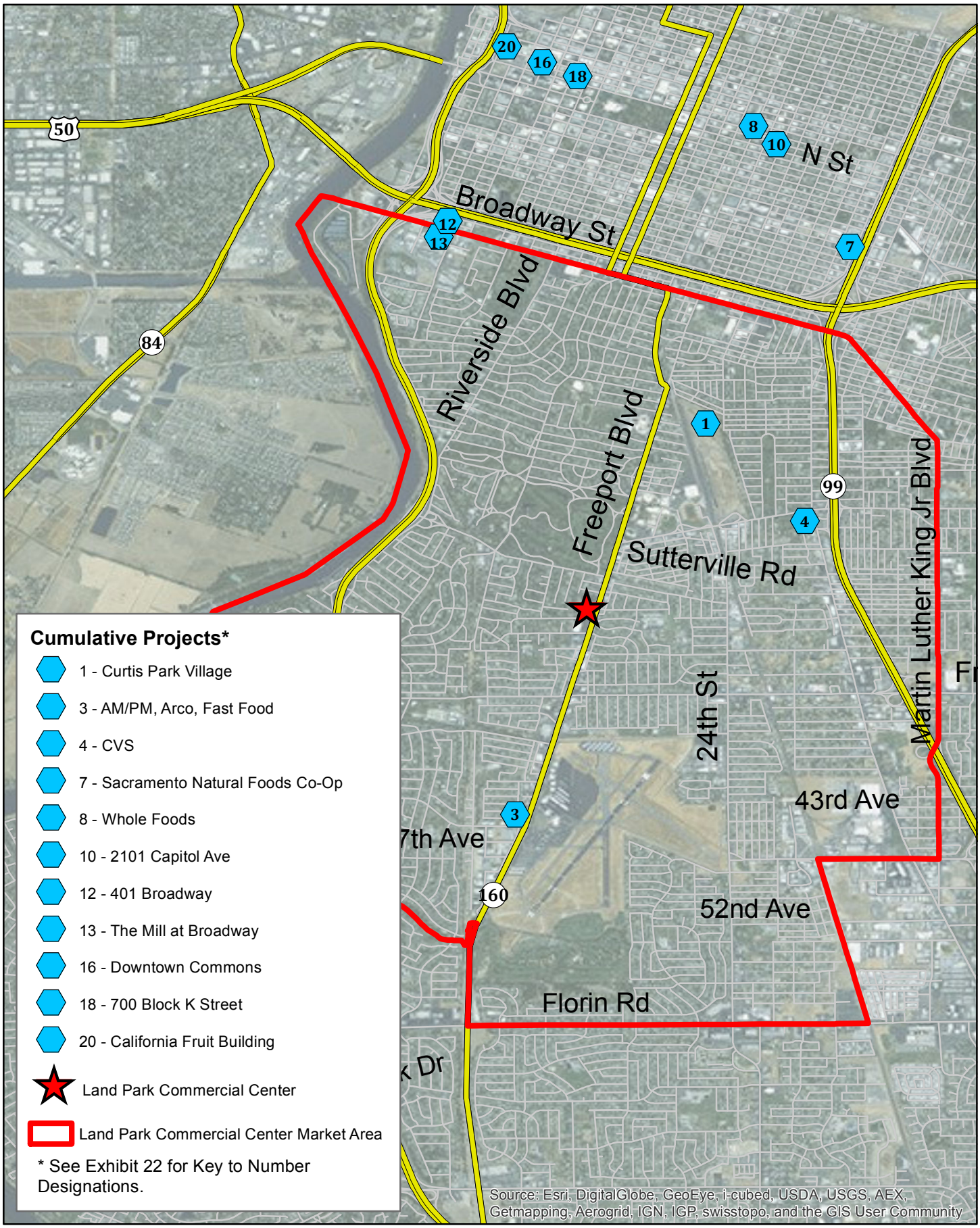

Exhibit 24
Sales Estimates for Cumulative Retail Projects (1)
2015 Dollars

	Project Name (2)	Miles from Site (2)	Estimated Sq. Ft. (2) [A]	Sales per Sq. Ft. (3) [B]	Percentage Non-Retail (4) [C]	Occupancy Assumption (5) [D]	Total Retail Sales [E = (A x B x C x D]	Percent Sales from Inside the Land Park Commercial Project Market Area (6) [F]	Market Area Sales [G = F x E]
1	Curtis Park Village (7)	0.5				95%		33%	
	Safeway		55,000	$576 (8)			$30,083,248		$9,927,472
	Unknown		125,000	$375	15%		$6,679,688		$2,204,297
	subtotal		180,000				$36,762,936		$12,131,769
3	AM/PM, Arco, and Fast Food Restaurant	1.4			NA	100%		60%	
	AM/PM Convenience Store		2,700	$601 (9)			$1,623,103		$973,862
	Fast Food restaurant		2,350	$521 (10)			$1,223,801		$734,280
	subtotal		5,050				$2,846,904		$1,708,142
4	CVS	1.5	17,200	$889 (11)	NA	100%	$15,294,019	40%	$6,117,608
7	Sacramento Natural Foods Co-Op	3.1	9,467	$691 (12)	NA	100%	$6,541,900	15%	$981,285
8	Whole Foods	3.2	41,000	$930 (13)	NA	100%	$38,130,000	5%	$1,906,500
10	2101 Capitol Ave	3.2	12,405	$375	5%	100%	$4,651,875	15%	$697,781
12	401 Broadway	3.4	10,300	$375	5%	100%	$3,862,500	10%	$386,250
13	The Mill at Broadway	3.5	18,200	$375	5%	100%	$6,825,000	10%	$682,500
16	Downtown Commons (DOCO)	4.6				95%		5%	
	Restaurants		45,000	$500 (14)			$21,354,473		$1,067,724
	Unknown		305,000	$375	15%		$16,298,438		$814,922
	subtotal		350,000				$37,652,910		$1,882,646
18	700 Block K St	4.8				95%		5%	
	Restaurants		14,000	$500 (14)			$6,643,614		$332,181
	Unknown		56,000	$375	10%		$1,995,000		$99,750
	subtotal		70,000				$62,589,961		$431,931
20	California Fruit Building	5.0	10,000	$375	5%	100%	$187,500	5%	$9,375
	Total		**723,622**				**$215,345,505**		**$26,935,786**

CONTINUED ON THE NEXT PAGE

Exhibit 24
Sales Estimates for Cumulative Retail Projects (1)
2015 Dollars

CONTINUED FROM THE PREVIOUS PAGE

Sources: Safeway Inc., 10-K for the fiscal year ended January 3, 2015; AECOM, "Market Demand Study: Proposed Whole Foods Market at 2025 L Street, Sacramento CA," dated March 3, 2015; and ALH Urban & Regional Economics.

(1) Projects with an undetermined timeline are generally too speculative for inclusion in this analysis. Projects anticipated to be developed substantially after the Land Park Commercial Center Project are also not included in this analysis. Project numbers match the numbers on Exhibit 23.
(2) See Exhibit 22.
(3) Unless otherwise specified, a standard sales per square foot assumption is applied to the cumulative projects based upon project size. This assumption is intended to be a generalized average assumption regarding prospective sales per square foot. The figure is $375 per square foot.
(4) Projects are assumed to have some component of retail sales not associated with the State of California Board of Equalization retail sales categories used for this analysis. These typically include personal services, repair services, etc. A standard assumption regarding percent of space devoted to retail sales by project size was applied to all projects. This assumption is less than 20,000 sq. ft., 5%; 20,000 - 100,000 sq. ft., 10%; and greater than 100,000 sq. ft., 15%. There are three exceptions; CVS, the Sacramento Natural Foods Co-op and the Whole Foods where only one tenant is identified.
(5) A standard occupancy/vacancy assumption was assumed for all projects except as noted, as vacancy allows for market fluidity. The general assumption is 0% vacancy for projects under 20,000 square feet or single tenant projects and 5% for all other projects. This is a lower percentage than assumed elsewhere in the analysis, reflecting anticipated higher demand for new retail projects.
(6) This column comprises the percent of the cumulative project's market area assumed to overlap with the Land Park Commercial Center Project market area. If the cumulative project market area is anticipated to be smaller than and mostly subsumed within the Land Park Commercial Center Project's market area then this assumption is the same as the estimated allocation of 80% for the Project. Other projects anticipated to have a similar market area and similar share of sales generated by market area households as the Land Park Commercial Center Project are designated a share of market area sales more comparable to the Project's anticipated share of sales. Percentages are also based on the size of the project and distance from the Land Park Commercial Center Project market area.
(7) This project may additionally include a gasoline station. This component is not included in this analysis for three reasons: it is a source of contention in the project's approval process; this use is of no significant to the Land Park Commercial Center Project; and the market area exhibits strong retail leakage in this category.
(8) Based upon sales for Safeway for the fiscal year ended January 3, 2015 as reported in the Safeway 10-K report.
(9) Assumption based upon range of sales for supermarkets, drug stores, and restaurants reported by Retail Maxim, see Exhibit B-1.
(10) Assumption based upon range of sales for fast food restaurants reported by Retail Maxim, see Exhibit B-1.
(11) Assumption based upon sales for CVS as reported by Retail Maxim, see Exhibit B-1.
(12) Assumption based upon range of sales for organic/gourmet grocery stores reported by Retail Maxim, see Exhibit B-1.
(13) Assumption for Whole Foods sales based on a memo from AECOM titled, "Market Demand Study: Proposed Whole Foods Market at 2025 L Street, Sacramento CA," dated March 3, 2015.
(14) Assumption based upon range of sales for restaurants reported by Retail Maxim, see Exhibit B-1.

Exhibit 25
Estimate of Cumulative Retail Project Competitive Sales By Board of Equalization Category (1)
2015 Dollars

Planned Project	Estimated Market Area Sales (3)	Assumed Type of Center/Use (4)	Sales Distribution (2)					
			Home Furnishings and Appliance Stores	Food and Beverage Stores	Clothing and Clothing Accessories Stores	General Merchandise Stores	Food Services and Drinking Places	Other Retail Group
1 Curtis Park Village (7)								
Safeway	$9,927,472	Grocery	$0	$9,927,472	$0	$0	$0	$0
Unknown	$2,204,297	Neighborhood	$440,859	$0	$440,859	$440,859	$440,859	$440,859
subtotal	$12,131,769							
3 AM/PM, Arco, and Fast Food Restaurant								
AM/PM Convenience Store	$973,862	Grocery	$0	$973,862	$0	$0	$0	$0
Fast Food restaurant	$734,280	Food Services	$0	$0	$0	$0	$734,280	$0
subtotal	$1,708,142							
4 CVS (5)	$6,117,608	Neighborhood	$0	$0	$0	$0	$0	$6,117,608
7 Sacramento Natural Foods Co-Op	$981,285	Grocery	$0	$981,285	$0	$0	$0	$0
8 Whole Foods	$1,906,500	Grocery	$0	$1,906,500	$0	$0	$0	$0
10 2101 Capitol Ave	$697,781	Neighborhood	$139,556	$0	$139,556	$139,556	$139,556	$139,556
12 401 Broadway	$386,250	Neighborhood	$0	$0	$0	$0	$0	$386,250
13 The Mill at Broadway	$682,500	Neighborhood	$68,250	$136,500	$0	$0	$341,250	$136,500
16 Downtown Commons (DOCO)								
Restaurants	$1,067,724	Food Services	$0	$0	$0	$0	$1,067,724	$0
Unknown	$814,922	Regional	$162,984	$0	$203,730	$244,477	$40,746	$162,984
subtotal	$1,882,646							
18 700 Block K St								
Restaurants	$332,181	Food Services	$0	$0	$0	$0	$332,181	$0
Unknown	$99,750	Neighborhood	$32,918	$0	$33,915	$0	$0	$32,918
subtotal	$431,931							
20 California Fruit Building	$9,375	Neighborhood	$1,875	$0	$938	$0	$4,688	$1,875
Total (6)	**$26,935,786**		**$846,443**	**$13,925,619**	**$818,999**	**$824,892**	**$3,101,284**	**$7,418,550**
Percent of Total			**3%**	**52%**	**3%**	**3%**	**12%**	**28%**

Source: ALH Urban & Regional Economics.

(1) Retail categories to which no sales are allocated are not shown in this exhibit. Project numbers match the numbers on .
(2) Sales are distributed based upon professional judgement exercised by ALH Urban & Regional Economics. Projects that are grocery store oriented are all assigned 100% of sales to the Food and Beverage stores category. The sales at CVS are assigned to the Other Retail category as this is how these sales are categorized by the State of Calfiornia Board of Equalization at the city level. All other assumptions were developed by ALH Economics based upon the location, size, and type of retail space, and generally include a mix of most major retail catgories.
(3) See Exhibit 24. These comprise the sales anticipated to be generated by Land Park Commercial Center Project market area households.
(4) Unless a specific retailer or retail type is identified, sales are allocated consistent with general trends for the shopping centers by size, as presented in Exhibit B-7. Centers with less than 100,000 square feet are considered neighborhood centers, centers with 100,0000 - 300,000 square feet are considered community centers, and centers with more than 300,000 square feet are considered regional centers.
(5) At the city level pharmacy sales are reported as "Other Retail" sales.
(6) Figures may not total due to rounding.

Exhibit 26
Land Park Commercial Center and Cumulative Retail Project Net New Market Area Sales
2015 Dollars

Retail Category	Net New Market Area Generated Project Sales (1)	Net New Cumulative Project Competitive Retail Sales (2)	Total All Planned Retail Market Area Generated Project Sales
Motor Vehicle & Parts Dealers	$0	$0	$0
Home Furnishings & Appliances	$1,371,667	$846,443	$2,218,109
Building Materials & Garden Equipment	$956,406	$0	$956,406
Food & Beverage Stores	$2,640,000	$13,925,619	$16,565,619
Gasoline Stations	$0	$0	$0
Clothing & Clothing Accessories	$1,637,358	$818,999	$2,456,357
General Merchandise Stores	$947,812	$824,892	$1,772,704
Food Services & Drinking Places	$4,493,170	$3,101,284	$7,594,453
Other Retail Group	$4,589,339	$7,418,550	$12,007,889
Total	**$16,635,752**	**$26,935,786**	**$43,571,538**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 6.
(2) See Exhibit 25.

Exhibit 27
Land Park Commercial Center Project and Cumulative Projects Potential Sales Impacts
Market Area
2015 Dollars

Retail Category	Net New Project and Cumulative Project Sales Generated by Market Area Households (1)	Market Area Sales Base (2)	Market Area Leakage		Remaining Sales Impacts (5)	Demand from New Market Area Households 2015-2019 (6)	Sales Impacts Less New Demand	
			Leakage Amount (3)	Potential Project Recapture (4)			Amount (7)	% of Market Area Sales Base (8)
	[A]	[B]	[C]	[D= C * %]	[E = A + D]	[F]	[G = E - F]	[H = E / B]
Motor Vehicle & Parts Dealers	$0	$63,031,269	($12,671,547)	$0	$0	$3,160,209	$0	0.0%
Home Furnishings & Appliances	$2,218,109	$9,746,076	($18,549,051)	($2,218,109)	$0	$1,181,178	$0	0.0%
Building Materials & Garden Equipment	$956,406	$11,621,657	($21,427,047)	($956,406)	$0	$1,379,616	$0	0.0%
Food & Beverage Stores	$16,565,619	$86,713,070	($7,151,922)	($7,151,922)	$9,413,697	$3,918,388	$5,495,309	6.3%
Gasoline Stations	$0	$55,084,956	($8,229,238)	$0	$0	$2,643,047	$0	0.0%
Clothing & Clothing Accessories	$2,456,357	$6,288,545	($32,592,647)	($2,456,357)	$0	$1,623,093	$0	0.0%
General Merchandise Stores	$1,772,704	$36,288,298	($40,069,652)	($1,772,704)	$0	$3,187,558	$0	0.0%
Food Services & Drinking Places	$7,594,453	$59,059,395	($10,842,008)	($3,797,227)	$3,797,227	$2,918,029	$879,197	1.5%
Other Retail Group	$12,007,889	$55,804,046	($13,024,832)	($7,925,207)	$4,082,682	$2,873,257	$1,209,425	2.2%
Total	**$43,571,538**	**$383,637,312**	**($164,557,944)**	**($26,277,932)**	**$17,293,606**	**$22,884,375**	**$7,583,931**	**2.0%**

Source: ALH Urban & Regional Economics.

(1) See Exhibit 26.
(2) See Exhibit 13.
(3) See Exhibit 15.
(4) Potential Project leakage recapture figures are based upon assumptions prepared by ALH Urban & Regional Economics. The assumptions vary by category, depending upon the nature of the prospective Project tenant, the type of existing market area retailers, and the likelihood that retailers outside the market area will continue to attract sales from the market area due to their brand, national orientation, or regional prevalence. Typically, if anticipated net new Project and cumulative project sales generated by market area households are less than 25% of the estimated leakage, then 100% of the Project's sales are anticipated to be absorbed through leakage. For other categories, the percent of recaptured leakage varies by the nature of the good. For example, as a convenience purchase, 100% of the leakage in Food & Beverage Stores is assumed to be recaptured by the combined net new Project and cumulative project sales generated by market area households. In like manner, Food Service & Drinking Places recapture is assumed to be high at 50% of the leakage, and Other Retail Group leakage recapture is assumed to be 66%, since a significant part of these sales are Project sales intended to meet community needs and CVS pharmacy sales, which is a typically very local-oriented use.

(5) Designates the amount of Project and cumulative project retail sales impacts remaining after consideration of recaptured market area leakage, but before consideration of new market area demand generated between 2015 and 2019, with 2019 comprising the first full year of operations for the Land Park Commercial Center Project.
(6) See Exhibit 9.
(7) Designates the amount of Project and cumulative project retail sales impacts remaining after consideration of **both** recaptured market area leakage and new market area demand generated between 2015 and 2019, with 2019 comprising the first full year of operations for the Land Park Commercial Center Project.
(8) Remaining impacts expressed as a share of the estimated existing market retail sales base, i.e., the retail sales base in 2015. These percentages will decline as a share of the future retail sales base once the Project and cumulative projects are completed.

Exhibit 28
City of Sacramento Vacancy Trends
2006 Through Q3 2015

	Rentable Building Area						Leasing Activity		New Construction			
Period	# Bldgs	Total SF	Vacant SF	Percent Vacant	Occupied SF	Total Net Absorption	Total Deals	Total SF Leased	Number Delivered	RBA Delivered	# Under Const	RBA Under Const
2015 Q3	3,494	36,833,200	3,126,348	8.50%	33,706,852	51,335	54	307,929	0	0	4	435,792
2015 Q2	3,494	36,833,200	3,177,683	8.60%	33,655,517	172,517	68	182,121	2	5,450	3	423,792
2015 Q1	3,492	36,827,750	3,344,750	9.10%	33,483,000	63,665	70	215,076	2	21,268	4	149,382
2014 Q4	3,490	36,806,482	3,387,147	9.20%	33,419,335	130,773	60	168,692	3	41,515	4	157,768
2014 Q3	3,487	36,764,967	3,476,405	9.50%	33,288,562	78,035	79	270,973	4	67,366	4	45,115
2014 Q2	3,483	36,697,601	3,485,423	9.50%	33,212,178	45,718	91	279,734	3	28,592	8	112,481
2014 Q1	3,480	36,669,009	3,502,549	9.60%	33,166,460	265,178	74	187,182	8	118,420	8	125,383
2013 Q4	3,472	36,550,589	3,649,307	10.00%	32,901,282	23,025	84	228,822	3	93,200	15	215,933
2013 Q3	3,469	36,457,389	3,579,132	9.80%	32,878,257	182,486	77	265,593	4	71,532	14	242,714
2013 Q2	3,465	36,385,857	3,690,086	10.10%	32,695,771	81,632	78	288,628	1	3,776	13	282,118
2013 Q1	3,464	36,382,081	3,767,942	10.40%	32,614,139	-24,187	79	188,110	0	0	6	128,315
2012 Q4	3,464	36,382,081	3,743,755	10.30%	32,638,326	68,280	72	230,858	3	13,975	2	41,720
2012 Q3	3,461	36,368,106	3,798,060	10.40%	32,570,046	-99,262	102	367,439	2	10,000	3	13,975
2012 Q2	3,459	36,358,106	3,688,798	10.10%	32,669,308	-9,467	55	293,584	3	27,500	5	23,975
2012 Q1	3,456	36,330,606	3,651,831	10.10%	32,678,775	15,104	59	235,716	0	0	6	38,308
2011 Q4	3,456	36,330,606	3,666,935	10.10%	32,663,671	-12,896	47	165,332	0	0	3	25,308
2011 Q3	3,456	36,330,606	3,654,039	10.10%	32,676,567	172,441	72	281,670	1	17,300	1	808
2011 Q2	3,455	36,313,306	3,809,180	10.50%	32,504,126	59,494	84	276,697	2	10,378	2	18,108
2011 Q1	3,453	36,302,928	3,858,296	10.60%	32,444,632	-90,888	67	231,279	1	15,007	3	27,678
2010 Q4	3,452	36,287,921	3,752,401	10.30%	32,535,520	86,137	68	212,304	1	16,740	3	25,385
2010 Q3	3,451	36,271,181	3,821,798	10.50%	32,449,383	-73,599	67	185,043	1	5,100	2	31,747
2010 Q2	3,450	36,266,081	3,743,099	10.30%	32,522,982	135,594	86	304,625	2	29,150	2	21,840
2010 Q1	3,448	36,236,931	3,849,543	10.60%	32,387,388	-130,035	65	186,801	8	86,252	3	34,250
2009 Q4	3,440	36,150,679	3,633,256	10.10%	32,517,423	33,544	66	192,249	6	82,589	10	115,402
2009 Q3	3,434	36,068,090	3,584,211	9.90%	32,483,879	-220,534	76	269,449	4	100,088	16	197,991
2009 Q2	3,430	35,968,002	3,263,589	9.10%	32,704,413	68,103	73	202,002	5	258,984	18	292,679
2009 Q1	3,425	35,709,018	3,072,708	8.60%	32,636,310	-128,803	50	100,224	6	74,257	16	444,132
2008 Q4	3,419	35,634,761	2,869,648	8.10%	32,765,113	-34,253	42	149,433	4	45,720	15	434,937
2008 Q3	3,415	35,589,041	2,789,675	7.80%	32,799,366	29,049	52	162,503	11	230,886	15	380,561
2008 Q2	3,404	35,358,155	2,587,838	7.30%	32,770,317	-205,504	27	98,102	7	115,198	22	570,667
2008 Q1	3,397	35,242,957	2,267,136	6.40%	32,975,821	-48,689	31	134,531	15	132,897	24	629,884
2007 Q4	3,382	35,110,060	2,085,550	5.90%	33,024,510	268,784	29	79,472	9	229,925	33	692,607
2007 Q3	3,373	34,880,135	2,124,409	6.10%	32,755,726	171,085	40	100,675	4	22,956	41	915,726
2007 Q2	3,369	34,857,179	2,272,538	6.50%	32,584,641	218,495	28	186,923	14	352,930	32	812,836
2007 Q1	3,355	34,504,249	2,138,103	6.20%	32,366,146	677,201	35	128,562	20	452,553	38	804,766
2006 Q4	3,335	34,051,696	2,362,751	6.90%	31,688,945	243,139	26	60,531	6	196,104	38	837,388
2006 Q3	3,329	33,855,592	2,409,786	7.10%	31,445,806	162,600	30	233,861	8	61,689	33	909,930
2006 Q2	3,321	33,793,903	2,510,697	7.40%	31,283,206	369,488	30	117,394	19	397,109	26	674,622
2006 Q1	3,302	33,396,794	2,483,076	7.40%	30,913,718	-181,958	21	45,300	34	437,116	39	1,014,038

Sources: Costar; and CB Richard Ellis.

Exhibit 29
Land Park Commercial Center Market Area and Bordering Market Area
Retail Vacancies Available for Lease
December 2015

	Property	Orientation to Market Area	Address	Driving Distance from Site (miles)	Year Built	Total Available Space (SF)	Former Use	Comments
In the Market Area								
1	Park Center	In the market area	4491-4543 Freeport Blvd	0.3		4,995	O'Reilly Auto Parts	
2	Freeport Shopping	In the market area	5101-5171 Freeport Blvd	0.3		3,080	Computer Store	
3	1900-1916 Fruitridge	In the market area	1900-1916 Fruitridge Rd	0.7	1980	4,200		
4	Lanai Center	In the market area	5663-5713 Freeport Blvd	0.7	1965/1987	10,000		
5	Florin West Center	Bordering the market area	7135 S. Land Park Dr	1.2		8,000	Hollywood Video	
6	Florin West Center	Bordering the market area	1299-1309 Florin Rd	1.2		4,000		
7	Vic's IGA Market	Bordering the market area	5820 S. Land Park Dr	1.5		29,000	Grocery store	
8	South Hills Shopping	Bordering the market area	5990 S. Land Park Dr	1.7		8,481		
9	Franklin Plaza	In the market area	5681 Franklin Blvd	1.9	1962	4,419		
10	1315 Broadway	Bordering the market area	1315 Broadway	2.5		3,500	Soul Food Restaurant	Under rehab for two new businesses
11	Cal Bank & Trust	Bordering the market area	1331 Broadway	2.5		12,000	Cal Bank & Trust	Pappas Investments purchased this for development
12	4220 Fruitridge Rd	Bordering the market area	4220 Fruitridge Rd	2.5	1969	5,550		
13	The Broadway Triangle	Bordering the market area	3425 Broadway	2.6	2014	7,040		
14	Golf Terrace Plaza	In the market area	1381-1399 Florin Rd	2.7		16,992		
15	3515 Broadway	Bordering the market area	3515 Broadway	2.7		3,200		
16	Strockridge Plaza	Bordering the market area	5021-5221 Fruitridge	3.2	1985/2001	11,050		
17	Florin Square Shopping	Bordering the market area	2326 Florin Rd	3.4	1961	39,917	Bowling Alley	
	Total					**175,424**		

Sources: CoStar; GoogleMaps; and ALH Urban & Regional Economics.

Exhibit 30
Examples of Larger Backfilled Retail Tenants in and Generally Near the Market Area

Location	Driving Distance from Site	Prior Tenant	Current/Future Tenant	Approximate Year of Occupancy	Estimated Square Footage
4408 Del Rio Rd	0.8	Asian-oriented Market	Sprouts (was Sunflower Market before merger)	2012	20,000
3500 Broadway	2.6	Tire store	Plant Foundry	2015	12,000
1349 Florin Road	2.7	Longs Drugs	California Family Fitness	2015	30,000
6419 Riverside Blvd	3.7	Nugget Market	Grocery Outlet	2013	23,000
5150 Stockton Blvd	3.8	Big Lots	Planet Fitness	2014	22,000
1700 Capitol Ave	3.3	Rick's Uptown Market	Grocery Outlet	2010	9,500
Southgate Plaza	5.3	Walmart	Walmart Neighborhood Market (occupying a portion of the former Walmart)	2015	52,000
Southgate Plaza	5.3	OfficeMax	Anna's Linens	2012	10,000
Southgate Plaza	5.3	Ross	Ross (moving back into former space with renovations)	2015	27,300
7923 E. Stockton Blvd	7.3	PetSmart	Grocery Outlet	2012	20,000
				Total:	**225,800**

Sources: Sacramento Business Journal; Sacramento Bee; Sacramento Press; and ALH Urban and Regional Economics.

APPENDIX B: SUPPORT EXHIBITS

Exhibit B-1
Calculation of Sales Per Square Foot Estimates
Select Retail Stores and Store Types
2010 Through 2013, and 2015 Projected (1)

	2010		2011		2012		2013		Average
Store or Category (2)	**In 2010$'s**	**In 2015$'s**	**In 2011$'s**	**In 2015$'s**	**In 2012$'s**	**In 2015$'s**	**In 2013$'s**	**In 2015$'s**	**In 2015$'s**
Apparel									
Apparel - Specialty	$405	$444	$447	$476	$472	$492	$451	$463	$469
Women's' Apparel	$365	$400	$455	$485	$515	$537	$473	$486	$477
Shoe Stores	$371	$406	$454	$484	$487	$508	$475	$488	$471
Ross Dress for Less	$324	$355	$195	$208	$195	$203	$362	$372	$284
Kohl's	$229	$251	$215	$229	$209	$218	$190	$195	$223
Discount Stores	$196	$215	$212	$226	$213	$222	$202	$208	$218
Target	$282	$309	$290	$309	$304	$317	$297	$305	$310
Wal-Mart	$422	$462	$499	$532	$456	$475	$376	$386	$464
Department Stores Category	$252	$276	$276	$294	$274	$286	$285	$293	$287
Sears	$206	$226	$205	$218	$210	$219	$161	$165	$207
Domestics Category	$294	$322	$288	$307	$268	$279	$300	$308	$304
Furniture Category	$198	$217	$290	$309	$361	$376	$449	$461	$341
Average of Domestics & Furniture	$246	$269	$289	$308	$315	$328	$375	$385	$323
Neighborhood Center Category									
Supermarkets	$535	$586	$533	$568	$575	$600	$611	$628	$595
Specialty/Organic	$510	$559	$658	$701	$698	$728	$756	$777	$691
Drug Stores	$724	$793	$657	$700	$667	$695	$629	$646	$709
Rite Aid	$421	$461	$560	$596	$549	$572	$556	$571	$550
CVS	$802	$878	$806	$858	$883	$921	$875	$899	$889
Restaurants Category	$429	$470	$496	$528	$480	$501	$486	$499	$500
Casual Dining	$431	$472	$578	$616	$563	$587	$567	$583	$564
Fast Food Chains	$431	$472	$507	$540	$492	$513	$543	$558	$521
Home Improvement	$269	$295	$278	$296	$287	$299	$301	$309	$300
Auto - DIY Stores (3)	$205	$225	$218	$232	$220	$229	$217	$223	$227
Other Retail Categories									
Accessories	$778	$852	$978	$1,042	$1,191	$1,242	$1,032	$1,060	$1,049
HBA, Home Fragrances	$541	$593	$474	$505	$531	$554	$519	$533	$546
Electronics & Appliances	$686	$751	$1,171	$1,247	$821	$856	$946	$972	$957
Office Supplies	$263	$288	$270	$288	$262	$273	$283	$291	$285
Sports	$226	$248	$239	$255	$252	$263	$253	$260	$256
Pet Supplies	$185	$203	$188	$200	$218	$227	$234	$240	$218
Book Superstores	$180	$197	$247	$263	$210	$219	$189	$194	$218
Toys	$320	$351	$333	$355	$312	$325	$220	$226	$314
Music Superstores	$318	$348	$317	$338	$314	$327	$292	$300	$328
Gifts, Hobbies & Fabrics	$124	$136	$136	$145	$137	$143	$151	$155	$145
Average of Other Retail Categories	$362	$397	$435	$464	$425	$443	$412	$423	$432

Sources: Retail MAXIM, "Alternative Retail Risk Analysis for Alternative Capital" 2011, 2012, 2013, and 2014 (all publications present figures in the prior year dollars); United States Bureau of Labor Statistics Consumer Price Index - All Urban Consumers; and ALH Urban & Regional Economics.

(1) Figures are adjusted to 2015 pursuant to the April CPI Index for all urban consumers.
(2) Includes industry-and category-representative stores.
(3) Average reflects a four-year trend.

Exhibit B-2
Land Park Commercial Center Project
Market Area Census Tracts, Associated Zip Codes, and Household Counts
2008-2020

Market Area Census Tracts (0606700)	Marjority Zip Code	Households 2008	Households 2020	Compound Annual Average Growth Rates 2008-2020
22.00	95818	8,639	9,673	0.947%
23.00	95818	8,639	9,673	0.947%
24.00	95818 (95822)	8,639	9,673	0.947%
25.00	95818	8,639	9,673	0.947%
26.00	95818	8,639	9,673	0.947%
27.00	95817	5,479	5,892	0.607%
33.00	95822	15,136	17,067	1.006%
34.00	95822 (95831)	15,136	17,067	1.006%
35.01	95822	15,136	17,067	1.006%
35.02	95822	15,136	17,067	1.006%
36.00	95820	11,401	13,807	1.608%
37.00	95820	11,401	13,807	1.608%
38.00	95822	15,136	17,067	1.006%
39.00	95822	15,136	17,067	1.006%
41.00	95822	15,136	17,067	1.006%
45.01	95824	8,600	9,863	1.148%

Sources: Sacramento Area Council of Governments (SACOG); and ALH Urban & Regional Economics.

Exhibit B-3
Household Income Spent on Retail (1)
United States
2013

Characteristic	All Consumer Units	Household Income Range $40,000 to $49,999	$50,000 to $69,999	$70,000 and more
Average HH Income	$63,784	$44,576	$59,101	$131,945
Amount Spent on Retail (2)	$20,555	$17,769	$21,104	$32,771
Percent Spent on Retail (3)	32%	40%	36%	25%

Sources: Table 1202. Income before taxes: Annual expenditure means, shares, standard errors, and coefficient of variation, Consumer Expenditure Survey, 2013, U.S. Bureau of Labor Statistics; and ALH Urban & Regional Economics.

(1) Includes retail categories estimated to be equivalent to the retail sales categories compiled by the State of California, Board of Equalization.
(2) Includes the Consumer Expenditures categories of: food; alcoholic beverages; laundry and cleaning supplies; other household products; household furnishings and equipment; apparel and services; vehicle purchases, cars and trucks, new; vehicle purchases, cars and trucks, used; vehicle purchaes, other vehicles; gasoline and motor oil; 1/2 of maintenance and repairs (as a proxy for taxable parts); drugs; medical supplies; audio and visual equipment and services; pets, toys, hobbies, and playground equipment; other entertainment supplies, equipment, and services; personal care products and services; and reading; tobacco prodcuts and smoking supplies.
(3) Percentages may be low as some expenditure categories may be conservatively undercounted by ALH Economics.

Exhibit B-4
State of California Board of Equalization Taxable Retail Sales Estimate by Retail Category
2013
(in $000s)

Type of Retailer	Total Taxable Sales (1)	State of California Taxable Sales Adjusted to Total Retail	% of Total
Motor Vehicle & Parts Dealers	$67,986,436	$67,986,436	13.8%
Home Furnishings & Appliances	$25,411,008	$25,411,008	5.2%
Building Materials & Garden Equipment	$29,680,053	$29,680,053	6.0%
Food & Beverage Stores	$25,289,203	$84,297,343 (2)	17.1%
Gasoline Stations	$56,860,585	$56,860,585	11.5%
Clothing & Clothing Accessories	$34,918,036	$34,918,036	7.1%
General Merchandise Stores	$51,431,094	$68,574,792 (3)	13.9%
Food Services & Drinking Places	$62,776,360	$62,776,360	12.8%
Other Retail Group	$48,086,943	$61,813,158 (4)	12.6%
Total (5)	**$402,439,718**	**$492,317,771**	**100%**

Sources: California State Board of Equalization (BOE), "Taxable Sales in California (Sales & Use Tax) during 2013; U.S. Economic Census, "Retail Trade: Subject Series - Product Lines: Product Lines Statistics by Kind of Business for the United States and States: 2007"; and ALH Urban & Regional Economics.

(1) Taxable sales are pursuant to reporting by the BOE.
(2) Sales for Food and Beverage Stores have been adjusted to account for non-taxable sales; only 30.0% of all food store sales are estimated to be taxable.
(3) Sales for General Merchandise Stores have been adjusted to account for non-taxable food sales, since some General Merchandise Store sales include non-taxable food items. ALH Urban & Regional Economics estimates that at least 25% of General Merchandise sales are for grocery items that are also non-taxable. This estimate is based on analysis of the 2007 U.S. Economic Census, which attributes approximately 26% of General Merchandise Stores sales to food.
(4) Sales for Other Retail Group have been adjusted to account for non-taxable drug store sales, since drug store sales are included in the Other Retail Group category. ALH Urban & Regional Economics estimates that 33.0% of drug store sales are taxable, based on discussions with the California BOE and examination of U.S. Census data. In California, drug store sales in 2013 represented approximately 14.06% of all Other Retail Group sales. ALH Urban & Regional Economics applied that percentage and then adjusted upward for non-taxable sales.

Exhibit B-5
Translation of Nielsen Retail Sales Categories to Board of Equalization Categories
City of Sacramento
in 2015 Dollars (millions)

Nielsen Sales Category	Nielsen Retail Sales 2015 2015 $'s	BOE Category
Motor Vehicle & Parts Dealers		
- Automotive Dealers	$265,670,038	**Motor Vehicles & Parts**
- Other Motor Vehicle Dealers	$51,161,666	
- Automotive Parts, Accessories, & Tire Stores	$111,793,345	
Furniture & Home Furnishings Stores		
- Furniture Stores	$23,088,419	
- Home Furnishing Stores	$32,618,194	
Electronics & Appliance Stores		**Home Furnishings & Appliances**
- Appliance, Television, and Other Electronics	$87,663,476	
- Household Appliances Stores	$18,739,018	
- Radio Television and Other Electronics	$68,924,458	
- Computer and Software Stores	$18,367,967	
- Camera & Photographic Equipment Stores	$1,927,684	
Building Material & Garden Equipment & Supply Dealers		
- Building Material & Supply Dealers	$502,416,276	
- Home Centers	$202,510,062	
- Paint and Wallpaper Stores	$20,712,823	**Building Materials and Garden Equip. & Supplies**
- Hardware Stores	$20,679,969	
- Other Building Materials Dealers	$258,513,422	
- Building Materials, Lumberyards	$96,685,204	
- Lawn and Garden Equipment and Supplies	$14,275,990	
- Outdoor Power Equipment Stores	$1,931,959	
- Nursery and Garden Centers	$12,344,031	
Food & Beverage Stores		
- Grocery Stores	$644,991,911	
- Supermarkets and Other Grocery Stores	$633,596,871	**Food and Beverage Stores**
- Convenience Stores	$11,395,040	
- Specialty Food Stores	$14,959,842	
- Beer, Wine, & Liquor Stores	$25,950,107	
Health & Personal Care Stores		
- Pharmacies and Drug Stores	$318,215,231	
- Cosmetics, Beauty Supplies and Perfume Stores	$34,168,443	
- Optical Goods Stores	$8,281,361	**Other Retail Group**
- Other Health and Personal Care Stores	$21,377,923	
Gasoline Stations		
- Gasoline Stations with Convenience Stores	$322,469,323	**Service Stations**
- Other Gasoline Stations	$59,687,610	
Clothing & Clothing Accessories Stores		
- Clothing Stores	$202,146,907	
- Men's Clothing Stores	$6,309,067	
- Women's Clothing Stores	$31,140,593	**Clothing & Clothing Accessories**
- Children's and Infants' Clothing Stores	$5,827,210	
- Family Clothing Stores	$141,111,441	
- Clothing Accessories Stores	$3,932,376	
- Other Clothing Stores	$13,826,220	
- Shoe Stores	$25,112,669	
- Jewelry, Luggage, & Leather Goods Stores	$21,958,785	
- Jewelry Stores	$21,082,770	
- Luggage, & Leather Goods Stores	$876,015	
Sporting Goods, Hobby, Book, & Music Stores		
- Sporting Goods, Hobby, & Musical Instruments	$55,704,664	
- Sporting Goods Stores	$33,960,948	
- Hobby, Toys and Games Stores	$13,557,183	
- Sew, Needlework, Piece Goods Stores	$2,024,800	
- Musical Instrument and Supplies Stores	$6,161,733	**Other Retail Group**
- Book, Periodical, & Music Stores	$19,883,946	
- Book Stores and News Dealers	$18,338,371	
- Book Stores	$17,822,060	
- News Dealers and Newsstands	$516,311	
- Prerecorded Tape, Compact Disc, & Records	$1,545,575	
General Merchandise Stores		**General Merchandise Stores**
- Department Stores excluding Leased Dept Stores	$522,979,913	
- Other General Merchandise Stores	$332,748,401	
Miscellaneous Store Retailers		
- Florists	$5,657,507	
- Office Supplies, Stationery, & Gift Stores	$53,312,651	
- Office Supplies and Stationery Stores	$23,526,609	**Other Retail Group**
- Gift, Novelty, and Souvenir Stores	$29,786,042	
- Used Merchandise Stores	$13,820,769	
- Other Miscellaneous Store Retailers	$50,598,063	
Non-store Retailers	$207,986,362	**Other Retail Group**
Foodservice & Drinking Places		
- Full-Service Restaurants	$410,599,331	**Food Services & Drinking Places**
- Limited-service Eating Places	$434,451,654	
- Special Foodservices	$86,874,662	
- Drinking Places - Alcoholic Beverages	$42,656,259	
TOTAL RETAIL STORES	**$5,045,577,349**	

Calculations

BOE Category	In Millions
Motor Vehicles & Parts	$428,625,049
Home Furnishings and Appliances	$163,665,740
Building Materials and Garden Equip	$516,692,266
Food and Beverage Stores	$685,901,860
Gasoline Stations	$382,156,933
Clothing and Clothing Accessories	$249,218,361
General Merchandise	$855,728,314
Food Services and Drinking Places	$974,581,906
Other Retail Group	$789,006,920
Retail Total	**$5,045,577,349**

Sources: Nielsen Reports; State of California Board of Equalization; and ALH Urban & Regional Economics.

Exhibit B-6
Translation of Nielsen Retail Sales Categories to Board of Equalization Categories
Land Park Raley Commercial Center Market Area
in 2015 Dollars (millions)

Nielsen Sales Category	Nielsen Retail Sales 2015 2015 $'s	BOE Category
Motor Vehicle & Parts Dealers		
- Automotive Dealers	$44,768,850	**Motor Vehicles & Parts**
- Other Motor Vehicle Dealers	$5,477,205	
- Automotive Parts, Accessories, & Tire Stores	$13,326,809	
Furniture & Home Furnishings Stores		
- Furniture Stores	$1,133,253	
- Home Furnishing Stores	$2,001,697	
Electronics & Appliance Stores		
- Appliance, Television, and Other Electronics	$3,222,358	**Home Furnishings & Appliances**
- Household Appliances Stores	$2,401,963	
- Radio Television and Other Electronics	$820,395	
- Computer and Software Stores	$340,976	
- Camera & Photographic Equipment Stores	$0	
Building Material & Garden Equipment & Supply Dealers		
- Building Material & Supply Dealers	$22,083,366	
- Home Centers	$4,748,292	
- Paint and Wallpaper Stores	$2,690,597	
- Hardware Stores	$2,179,835	**Building Materials and Garden Equip. & Supplies**
- Other Building Materials Dealers	$12,464,642	
- Building Materials, Lumberyards	$4,661,841	
- Lawn and Garden Equipment and Supplies	$963,337	
- Outdoor Power Equipment Stores	$763,922	
- Nursery and Garden Centers	$199,415	
Food & Beverage Stores		
- Grocery Stores	$52,198,407	
- Supermarkets and Other Grocery Stores	$50,389,383	**Food and Beverage Stores**
- Convenience Stores	$1,809,024	
- Specialty Food Stores	$1,183,160	
- Beer, Wine, & Liquor Stores	$2,764,621	
Health & Personal Care Stores		
- Pharmacies and Drug Stores	$20,337,785	
- Cosmetics, Beauty Supplies and Perfume Stores	$518,805	
- Optical Goods Stores	$655,368	**Other Retail Group**
- Other Health and Personal Care Stores	$2,177,226	
Gasoline Stations		
- Gasoline Stations with Convenience Stores	$35,690,463	**Service Stations**
- Other Gasoline Stations	$5,024,735	
Clothing & Clothing Accessories Stores		
- Clothing Stores	$3,633,321	
- Men's Clothing Stores	$299,397	
- Women's Clothing Stores	$1,330,349	
- Children's and Infants' Clothing Stores	$68,166	**Clothing & Clothing Accessories**
- Family Clothing Stores	$1,283,763	
- Clothing Accessories Stores	$108,548	
- Other Clothing Stores	$543,098	
- Shoe Stores	$0	
- Jewelry, Luggage, & Leather Goods Stores	$909,418	
- Jewelry Stores	$909,418	
- Luggage, & Leather Goods Stores	$0	
Sporting Goods, Hobby, Book, & Music Stores		
- Sporting Goods, Hobby, & Musical Instruments	$18,241,242	
- Sporting Goods Stores	$16,109,415	
- Hobby, Toys and Games Stores	$446,246	
- Sew, Needlework, Piece Goods Stores	$172,331	
- Musical Instrument and Supplies Stores	$1,513,250	**Other Retail Group**
- Book, Periodical, & Music Stores	$1,323,562	
- Book Stores and News Dealers	$550,343	
- Book Stores	$489,867	
- News Dealers and Newsstands	$60,476	
- Prerecorded Tape, Compact Disc, & Records	$773,219	
General Merchandise Stores		**General Merchandise Stores**
- Department Stores excluding Leased Dept Stores	$36,999,233	
- Other General Merchandise Stores	$9,936,014	
Miscellaneous Store Retailers		
- Florists	$755,881	
- Office Supplies, Stationery, & Gift Stores	$1,185,137	
- Office Supplies and Stationery Stores	$369,675	**Other Retail Group**
- Gift, Novelty, and Souvenir Stores	$815,462	
- Used Merchandise Stores	$2,379,098	
- Other Miscellaneous Store Retailers	$4,110,810	
Non-store Retailers	$12,094,722	**Other Retail Group**
Foodservice & Drinking Places		
- Full-Service Restaurants	$32,235,832	**Food Services & Drinking Places**
- Limited-service Eating Places	$28,663,316	
- Special Foodservices	$3,600,622	
- Drinking Places - Alcoholic Beverages	$961,949	
TOTAL RETAIL STORES	**$370,898,578**	

Calculations

BOE Category	In Millions
Motor Vehicles & Parts	$63,572,864
Home Furnishings and Appliances	$6,698,284
Building Materials and Garden Equip	$23,046,703
Food and Beverage Stores	$56,146,188
Gasoline Stations	$40,715,198
Clothing and Clothing Accessories	$4,542,739
General Merchandise	$46,935,247
Food Services and Drinking Places	$65,461,719
Other Retail Group	$63,779,636
Retail Total	**$370,898,578**

Sources: Nielsen Reports; State of California Board of Equalization; and ALH Urban & Regional Economics.

APPENDIX J

Geotechnical Investigation
Land Park Commercial Center

GEOTECHNICAL INVESTIGATION

PREPARED FOR:

NEWMARK CORNISH & CAREY
901 MARINERS ISLAND BOULEVARD, SUITE 120
SAN MATEO, CALIFORNIA 94404

PREPARED BY:

GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
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GEOCON

GEOCON PROJECT NO. S9695-05-03

NOVEMBER 2015

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S9695-05-03
November 19, 2015

Michael Maffia
Newmark Cornish & Carey
901 Mariners Island Blvd., Suite 120
San Mateo, CA 94404

Subject: GEOTECHNICAL INVESTIGATION
LAND PARK COMMERCIAL CENTER
SACRAMENTO, CALIFORNIA

Dear Mr. Maffia:

In accordance with your authorization, we have prepared this geotechnical investigation report for the proposed Land Park Commercial Center located on the west side of Freeport Boulevard between Wentworth Avenue and Meer Way in Sacramento, California.

The accompanying report presents our findings, conclusions, and recommendations regarding geotechnical aspects of designing and constructing the project as presently proposed. In our opinion, no adverse geotechnical conditions were encountered that would preclude re-development at the site provided recommendations of this report are incorporated into the design and construction of the project.

Please contact us if you have any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Jeremy J. Zorne, PE, GE
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
JEREMY J. ZORNE
No. 2686
GEOTECHNICAL
STATE OF CALIFORNIA

Richard C. Church, PE
Project Engineer

TABLE OF CONTENTS

CONTENTS (Continued)

GEOTECHNICAL INVESTIGATION

1.0 PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for the proposed Land Park Commercial Center located on the west side of Freeport Boulevard between Wentworth Avenue and Meer Way in Sacramento, California. The approximate site location is shown on the Vicinity Map, Figure 1.

The purpose of our geotechnical investigation was to observe and sample the subsurface conditions encountered at the site, and provide conclusions and recommendations relative to the geotechnical aspects of constructing the project as presently proposed.

To prepare this report, we performed the following scope of services:

- Performed a limited geologic and geotechnical literature review to aid in evaluating the geologic and geotechnical conditions present at the site. A list of referenced material is included in Section 9.0 of this report.
- Performed a site reconnaissance to review project limits, determine drill rig access, and mark exploratory boring locations for subsequent utility clearance.
- Notified subscribing utility companies via Underground Service Alert at least 48 hours (as required by law) prior to performing exploratory borings at the site.
- Paid required fees and obtained a soil boring permit from Sacramento County Environmental Management Department (SCEMD).
- Performed nine exploratory borings (B1 through B9) to depths ranging from approximately 5 to 31½ feet using a truck-mounted CME 75 drill-rig equipped with solid-flight and hollow-stem augers.
- Performed sampling at periodic intervals and collected selected soil samples from the borings for subsequent laboratory testing.
- Logged the exploratory borings in accordance with the Unified Soil Classification System (USCS).
- Upon completion, backfilled the borings with neat cement grout in accordance with SCEMD permit requirements. Borings in existing pavement areas were capped with cold patch asphalt concrete.
- Performed laboratory tests on selected soil samples to evaluate pertinent geotechnical parameters.
- Prepared this report summarizing our findings, conclusions, and recommendations regarding the geotechnical aspects of constructing improvements as presently proposed.

Details of our field exploration program including exploratory boring logs are presented in Appendix A. Approximate locations of exploratory borings are shown on the Site Plan, Figure 2 and proposed Development Plan, Figure 3. Details of our laboratory testing program and test results are summarized in Appendix B.

2.0 SITE AND PROJECT DESCRIPTION

The Site is located at 4700 Freeport Boulevard, between the Meer Way/Freeport Boulevard intersection and the Wentworth Avenue/Freeport Boulevard intersection in Sacramento, Sacramento County, California. The site is bordered by Freeport Boulevard on the east, commercial and residential property to the north and south, and residential property to the west.

The site was formerly developed as Capital Nursery – a retail nursery. The western and northern portions of the site were used to store plants and landscaping products. The eastern portion of the site was developed with greenhouses, a retail store, offices, and a parking lot. The central and southern portions of the site were developed with several buildings used for a variety of functions related to nursery operations and administration. Paved and unpaved lanes for vehicle and equipment access are present throughout the site. Known underground utilities on the site include power, water, gas, sewer, and an extensive network of irrigation lines, predominantly within the northwestern portion of the site.

Based on information presented in previous Phase I and Phase II *Environmental Site Assessments* (ESAs) of the site (Geocon, 2012), an aboveground air pressure tank associated with the site irrigation/sprinkler system is located within the southern portion of the site. Two former gasoline Underground Storage Tanks (USTs) of 1,000-gallon and 2,000-gallon capacities were formerly located within the south-central portion of the site (Figures 2 and 3). The UST's have been removed and backfilled; however, no reports of compaction testing of the UST backfill were noted in the ESAs or provided for our review. A former septic pit, which is currently open and covered with plywood) is located within the southeastern portion of the site (Figures 2 and 3). There was previously a diesel aboveground storage tank (AST) near the septic pit location.

The proposed redevelopment of the site consists of constructing a commercial center anchored by a Raley's grocery store. The center will include over 109,000 square feet of retail buildings including a 55,000-square-foot Raley's store, a 12,000-square-foot "junior anchor tenant" and approximately 42,000 square feet of shops and restaurants. Building construction will likely be of concrete masonry unit (CMU) and wood/steel framed. Anticipated structural loading was not provided to us for review. However, we anticipate relatively light to moderate structural loading consistent with the planned structure types. New structures will be supported on conventional shallow foundations with interior concrete slabs-on-grade. Other improvements will include onsite underground utility infrastructure, concrete flatwork, parking area pavement, and landscaping. Pavement will likely consist of hot mix asphalt (HMA) and/or rigid Portland cement concrete (PCC) pavement. The proposed project layout and details are shown on the Proposed Development Plan, Figure 3.

Grading plans are not yet available; however, due to the relatively flat site topography, we anticipate relatively minor grading with cuts and fills on the order of 3 feet or less. However, some underground utilities may require deeper excavations.

3.0 SOIL AND GEOLOGIC CONDITIONS

We identified soil conditions by observing and sampling exploratory borings and reviewing the referenced geologic literature (Section 9.0). Soil descriptions provided below include the USCS symbol where applicable. Below the pavement, where present, the site is generally underlain by alluvial soil locally mapped as Basin Deposits.

3.1 Site and Regional Geology

The site is located within the Great Valley Geomorphic Province of California, more commonly referred to as the Central Valley. The Central Valley is a broad depression bounded by the Sierra Nevada mountain range to the east and the Coast Ranges to the west. The valley has been filled with a thick sequence of sediments derived from weathering of the adjacent mountain ranges resulting in a stratigraphic section of Cretaceous, Tertiary, and Quaternary deposits.

The site is located near the southern end of the Sacramento Valley, approximately 1 mile east of the Sacramento River and approximately 4½ miles south of the confluence of the American River. Published geologic mapping depicts the site vicinity underlain by Quaternary-age Basin Deposits (map symbol Qb), (California Geological Survey [CGS], 2011).

3.2 Existing Pavement

Table 3.2 summarizes the pavement and gravel surfacing section material thicknesses encountered in our borings.

TABLE 3.2
EXISTING PAVEMENT/GRAVEL SECTIONS

Boring ID	Location	HMA (inches)	AB (inches)	Gravel (inches)
B1	Lot 1	--	--	6
B2	Lot 1	--	--	¾
B3	Central Driveway	3	6	--
B4	Eastern Parking Area – North	2½	4	--
B5	Lot 1	--	--	6
B6	Central Driveway	3	6½	--
B7	Eastern Parking Area – South	2	4	--
B8	Structure	--	--	3
B9	Lot 2	--	--	3

Notes:
Approximate boring locations shown on the Site Plan, Figure 2
HMA = Hot Mix Asphalt
AB = Aggregate Base

3.3 Fill

We encountered fill in Borings B3 and B6 within the proposed central parking area. The fill is located under the existing pavement section and generally consists of approximately 1 to 2 feet of damp, stiff silt (ML). Existing fill is not suitable for direct support of structures or additional fill and should be removed and replaced with engineered fill as described below if encountered within building pad areas.

Two borings were advanced at the location of the former gasoline UST's during the previous site exploration as part of the Phase II ESA performed by Geocon in 2012 (Borings B15 and B16). UST pit backfill depths were documented at approximately 8½ feet at the location of the 1,000 gallon UST and 18 feet at the location of the 2,000 gallon UST (Figures 2 and 3). The UST pit backfill generally consisted of variably loose to medium dense silty sand (SM) and poorly graded sand (SP). Logs of former Borings B15 and B16 are included in Appendix A.

3.4 Alluvium (Basin Deposits)

Below the fill and pavement section, where present, and at the ground surface elsewhere, we encountered alluvium mapped as Basin Deposits in each of our exploratory borings to the maximum depth explored of approximately 31½ feet. The alluvium generally consists of interbedded layers of stiff to hard lean clay (CL) and silt (ML) with variable amounts of sand. Laboratory Plasticity Index (PI) and Expansion index (EI) testing indicates low to moderate plasticity and corresponding low to moderate shrink/swell potential.

Subsurface conditions described in the previous paragraphs are generalized. The exploratory boring logs included in Appendix A detail soil type, color, moisture, consistency, and USCS classification of the materials encountered at specific locations and elevations.

4.0 GROUNDWATER

We encountered groundwater in Boring B2 at a depth of approximately 24½ feet on October 22, 2015. We did not encounter groundwater in the remaining borings (depths ranging from approximately 5 to 16½ feet).

In our previous boring (Boring B15) performed in the backfilled, former 1,000-gallon UST pit, we encountered perched groundwater at approximately 4 feet on May 25, 2012. Groundwater was not observed in the remaining 16 borings performed in May 2012.

To supplement our observations, we reviewed reports available on the California State Water Resources Control Board (SWRCB) GeoTracker website groundwater information at nearby facilities with a groundwater monitoring well array, such as leaking underground storage tank (LUST) facilities. Several such facilities are located within ¼ mile of the site. According to the information available on

GeoTracker, depth to groundwater in the area generally ranges between 18 and 20 feet. However, a few locations noted groundwater as shallow as 8 feet below the ground surface.

It should be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater may be higher or lower than the level observed during our investigation.

5.0 SEISMICITY AND GEOLOGIC HAZARDS

5.1 Regional Active Faults

The numerous faults in Northern California include active, potentially active, and inactive faults. The criteria for these major groups are based on criteria developed by the California Division of Mines and Geology (CDMG) for the Alquist-Priolo Earthquake Fault Zone Program (Hart, 1999). An active fault has experienced surface displacement within the last 11,000 years. A potentially active fault has experienced surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known movement within the past 11,000 years. Faults that have not moved in the last 1.6 million years are considered inactive. Based on our review of geologic maps and reports, the site is not within a currently established Alquist-Priolo (AP) Earthquake Fault Zone. No active or potentially active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the project is considered low.

The Northern California region is considered seismically active, and the site could be subjected to ground shaking in the event of an earthquake on one of the many active Northern California faults. Table 5.1 summarizes the distance of known active faults within 50 miles of the site, based on the computer program *EQFAULT* (Version 3, Blake, 2000).

TABLE 5.1
REGIONAL FAULT SUMMARY

Fault Name	Approximate Distance from Site (miles)	Maximum Earthquake Magnitude, M_w
Foothills Fault System	23.0	6.5
Great Valley, Segment 4	25.7	6.6
Great Valley, Segment 5	27.0	6.5
Great Valley, Segment 3	29.1	6.8
Great Valley, Segment 6	36.4	6.7
Concord – Green Valley	38.2	6.9
Hunting Creek - Berryessa	38.3	6.9
Greenville	45.4	6.9
West Napa	47.3	6.5

5.2 Historical Earthquakes and Ground Shaking

The Sacramento region of Northern California has a history of relatively low seismicity in comparison with more active seismic regions such as the Bay Area or Southern California. The two most commonly referred to earthquakes that resulted in some reported building damage in Downtown Sacramento are the Winters and Vacaville events in 1892. There are no reported occurrences of seismic-related ground failure in the Sacramento region due to earthquakes.

We used the USGS computer program *2008 Interactive Deaggregations* to estimate the peak ground acceleration (PGA) and modal (most probable) magnitude associated with the Maximum Considered Earthquake (MCE) with a 2,475-year return period. The USGS estimated PGA is 0.33g, and the modal magnitude is 6.6 M_w.

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site. The site could be subjected to ground shaking in the event of an earthquake along the faults mentioned above or other area faults.

5.3 Liquefaction

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with earthquakes. Primary factors that trigger liquefaction are: strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. In addition, we are not aware of any reported historical instances of liquefaction in the greater Sacramento area. Based on the subsurface conditions encountered at the site, including hard cohesive soils, and the anticipated seismic and groundwater conditions, liquefaction potential is expected to be low during seismic events.

5.4 Expansive Soil

Laboratory PI and EI testing (Appendix B) indicates low to moderate plasticity and corresponding low to moderate shrink/swell (expansion) potential. However, based on conditions observed in our borings, the distribution of moderately expansive soil appears to be limited. Therefore, we expect the overall expansion potential of the soil at the site to be relatively low. Mitigation and/or special design considerations with respect to expansive soil is not considered necessary for the project.

5.5 Soil Corrosion Screening

We performed a soil corrosion potential screening by conducting laboratory testing on a representative near-surface soil sample. The laboratory test results and published screening levels are presented in

Appendix B. Geocon does not practice corrosion engineering. Our conclusions are based on general screening criteria. Corrosion-sensitive buried metallic improvements (uncoated cast iron, steel, ductile iron, etc.) should be constructed in accordance with local requirements with regard to corrosion prevention measures.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 No soil or geologic conditions were encountered during our investigation that would preclude construction of improvements at the site as planned, provided the recommendations contained in this report are incorporated into the design and construction of the project.

6.1.2 The primary geotechnical constraints identified in our investigation are:

- **Existing Structures and Utilities:** Existing buildings, appurtenances, and underground utilities (including an extensive network of buried irrigation lines) are present throughout the site. Complete removal of these features will be required as part of site re-development.
- **Undocumented Fill / Backfill:** 1 to 2 feet of undocumented fill was encountered in Borings B3 and B6 and 8½ to 18 feet of backfill was encountered in the former UST locations. Since we do not know the compaction and placement history of the fill, removal and re-compaction will be required during site grading.
- **Septic Pit / Other Excavations**: The open septic pit noted in the Phase I ESA appears to be located within the building footprint of the proposed Lot 2 structure and will require backfilling with engineered fill. Given the past site use, it is possible that other excavations/depressions are present at the site. If encountered, these features should also be backfilled with engineered fill.

6.1.3 Conclusions and recommendations provided in this report are based on our review of referenced literature, analysis of data obtained from our exploratory field exploration, laboratory testing program, and our understanding of the proposed development at this time.

6.1.4 We should review the project plans as they develop further, provide engineering consultation as needed during final design, and perform geotechnical observation and testing services during construction.

6.2 Seismic Design Criteria

6.2.1 Seismic design of the structure should be performed in accordance with the provisions of the 2013 California Building Code (CBC) which is based on the 2012 International Building Code (IBC) and the ASCE publication: *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-10).

6.2.2 We used the USGS web application *US Seismic Design Maps* (http://geohazards.usgs.gov/designmaps/us/application.php) to evaluate site-specific seismic design parameters in accordance with the 2013 CBC/ASCE 7-10. Results are summarized in Table 6.2.2. The values presented are for the risk-targeted maximum considered earthquake (MCE_R).

TABLE 6.2.2
2013 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2013 CBC / ASCE 7-10 Reference
Site Class	D	Section 1613.3.2/ Table 20.3-1
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	0.697g	Figure 1613.3.1(1) / Figure 22-1
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.298g	Figure 1613.3.1(2) / Figure 22-2
Site Coefficient, F_A	1.243	Table 1613.3.3(1) / Table 11.4-1
Site Coefficient, F_V	1.804	Table 1613.3.3(2) / Table 11.4-2
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	0.866g	Eq. 16-37 / Eq. 11.4-1
Site Class Modified MCE_R Spectral Response Acceleration (1 sec), S_{M1}	0.538g	Eq. 16-38 / Eq. 11.4-2
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.577g	Eq. 16-39 / Eq. 11.4-3
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.359g	Eq. 16-40 / Eq. 11.4-4

6.2.3 Table 6.2.3 presents additional seismic design parameters for projects with Seismic Design Categories of D through F in accordance with ASCE 7-10 for the mapped maximum considered geometric mean (MCE_G).

TABLE 6.2.3
2013 CBC SITE ACCELERATION DESIGN PARAMETERS

Parameter	Value	ASCE 7-10 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.237g	Figure 22-7
Site Coefficient, F_{PGA}	1.325	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.315g	Section 11.8.3 (Eq. 11.8-1)

6.2.4 Conformance to the criteria presented in Tables 6.2.2 and 6.2.3 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid structural damage, since such design may be economically prohibitive.

6.3 Soil and Excavation Characteristics

6.3.1 Grading and excavations at the site may be accomplished with standard effort using heavy-duty grading/excavation equipment. We do not anticipate project excavations to generate oversized rock material (greater than 6 inches in dimension) or boulders, although debris associated with the existing improvements (such as brick, wood, and concrete chunks) is likely.

6.3.2 Temporary excavation slopes must meet Cal-OSHA requirements as appropriate. We anticipate that the majority of excavations in undisturbed alluvial soils will be classified as Cal-OSHA "Type A" soil and "Type B" soil. If active seepage or sandy soil, or previously disturbed soil (e.g. fill) are encountered, the Cal-OSHA classification should be downgraded to "Type C." Excavation sloping, benching, the use of trench shields, and the placement of trench spoils should conform to the latest applicable Cal-OSHA standards. The contractor should have a Cal-OSHA-approved "competent person" onsite during excavation to evaluate trench conditions and to make appropriate recommendations where necessary. It is the contractor's responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements.

6.3.3 The excavation support recommendations provided by Cal-OSHA are generally geared towards protecting human life and not necessarily towards preventing damage to nearby structures or surface improvements. The contractor should be responsible for using the proper active shoring systems or sloping to prevent damage to any structure or improvements near underground excavations.

6.3.4 Permanent cut and fill slopes should be constructed no steeper than 2H:1V (horizontal to vertical). To mitigate potential erosion, slopes should be vegetated as soon as possible and surface drainage should be directed away from the tops of slopes.

6.3.5 If grading occurs during or after the wet season (typically winter and spring), or in periods of precipitation, in-place and excavated soils will likely be wet. Earthwork contractors should be aware of moisture sensitivity of clayey and fine-grained soils and potential compaction/workability difficulties.

6.3.6 Earthwork and pad preparation operations in these conditions will likely be difficult with low productivity. Often, a period of at least one month of warm and dry weather is necessary to allow the site to dry sufficiently so that heavy grading equipment can operate effectively. Conversely, during dry summer and fall months, dry clay soils may require additional grading effort (discing, mixing, or other means) to attain proper moisture conditioning.

6.3.7 Based on laboratory testing, in-situ moisture content of site soils are generally higher than optimum moisture content. In addition, soil below existing pavements is often wet, regardless of the time of year. Due to the fine-grained nature of the soils and measured in-situ moisture contents above optimum, additional drying effort to attain moisture contents suitable for compaction should be anticipated regardless of the time of year. Mitigation alternatives may include aerating/drying the exposed soils (assuming favorable weather conditions), overexcavating 12 to 18 inches and placing geotextile fabric/geogrid covered with aggregate, or chemical treatment (e.g. lime treatment). We can provide specific recommendations during construction based on conditions encountered.

6.4 Materials for Fill

6.4.1 Excavated soils generated from cut operations at the site are suitable for use as fill in structural areas provided they do not contain deleterious matter, organic material, or cementations larger than 3 inches in maximum dimension. Due to the potential presence of organics and debris within the existing undocumented fill and near-surface soil at some locations, some screening and picking will likely be necessary to remove these deleterious materials prior to reuse as engineered fill. In addition, due to high in-situ moisture content, onsite soils reused as engineered fill will likely require aerating/drying to attain suitable moisture content for compaction.

6.4.2 Import fill material should be primarily granular with a "very low" expansion potential (Expansion Index less than 20), a Plasticity Index less than 15, be free of organic material and construction debris, and not contain rock/cementations larger than 6 inches in greatest dimension. Import soil should also contain a sufficient amount of fines (generally more than 10%) to provide "binder" and reduce potential caving when excavated.

6.4.3 Environmental characteristics and corrosion potential of import soil materials should also be considered. Proposed import materials should be sampled, tested, and approved by Geocon prior to its transportation to the site.

6.5 Grading

6.5.1 Earthwork operations should be observed and fills tested for recommended compaction and moisture content by a representative of Geocon.

6.5.2 References to relative compaction and optimum moisture content in this report are based on the American Society for Testing and Materials (ASTM) D1557-02 Test Procedure. Structural building pad areas should extend a minimum of 5 feet horizontally beyond the outside dimensions of buildings, including footings.

6.5.3 Prior to commencing grading, a pre-construction conference with representatives of the client, grading contractor, and Geocon should be held at the site. Site preparation, soil handling and/or the grading plans should be discussed at the pre-construction conference.

6.5.4 Site preparation should begin with removal of existing pavement, gravel surfacing, surface/subsurface structures, underground utilities, debris, and existing fill. Existing pipelines and overlying trench backfill should be completely removed to expose undisturbed soil. The existing septic pit and any leachfields, cisterns, and wells should be completely removed/abandoned in accordance with Sacramento County Environmental Management Division requirements. Excavations or depressions resulting from site clearing operations, or other existing excavations or depressions, should be restored with engineered fill in accordance with the recommendations of this report.

6.5.5 Surface vegetation consisting of grasses and other similar vegetation should be removed by stripping to a sufficient depth to remove roots and organic-rich topsoil. We estimate required stripping depths will range from approximately 1 to 2 inches. The actual stripping depth should be determined based on site conditions prior to grading. Material generated during stripping is not suitable for use within 5 feet of structural building pads or engineered fill areas.

6.5.6 Existing foundations and slabs from former buildings should be completely removed. After removal, former building areas should be over-excavated to at least the depths of the deepest former footings/interior utilities to expose undisturbed native soils.

6.5.7 An extensive network of underground irrigation piping is located within the northwestern portion of the site, primarily within the proposed Raley's building footprint. We assume that this piping is relatively shallow. In order to effectively remove the piping and overlying backfill and to provide uniform support of the proposed building, we recommend over-excavating the Raley's building pad to at least the depth of the irrigation piping (assumed to 2 feet or less) to expose undisturbed, firm native soil. This over-excavation will also aid in identifying additional undocumented fill or other features that will require removal.

6.5.8 If existing fill and/or existing underground utilities are not present within proposed building areas (Lots 2, 3, and 4), over-excavation is not necessary. We recommend potholing the site during demolition to better identify the potential presence of existing fill and/or underground

6.5.9 Undocumented fill within the former UST excavations located in the proposed parking areas should be removed to a minimum depth of 2 feet below pavement subgrade elevation and replaced with engineered fill. Loose, wet, or otherwise unsuitable soil should be removed

from the bottom and sides of the existing septic pit to expose firm native soil. The pit sidewalls should be excavated back to 3H:1V or flatter prior to backfilling. The septic pit should then be filled with engineered fill placed and compacted in accordance with this report.

6.5.10 Over-excavated soil may be used as engineered fill provided it is screened/processed to be relatively free of organic matter (less than 3 percent) or other deleterious material and does not contain rock or cementations larger than 3 inches in maximum dimension.

6.5.11 The bottom of over-excavations, and areas to receive fill or other improvements, should be scarified at least 12 inches, uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction. Scarification and re-compaction operations should be performed in the presence of our representative to evaluate the performance of subgrade under compactive load and to identify any loose or unstable soil conditions that could require additional excavation.

6.5.12 Engineered fill should be compacted in horizontal lifts not exceeding 8 inches (loose thickness) and brought to final subgrade elevations. Each lift should be moisture-conditioned at or above optimum and compacted to at least 90% relative compaction.

6.5.13 The top 12 inches of building pads and final flatwork subgrade areas, whether completed at-grade, by excavation, or by filling, should be uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction.

6.5.14 The top 6 inches of final vehicular pavement subgrade, whether completed at-grade, by excavation, or by filling, should be uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 95% relative compaction. Final pavement subgrade should be finished to a smooth, unyielding surface. We further recommend proof-rolling the subgrade with a loaded water truck (or similar equipment with high contact pressure) to verify the stability of the subgrade prior to placing AB. The subgrade minimum moisture content should be verified by testing within 24 hours prior to the placement of AB.

6.5.15 Pipe bedding, shading, and trench backfill should conform to the requirements of the appropriate utility authority. Material excavated from trenches should be adequate for use as general backfill above shading provided it does not contain deleterious matter, vegetation, or cementations larger than 6 inches in maximum dimension. Trench backfill should be placed in loose lifts not exceeding 8 inches, moisture-conditioned at or above optimum and compacted to at least 90% relative compaction. Compaction should be performed by mechanical means only; jetting of trench backfill is not recommended.

6.6 Foundations

6.6.1 Provided the building pads are graded in accordance with the recommendations of this report, the new buildings may be supported on conventional shallow foundations bearing on undisturbed native soil or engineered fill.

6.6.2 To reduce potential for moisture variations beneath buildings, foundations should consist of continuous perimeter strip footings with interior spread footings. Perimeter strip footings should be continuous around the entire perimeter of the structure without breaks or discontinuities.

6.6.3 Continuous perimeter strip footings and interior spread footings should be embedded at least 18 inches below pad grade. Strip footings should be at least 12 inches wide and spread footings should be at least 18 inches square. Underground utilities running parallel to footings should not be constructed in the zone of influence of footings. The zone of influence may be taken to be the area beneath the footing and within a 1:1 plane extending out and down from the bottom of the footing.

6.6.4 Continuous footings should be reinforced with at least four No. 4 reinforcement bars, two each placed near the top and bottom of the footing to allow footings to span isolated soil irregularities. The reinforcement recommended here is for soil characteristics only and is not intended to replace reinforcement required for structural considerations. The project structural engineer should evaluate the need for additional reinforcement.

6.6.5 Shallow foundations for the apartment building may be designed for an allowable bearing capacity of 3,000 pounds per square foot (psf) for dead plus live load conditions with a one-third increase for short-term transient loading such as wind and seismic.

6.6.6 Allowable passive pressure used to resist lateral movement of the footings may be assumed to be equal to a fluid weighing 350 pounds per cubic foot (pcf). The coefficient of friction to resist sliding is 0.35 for concrete against soil. Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

6.6.7 Foundations designed in accordance with the recommendations above should experience total post-construction settlement due to building loads of less than one inch and differential settlement of ½ inch or less over a distance of 50 feet. The majority of settlement will be immediate and occur as the building is constructed.

6.6.8 A Geocon representative should observe foundation excavations prior to placing reinforcing steel or concrete to observe that the exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

6.7 Interior Slabs-on-Grade

6.7.1 Conventional interior concrete slabs-on-grade are suitable for the building pads prepared as recommended in this report. Slab thickness and reinforcement should be determined by the structural engineer based on anticipated loading. However, at a minimum, slabs should be at least 4 inches thick and reinforced with No. 3 reinforcing bars placed 24 inches on center, each way. Structural requirements may require additional reinforcement or thicker concrete slabs.

6.7.2 If the near-surface soils of building pads become dry prior to constructing concrete slabs-on-grade, building pads should be re-moistened by soaking or sprinkling such that the upper 12 inches of soil is above optimum moisture content at least 48 hours before concrete placement.

6.8 Slab-on-Grade Moisture Protection Considerations

6.8.1 Migration of moisture through concrete slabs or moisture otherwise released from slabs is not a geotechnical issue. However, for the convenience of the owner and design team, we are providing the following general suggestions for consideration by the owner, architect, structural engineer, and contractor. The suggested procedures may reduce the potential for moisture-related floor covering failures on concrete slabs-on-grade, but moisture problems may still occur even if the procedures are followed. If more detailed recommendations are desired, we recommend consulting a specialist in this field.

6.8.2 In areas where floor coverings are planned, a minimum 10-mil-thick vapor barrier meeting ASTM E1745-97 Class C requirements may be placed directly below the slab, without a sand cushion provided the water-cement ratio of the concrete is 0.45 or less. To reduce the potential for punctures, a higher quality vapor barrier (15 mil, Class A or B) may be used. The vapor barrier, if used, should extend to the edges of the slab, and should be sealed at all seams and penetrations.

6.8.3 At least 4 inches of ½-or-¾ inch crushed rock, with no more than 5 percent passing the No. 200 sieve may be placed below the vapor barrier to serve as a capillary break.

6.8.4 The concrete water/cement ratio should be as low as possible. The water/cement ratio should not exceed 0.45 for concrete placed directly on the vapor barrier. This is critically important to reduce the potential for differential curing and subsequent excessive shrinkage cracking. Midrange plasticizers could be used to facilitate concrete placement and workability.

6.8.5 Proper finishing, curing, and moisture vapor emission testing should be performed in accordance with the latest guidelines provided by the American Concrete Institute, Portland Cement Association, and ASTM.

6.9 Retaining Walls and Lateral Loads

6.9.1 Retaining walls and buried structures may be designed using the lateral earth pressures (equivalent fluid pressure) summarized in Table 6.9.1.

TABLE 6.9.1
RECOMMENDED LATERAL EARTH PRESSURES

Condition	Equivalent Fluid Density (Drained Backfill Conditions)
Active	40 pcf
At-Rest	60 pcf
Passive	350 pcf
Seismic Earth Pressure[1]	10 pcf

1. *Applicable for walls that support more than 6 feet of backfill in accordance with Section 1803.5.12 of the 2013 CBC. Conventional triangular distribution. Should be combined with ACTIVE lateral earth pressure for seismic case analysis.*

6.9.2 Unrestrained walls should be designed using the active case. Unrestrained walls are those that are allowed to rotate more than 0.001H (where H is the height of the wall). Walls restrained from movement (such as basement walls) should be designed using the at-rest case. The soil pressures above assume that the backfill material within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall will be composed of the existing onsite soils.

6.9.3 Retaining wall foundations with a minimum depth 18 inches may be designed using an allowable bearing capacity of 3,000 psf. To resist lateral movement of retaining wall foundations, an allowable passive earth pressure equivalent to a fluid density of 350 pcf for footings or shear keys poured neat against properly compacted engineered fill soils or undisturbed natural soils. This allowable passive pressure is based on the assumption that a horizontal surface extends at least 5 feet or three times the depth of the footing or shear key, whichever is greater, beyond the face of the retaining wall foundation. If this surface is not protected by floor slabs or pavement, the upper 12 inches of material should not be included in the design for lateral resistance. An allowable friction coefficient of 0.35 may be used for resistance to sliding between soil and concrete. Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

6.9.4 Retaining walls greater than 2 feet tall (retained height) should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and should be waterproofed as required by the project architect. Positive drainage for retaining walls should consist of a vertical layer of permeable material positioned between the retaining wall and the soil backfill. The permeable material may be composed of a composite drainage geosynthetic or a natural permeable material such as crushed gravel at least 12 inches thick and capped with at least 12 inches of native soil. A geosynthetic filter fabric should be placed between the gravel and the

soil backfill. Provisions for removal of collected water should be provided for either system by installing a perforated drainage pipe along the bottom of the permeable material, which leads to suitable drainage facilities.

6.10 Concrete Sidewalks and Flatwork

6.10.1 Sidewalk, curb, and gutter within City right-of-way should be designed and constructed in accordance with the latest City of Sacramento standards and details as applicable. We note that the City of Sacramento requires 12 inches of compacted Class 2 AB below sidewalks for soil with an R-Value less than 14.

6.10.2 Onsite exterior concrete flatwork will likely experience post-construction seasonal movement. Therefore, some cracking and/or vertical offset should be anticipated. We are providing the following recommendations to reduce distress to concrete flatwork. Recommendations include moisture conditioning subgrade soils, using aggregate underlayment, and providing adequate construction and control joints. It should be noted that even with implementation of these measures, slab movement or cracking could still occur.

- Concrete flatwork and sidewalks should be at least 4 inches thick and underlain by at least 4 inches of Class 2 AB compacted to at least 95% relative compaction. In addition, doweling could be provided at joints to reduce the potential for vertical offset.
- The upper 12 inches of subgrade soil for exterior flatwork and sidewalks should be uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction prior to placing AB.
- We recommend using construction and control joints in accordance with ACI and/or PCA guidelines. Construction joints that abut building foundations should include a felt strip, or approved equivalent, that extends the full depth of the exterior slab. Exterior slabs should be structurally independent of building foundations except at doorways, where vertical movement could impact doorway operation.

6.11 Pavement – Hot Mix Asphalt

6.11.1 We performed Resistance-Value testing on a representative bulk soil sample from boring B6 (proposed at-grade parking area). Our testing resulted in an R-Value of 14 (Appendix B).

6.11.2 We recommend the following alternative hot mix asphalt (HMA) pavement sections for design. The project civil engineer should determine the appropriate Traffic Index (TI) based on anticipated traffic conditions. Table 6.11 provides alternative pavement sections based on various design TIs. We can provide additional sections based on other TIs if necessary.

TABLE 6.11
FLEXIBLE PAVEMENT SECTIONS

	Traffic Index (20-year service life)					
	4.5	5.0	5.5	6.0	6.5	7.0
HMA, inches	3.0	3.0	3.0	3.5	4.0	4.0
AB, inches	6.5	8.5	10.0	11.0	11.5	13.5
Total Section Thickness, inches	9.5	11.5	13.0	14.5	15.5	17.5

6.11.3 The recommended alternative pavement sections are based on the following assumptions:

1. Pavement subgrade soil has an R-Value of at least 14.
2. Class 2 AB has a minimum R-Value of 78 and meets the requirements of Section 26 of Caltrans' *Standard Specifications*.
3. Class 2 AB and the top 12 inches of subgrade are compacted to 95% or higher relative compaction at or near optimum moisture content.

6.11.4 To reduce the potential for water from landscaped areas migrating under pavement into the AB, consideration should be given to using full-depth curbs in areas where pavement abuts irrigated landscaping. The full-depth curbs should extend at least 6 inches or more into the soil subgrade beneath the AB. Alternatively, modified drop-inlets that contain weep-holes may be used to encourage accumulated water to drain from beneath the pavement.

6.11.5 Asphalt pavement section recommendations for driveways and parking areas are based on the design procedures of Caltrans' *Highway Design Manual* (Design Manual), Chapter 600, updated December 20, 2004. It should be noted that most rational pavement design procedures are based on projected street or highway traffic conditions and, hence, may not be representative of vehicular loading that occurs in parking lots and driveways. Pavement proximity to landscape irrigation, reduced traffic speed and short turning radii increase the potential for pavement distress to occur in parking lots even though the volume of traffic is significantly less than that of an adjacent street. The Design Manual indicates that the resulting pavement sections for parking lots are "minimized to keep initial costs down but are reasonable because additional AC surfacing can be added later, if needed, and generally without incurring traffic hazards or traffic handling problems." It is generally not economically feasible to design and construct the entire parking lot and driveways for the unique loading conditions previously described. Periodic maintenance of the pavement in these areas, therefore, should be anticipated.

6.12 Rigid Concrete Pavement

6.12.1 If rigid PCC pavement is used in automobile and truck traffic areas, we recommend that the concrete be at least 6 inches thick. PCC pavement should be underlain by at least 10 inches of Class 2 AB meeting the requirements of Section 26 of Caltrans' *Standard Specifications*

and compacted to at least 95% relative compaction. Subgrade soils should be prepared and compacted in accordance with the recommendations of this report.

6.12.2 PCC should have a minimum 28-day compressive strength of 3,500 psi. Adequate construction and crack control joints should be used to control cracking inherent in concrete construction. It would be advantageous to provide minimal reinforcement, such as No. 3 steel bars placed 18 inches on center in both horizontal directions to help control cracking.

6.13 Drainage

6.13.1 Proper site drainage is critical to reduce the potential for differential soil movement, soil expansion, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to building foundations. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with the 2010 CBC or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices.

6.13.2 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

6.13.3 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend that area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes be used. In addition, where landscaping is planned adjacent to the pavement, we recommend construction of a cutoff wall (deepened concrete curb, plastic root barrier, or similar cutoff) along the edge of the pavement that extends at least 4 inches into the soil subgrade below the bottom of the base material.

6.13.4 We recommend that roof drains be connected to water-tight drainage piping connected to the storm drain system. However, we understand that Leadership in Engineering and Environmental Design (LEED) requests disconnecting the roof drains to help obtain certification. At a minimum, the water from the roof drains should be directed away from buildings. Consideration should be given to draining roofs to lined planter boxes or placing liners below the proposed landscape areas to prevent infiltration of the water. Geocon can be contacted for additional recommendations.

6.13.5 Experience has shown that even with these provisions, subsurface seepage may develop in areas where no such water conditions existed prior to site development. This is particularly true where a substantial increase in surface water infiltration has resulted from an increase in landscape irrigation.

7.0 FURTHER GEOTECHNICAL SERVICES

7.1 Plan and Specification Review

7.1.1 Geocon should review the foundation and grading plans prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

7.2 Testing and Observation Services

7.2.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for other's interpretation of our recommendations.

8.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous materials was not part of the scope of services provided by Geocon.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The recommendations contained in this report are preliminary until verified during construction by representatives of our firm. Changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. Additionally, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated partially or wholly by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the area at this time. No warranty is provided, either express or implied.

9.0 REFERENCES

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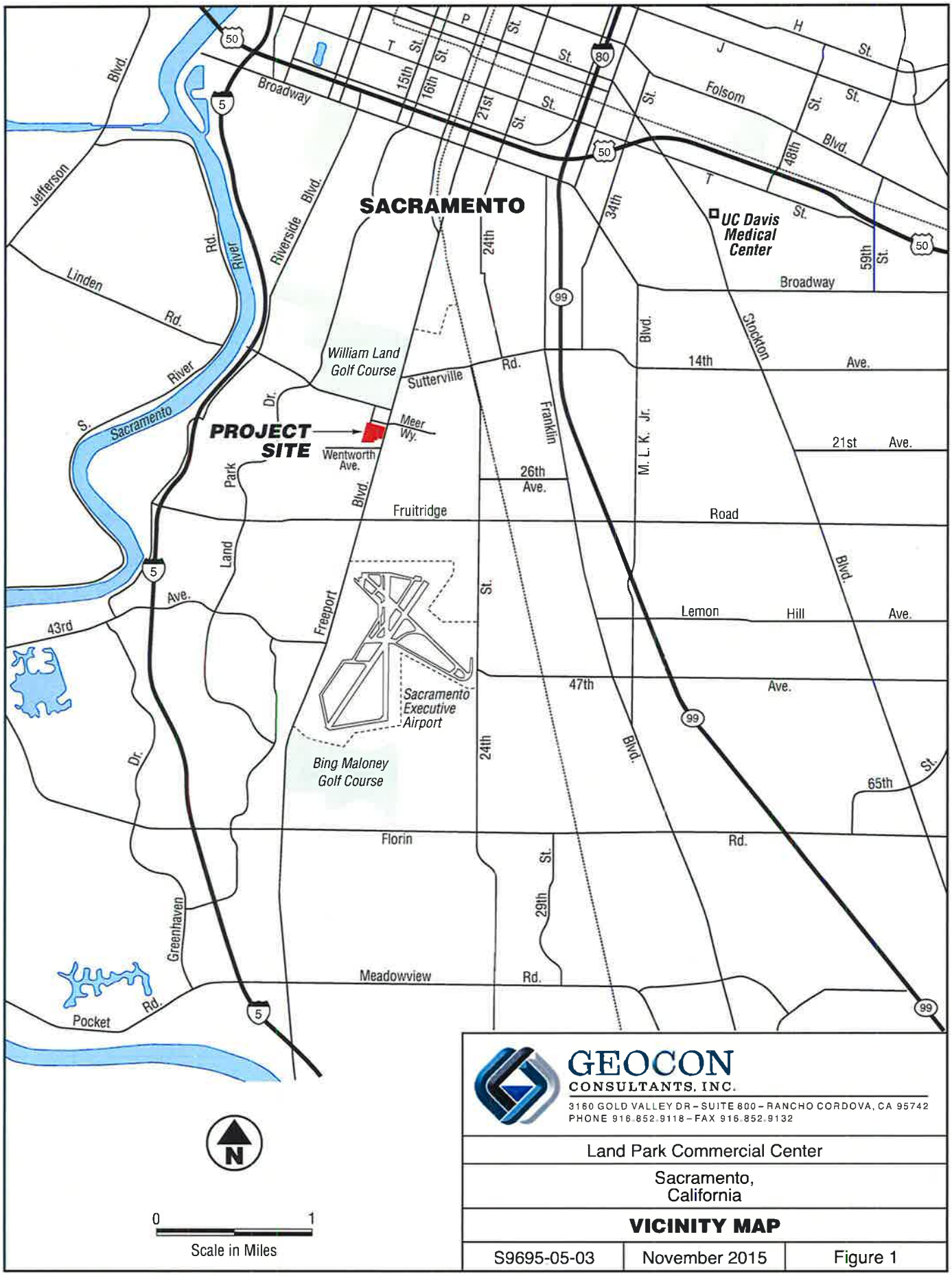

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Land Park Commercial Center

Sacramento, California

VICINITY MAP

S9695-05-03	November 2015	Figure 1

LEGEND:

B9 ⊗ Approximate Exploratory Boring Location (Geocon 2015)

B16 ◎ Approximate Previous Boring Location (Geocn 2012)

0 100
Scale in Feet

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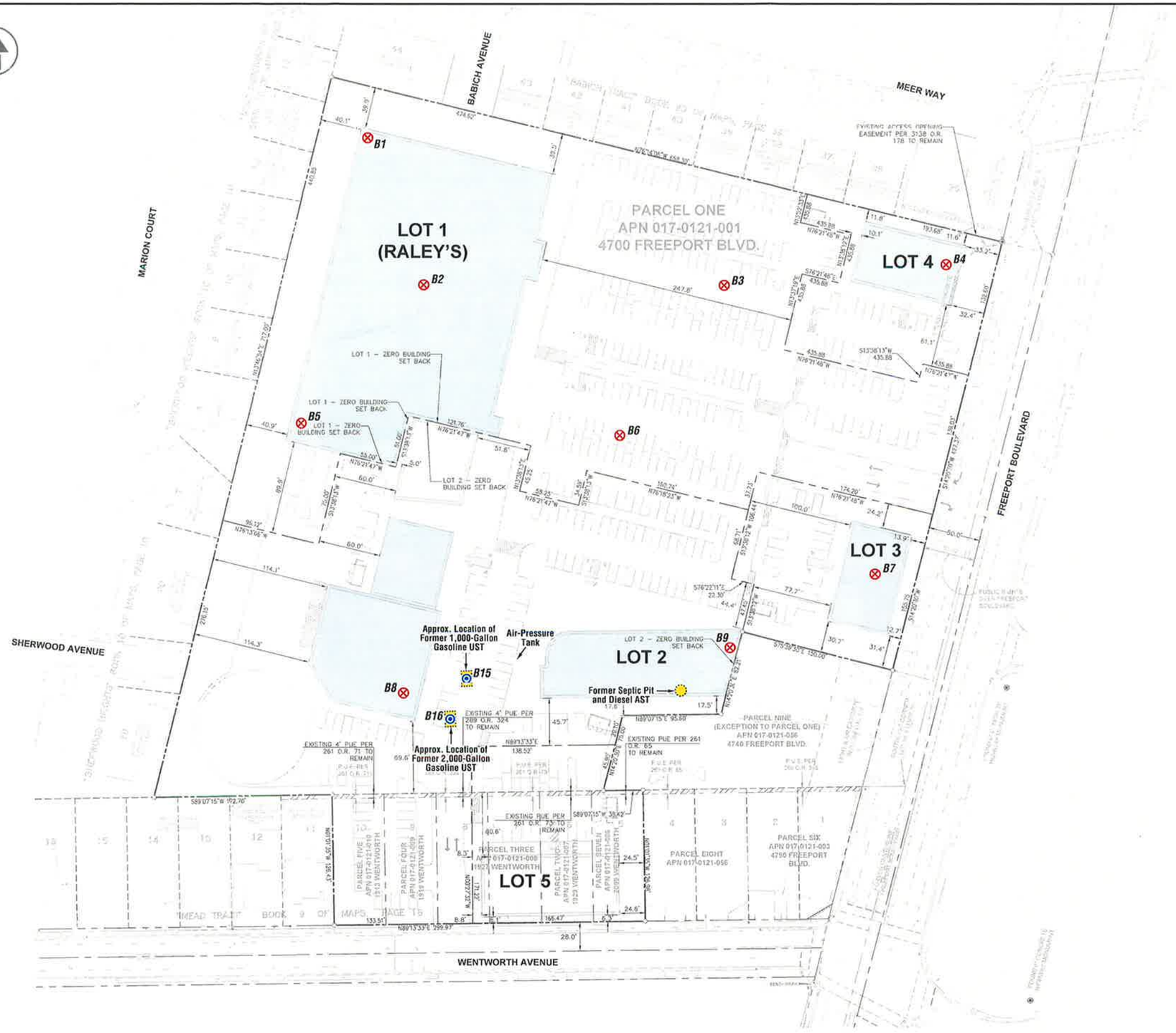
SITE PLAN

S9695-05-03	November 2015	Figure 2



LEGEND:

B9 ⊗ Approximate Exploratory Boring Location (Geocon 2015)

B16 ⊙ Approximate Previous Boring Location (Geocn 2012)

0 100

Scale in Feet

Site Plan Ref: Cunningham Engineering, Nov. 2014

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PROPOSED DEVELOPMENT PLAN

S9695-05-03	November 2015	Figure 3

APPENDIX A

APPENDIX A

FIELD EXPLORATION

Our geotechnical field exploration program was performed on October 22, 2015, and consisted of drilling nine exploratory borings (B1 through B9) at the approximate locations shown on the Site Plan, Figure 2 and Proposed Development Plan, Figure 3.

Exploratory borings were performed using a truck-mounted CME 75 drill rig equipped with 8-inch outside-diameter (OD) hollow-stem augers and 6-inch OD solid-flight augers. Sampling was accomplished using a 140-pound automatic hammer with a 30-inch drop. We obtained samples using either a 3-inch OD split-spoon (California Modified) sampler or a 2½-inch OD split-spoon (SPT) sampler. The number of blows required to drive the sampler the last 12 inches (or fraction thereof) of the 18-inch sampling interval were recorded on the boring logs. Upon completion, the borings were backfilled with native soil cuttings and capped with colored concrete to match existing surface conditions.

Subsurface conditions encountered in the exploratory borings were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488-90). This system uses the Unified Soil Classification System (USCS) for soil designations. The logs depict soil and geologic conditions encountered and depths at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, drill rig penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing. A Key to Logs is presented as Figure A1. Logs of the exploratory borings are presented herein as Figures A2 through A11.

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	S<25	DRY
SLIGHT INDICATION OF MOISTURE	25≤S<50	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	50≤S<75	MOIST
MINOR VISIBLE FREE WATER	75≤S<100	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 ⅝-INCH TO 1 FOOT	MODERATELY BEDDED
1 ⅛-INCH TO 3 ⅝-INCH	THINLY BEDDED
⅝-INCH TO 1 ⅛-INCH	VERY THINLY BEDDED
LESS THAN ⅝-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST ¼-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN ¼-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
¼-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

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KEY TO LOGS Figure A1

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B1

ELEV. (MSL.) 16 feet DATE COMPLETED 10/22/2015

ENG./GEO. Richard Church DRILLER V&W Drilling

EQUIPMENT CME-75 HT with 6-in HSA HAMMER TYPE Automatic

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**GRAVEL** 6 inches			
1				ML	**ALLUVIUM** Medium stiff, dry, brown, fine-grained Sandy SILT			
2								
3	B1-2.5 B1-3.0			CL	Hard, damp, brown, Lean CLAY with fine-grained sand - PP = 4.5 tsf	16	112.2	16.2
4								
5				CL	Hard, damp, olive brown, fine-grained Sandy lean CLAY - PP > 4.5 tsf			
6	B1-5.5 B1-6.0					40	118.9	13.4
7								
8								
9								
10	B1-10.0					32		
11								
12								
13								
14								
15	B1-15.0					43		
16					BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A2, Log of Boring, page 1 of 1

GEOCON

SAMPLE SYMBOLS: ☐ ... SAMPLING UNSUCCESSFUL; ▨ ... DISTURBED OR BAG SAMPLE; ◧ ... STANDARD PENETRATION TEST; ◪ ... CHUNK SAMPLE; ◫ ... DIRECT PUSH (UNDISTURBED); ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B2

ELEV. (MSL.) **17 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in HSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**GRAVEL** 3/4 inches			
1	B2-1.0			CL-ML	**ALLUVIUM** Very stiff, damp, brown, fine-grained sandy Silty CLAY - PP = 2.75 tsf	25	116.5	12.0
2								
3	B2-3.0							
	B2-3.5			CL	Very stiff, damp, brown, Lean CLAY with sand - PP = 4.0 tsf	17	112.6	16.0
4								
5				CL	Hard, damp, olive brown, Sandy lean CLAY - PP > 4.5 tsf			
	B2-5.5							
6	B2-6.0					31		
7								
8	B2-8.0							
	B2-8.5				- PP > 4.5 tsf	45	114.4	16.0
9								
10	B2-10.0				- trace gravel	38		
11								
12								
13								
14								
15	B2-15.0			CL	Hard, dry to damp, light brown, Silty CLAY	32		
16								
17								
					- hard drilling			
18								
19								

Figure A3, Log of Boring, page 1 of 2

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◹ ... CHUNK SAMPLE
- ◫ ... DIRECT PUSH (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B2

ELEV. (MSL.) **17 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in HSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
20	B2-20.0				Hard, dry to damp, light brown, Silty CLAY	39		
21								
22								
23								
24			▼					
25	B2-25.0				- becomes very stiff, moist, olive brown/rust	27		
26								
27								
28								
29								
30	B2-30.0					24		
31								
					BORING TERMINATED AT 31.5 FEET GROUNDWATER ENCOUNTERED AT 24.5 FEET BACKFILLED WITH CEMENT SLURRY			

Figure A4, Log of Boring, page 2 of 2

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◪ ... CHUNK SAMPLE
- ◫ ... DIRECT PUSH (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B3

ELEV. (MSL.) **17 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in HSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT (AC)** 3 inches			
					AGGREGATE (AB) 6 inches			
1	B3-Bulk			ML	**FILL** Stiff, damp, dark brown, SILT			
2								
				CL	**ALLUVIUM** Very stiff, damp to moist, dark brown, Lean CLAY			
3								
4								
5					BORING TERMINATED AT 5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A5, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◪ ... CHUNK SAMPLE
- ◫ ... DIRECT PUSH (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B4

ELEV. (MSL.) 17 feet | DATE COMPLETED 10/22/2015
ENG./GEO. Richard Church | DRILLER V&W Drilling
EQUIPMENT CME-75 HT with 6-in SSA | HAMMER TYPE Automatic

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0			**ASPHALT (AC)** 2.5 inches			
1		CL	**AGGREGATE (AB)** 4 inches **ALLUVIUM** Very stiff, damp, dark gray/brown, Lean CLAY, trace fine-grained sand - PP = 3.0 tsf			
2	B4-1.5 B4-2.0			12	110.5	18.8
3						
4	B4-4.0		Hard, damp, light brown, Lean CLAY, trace fine-grained sand	35		
5						
6						
7						
8						
9						
10	B4-10.0			39		
11						
12						
13						
14						
15	B4-15.0			63		
16			BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH CEMENT SLURRY			

Figure A6, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS: ☐ ... SAMPLING UNSUCCESSFUL; ◧ ... STANDARD PENETRATION TEST; ◫ ... DIRECT PUSH (UNDISTURBED); ▨ ... DISTURBED OR BAG SAMPLE; ◪ ... CHUNK SAMPLE; ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B5

ELEV. (MSL.) **18 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in SSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**GRAVEL** 6 inches			
1				ML	**ALLUVIUM** Stiff, dry, reddish brown, fine-grained Sandy SILT			
2	B5-1.5 B5-2.0					20		7.3
3								
4	B5-4.0						111.5	13.1
5	B5-4.5			CL	Hard, damp, reddish brown, fine-grained Sandy lean CLAY - PP = 4.5 tsf	29		
6								
7								
8								
9								
10	B5-10.0				Hard, dry to damp, light brown, Sandy lean CLAY	65		
11								
12								
13								
14								
15	B5-15.0					43		
16								
					BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A7, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ◫ ... DIRECT PUSH (UNDISTURBED)

▩ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B6

ELEV. (MSL.) 17 feet DATE COMPLETED 10/22/2015

ENG./GEO. Richard Church DRILLER V&W Drilling

EQUIPMENT CME-75 HT with 6-in HSA HAMMER TYPE Automatic

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT (AC)** 3 inches			
					AGGREGATE (AB) 6.5 inches			
1				ML	**FILL** Medium stiff, damp, dark brown, SILT			
2	B6-Bulk			CL	**ALLUVIUM** Very stiff, damp, dark brown, Lean CLAY			
3								
4								
5					BORING TERMINATED AT 5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A8, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS: ☐ ... SAMPLING UNSUCCESSFUL; ◧ ... STANDARD PENETRATION TEST; ▯ ... DIRECT PUSH (UNDISTURBED); ▨ ... DISTURBED OR BAG SAMPLE; ◪ ... CHUNK SAMPLE; ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B7

ELEV. (MSL.) **17 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in SSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0			**ASPHALT (AC)** 2 inches			
1		CL	**AGGREGATE (AB)** 4 inches **ALLUVIUM** Very stiff, damp, brown, Lean CLAY, trace fine-grained sand			
2	B7-1.5 B7-2.0		- PP = 3.25 tsf - PP = 4.0 tsf	24	106.8	19.7
3						
4						
5	B7-4.5			28		
6			Very stiff, damp, light brown, fine-grained Sandy lean CLAY			
7						
8						
9						
10	B7-10.0		- becomes hard	50/6"		
11						
12						
13						
14						
15	B7-15.0			51		
16						
			BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A9, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL.GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ◫ ... DIRECT PUSH (UNDISTURBED)

▩ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B8

ELEV. (MSL.) 19 feet DATE COMPLETED 10/22/2015

ENG./GEO. Richard Church DRILLER V&W Drilling

EQUIPMENT CME-75 HT with 6-in SSA HAMMER TYPE Automatic

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
1				ML	**GRAVEL** 3 inches **ALLUVIUM** Very stiff, moist, brown, fine-grained Sandy SILT - PP = 3.5 tsf			
2	B8-1.5 B8-2.0					15	113.8	11.8
3								
4				CL	Hard, damp, brown, fine-grained Sandy lean CLAY			
5								
6	B8-5.5 B8-6.0					74		
7								
8								
9								
10	B8-10.0				- becomes reddish brown	36		
11								
12								
13								
14								
15	B8-15.0				- becomes light brown	59		
16								
					BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A10, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ◫ ... DIRECT PUSH (UNDISTURBED)
- ▨ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9695-05-03** PROJECT NAME **Land Park Commercial Center**

BORING B9

ELEV. (MSL.) **17 feet** DATE COMPLETED **10/22/2015**

ENG./GEO. **Richard Church** DRILLER **V&W Drilling**

EQUIPMENT **CME-75 HT with 6-in HSA** HAMMER TYPE **Automatic**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0						
		ML	**GRAVEL** 3 inches			
1			**ALLUVIUM** Dark brown, SILT			
		CL	Very stiff, damp, brown, Lean CLAY with fine-grained sand			
2	B9-2.0					
	B9-2.5			10	102.9	15.6
3						
4						
5			- becomes hard			
	B9-5.5					
6	B9-6.0			79/11"	111.2	17.8
7						
8						
9						
10	B9-10.0		- becomes light brown	60		
11						
12						
13						
14						
15	B9-15.0			53		
16						
			BORING TERMINATED AT 16.5 FEET GROUNDWATER NOT ENCOUNTERED			

Figure A11, Log of Boring, page 1 of 1

IN PROGRESS S9695-05-03 LAND PARK COMMERCIAL .GPJ 11/17/15

GEOCON

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ▨ ... DISTURBED OR BAG SAMPLE
- ◧ ... STANDARD PENETRATION TEST
- ◹ ... CHUNK SAMPLE
- ◫ ... DIRECT PUSH (UNDISTURBED)
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(Previous Boring)

PROJECT NO. **S9695-06-02** PROJECT NAME

BORING NO. B15

DATE DRILLED 5/25/2012 WATER LEVEL (ATD) 4.0'

EQUIPMENT DIRECT-PUSH DRILLER GEOCON

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	SOIL (USCS)	HEADSPACE (PPM)
1				**2 INCHES GRAVEL**	SP	
				FILL Loose, moist, medium to dark yellowish brown (10YR 4/2), Gravelly SAND		
2				Medium dense, moist, dark yellowish brown (10YR 4/2), Silty coarse SAND	SP	
3						
4		B15-3.5 1140		▼ - wet		0.0
5						
6						
7						
8		B15-8.0 1150				0.0
9				**ALLUVIUM** Hard, moist, dark yellowish brown (10YR 4/2), CLAY	CL	
10				REFUSAL ON HARDPAN, BORING TERMINATED AT 10.5 FEET		

ENV_NO_WELL S9695-06-02 RALEYS BORINGS.GPJ 06/05/12

BORING ELEVATION:

ENGINEER/GEOLOGIST: **GEMMA REBLANDO**

GEOCON

(Previous Boring)

PROJECT NO. **S9695-06-02** PROJECT NAME

BORING NO. B16

DATE DRILLED 5/25/2012 WATER LEVEL (ATD) _____

EQUIPMENT DIRECT-PUSH DRILLER GEOCON

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	SOIL DESCRIPTION	SOIL (USCS)	HEADSPACE (PPM)
1				**FILL** Loose, dry to moist, dark yellowish brown (10YR 4/2), Gravelly SAND	SP	
2						
3						
4						
5				Dense, moist, dark yellowish brown (10YR 4/2), Gravelly SAND (SP)	SP	
6				- small amount of brick fragments and burnt wood		0.0
7		B16-7.5 1210				
8				Dense, moist, dark yellowish brown (10YR 4/2), Gravelly SAND with minor pebbles 1 inch in diameter, few pieces of brick fragments and burnt wood chips	SP	0.7
9						
10						
11						
12		B16-11.5 1215		- Gray (5Y 4/1), petroleum hydrocarbon odor		3.7
13		B16-13.0 1220		- Gray (5Y 4/1), gravelly sand, with petroleum hydrocarbon odor		5.9
14						
15		B16-15.0 1225				0.1
16		B16-15.5 1228		- minor staining (dark greenish gray [5GY 4/1]), with slight petroleum hydrocarbon odor		0.3
17						
18				REFUSAL ON HARD CLAY - BORING TERMINATED AT 18 FEET		

ENV_NO_WELL S9695-06-02 RALEYS BORINGS.GPJ 06/05/12

BORING ELEVATION:

ENGINEER/GEOLOGIST: **GEMMA REBLANDO**

GEOCON

APPENDIX B

APPENDIX B

LABORATORY TESTING PROGRAM

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. Selected soil samples were tested for their in-place dry density and moisture content, grain size distribution, plasticity characteristics, expansion potential, shear strength characteristics, corrosion parameters, and Resistance Value (R-Value). Laboratory test results are presented herein.

TABLE B1
SUMMARY OF CORROSION PARAMETERS
CALIFORNIA TEST METHOD S 643, 417, AND 422

Sample No.	Sample Depth (ft.)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
B1-2.5	2.5	6.8	2,500	60	70

*Caltrans considers a site corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples at the site:

- The pH is equal to or less than 5.5.
- The resistivity is equal to or less than 1,000 ohm-cm.
- Chloride concentration is equal to or greater than 500 parts per million (ppm).
- Sulfate concentration is equal to or greater than 2,000 ppm.

*According to the 2010 California Building Code Section 1904.5 which refers to American Concrete Institute (ACI) 318, Table 4.3.1, Type II cement may be used where sulfate levels are below 2,000 ppm.

TABLE B2
EXPANSION INDEX TEST RESULTS
ASTM D4829

Sample Number	Depth (inches)	Moisture Content (%)		Dry Density (pcf)		Expansion Index	Classification*
		Before Test	After Test	Before Test	After Test		
B6 Bulk	1.5-5	11.5	27.2	102.4	94.7	75	Medium

**Expansion Potential Classification per ASTM D4829.*

TABLE B3
R-VALUE TEST RESULTS
ASTM D2844

Composite Sample ID	Sample Description	R-Value
B3-1-Bulk	Silty CLAY (CL)	14

Sample ID	Depth (feet)	Liquid Limit	Plastic Limit	Plasticity Index	Expansion Index	%<#200 Sieve	Water Content (%)	Dry Density (pcf)
B1-3.0	3					70.6	16.2	112.2
B1-6.0	6						13.4	118.9
B2-1.0	1	21	15	6		60.4	12.0	116.5
B2-3.5	3.5					78.3	16.0	112.6
B2-8.5	8.5						16.0	114.4
B4-1.5	1.5					88.7	18.8	110.5
B4-4.0	4					92.1		
B5-1.5	1.5					58.8	7.3	
B5-4.0	4					66.1	13.1	111.5
B6-1.5	1.5				75			
B7-2.0	2					89.6	19.7	106.8
B8-2.0	2					62.6	11.8	113.8
B9-2.5	2.5					79.5	15.6	102.9
B9-6.0	6					76.2	17.8	111.2

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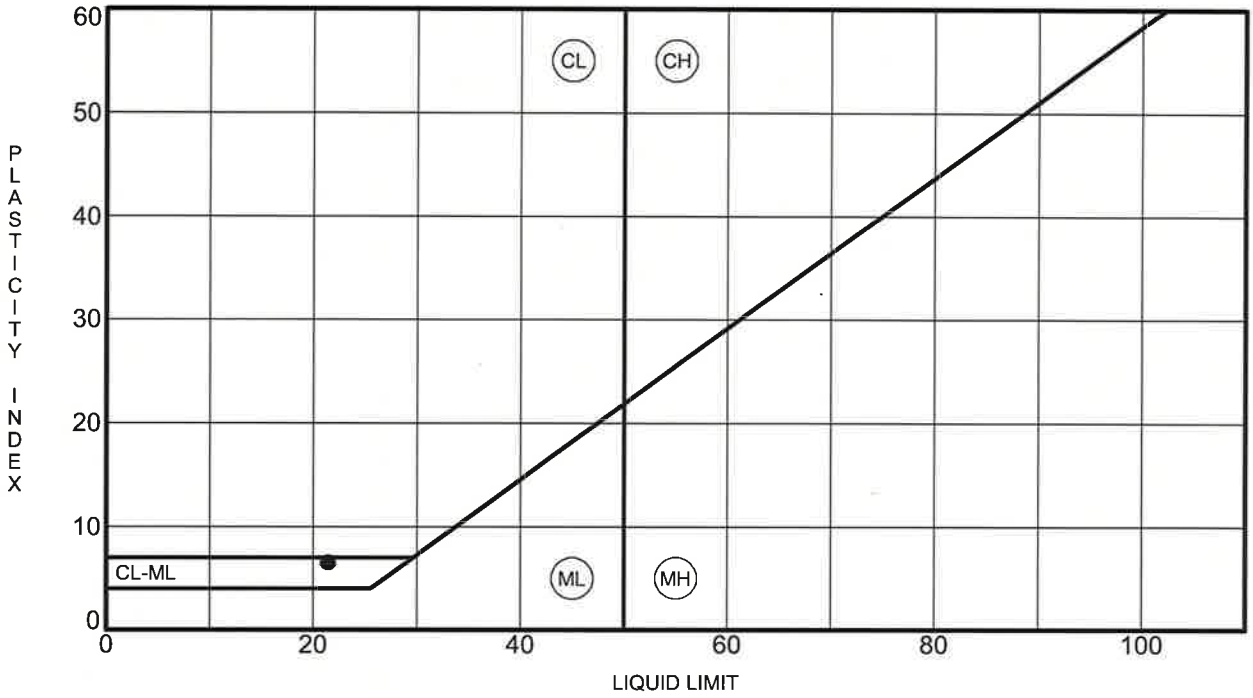
Summary of Laboratory Results

Project: Land Park Commercial Center
Location: Sacramento, CA
Number: S9695-05-03
Figure: B1



	Sample No.	Liquid Limit	Plastic Limit	Plasticity Index	% Pass #200 Sieve	Unified Soil Classification Description	Preparation Method
●	**B2-1.0**	**21**	**15**	**6**	**60.4**	**SANDY SILTY CLAY(CL-ML)**	**dry**

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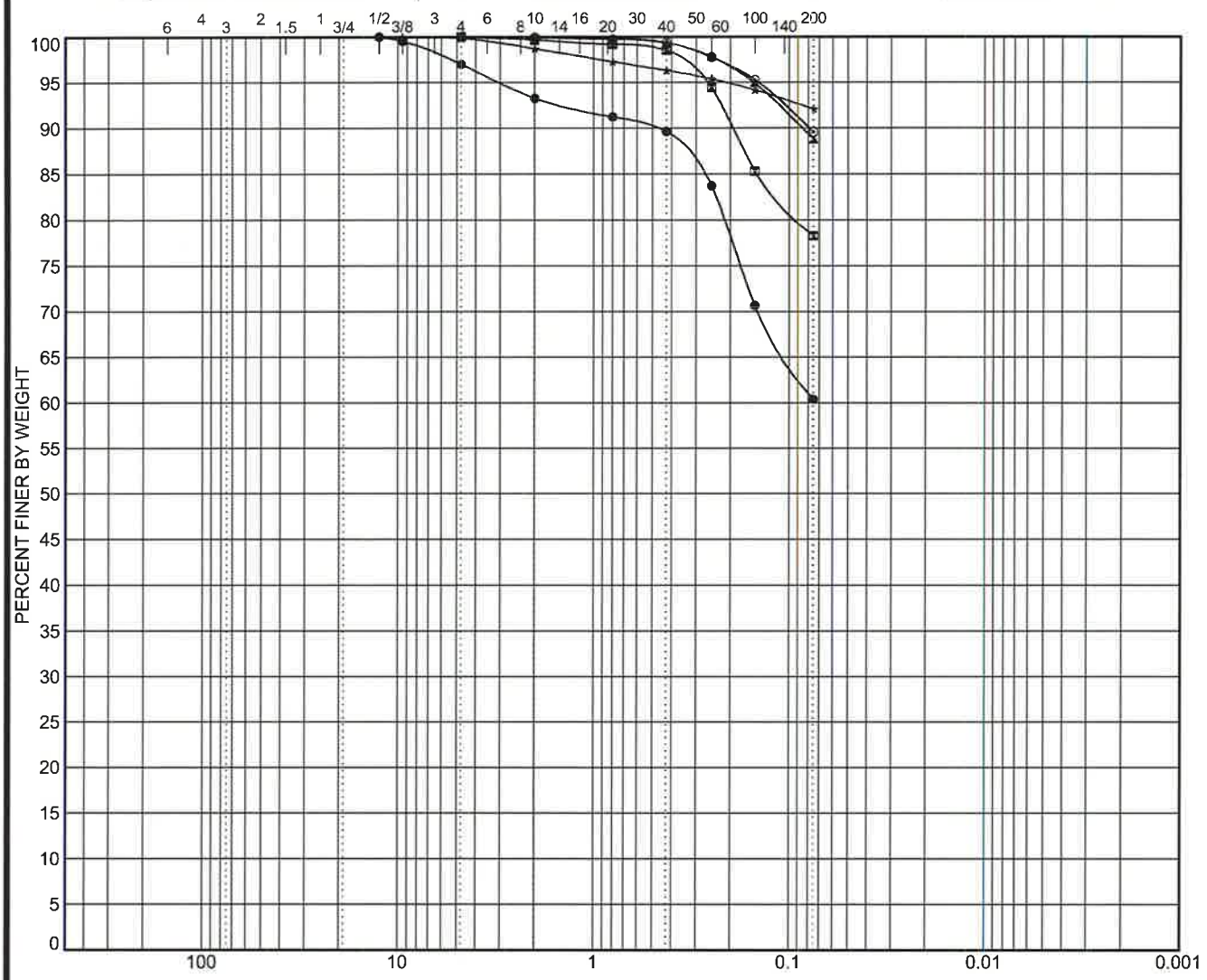
ATTERBERG LIMITS (ASTM D4318)

Project: Land Park Commercial Center
Location: Sacramento, CA
Number: S9695-05-03
Figure: B2



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample No.	Classification	LL	PL	PI	Cc	Cu
●	B2-1.0	Sandy Silty CLAY (CL-ML)	21	15	6		
⊠	B2-3.5	Lean CLAY with sand (CL)					
▲	B4-1.5	Lean CLAY (CL)					
★	B4-4.0	Lean CLAY (CL)					
⊙	B7-2.0	Lean CLAY (CL)					

	Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B2-1.0	12.5				3.0	36.6	60.4	
⊠	B2-3.5	4.75				0.0	21.7	78.3	
▲	B4-1.5	4.75				0.0	11.3	88.7	
★	B4-4.0	9.5				0.1	7.7	92.1	
⊙	B7-2.0	4.75				0.0	10.4	89.6	

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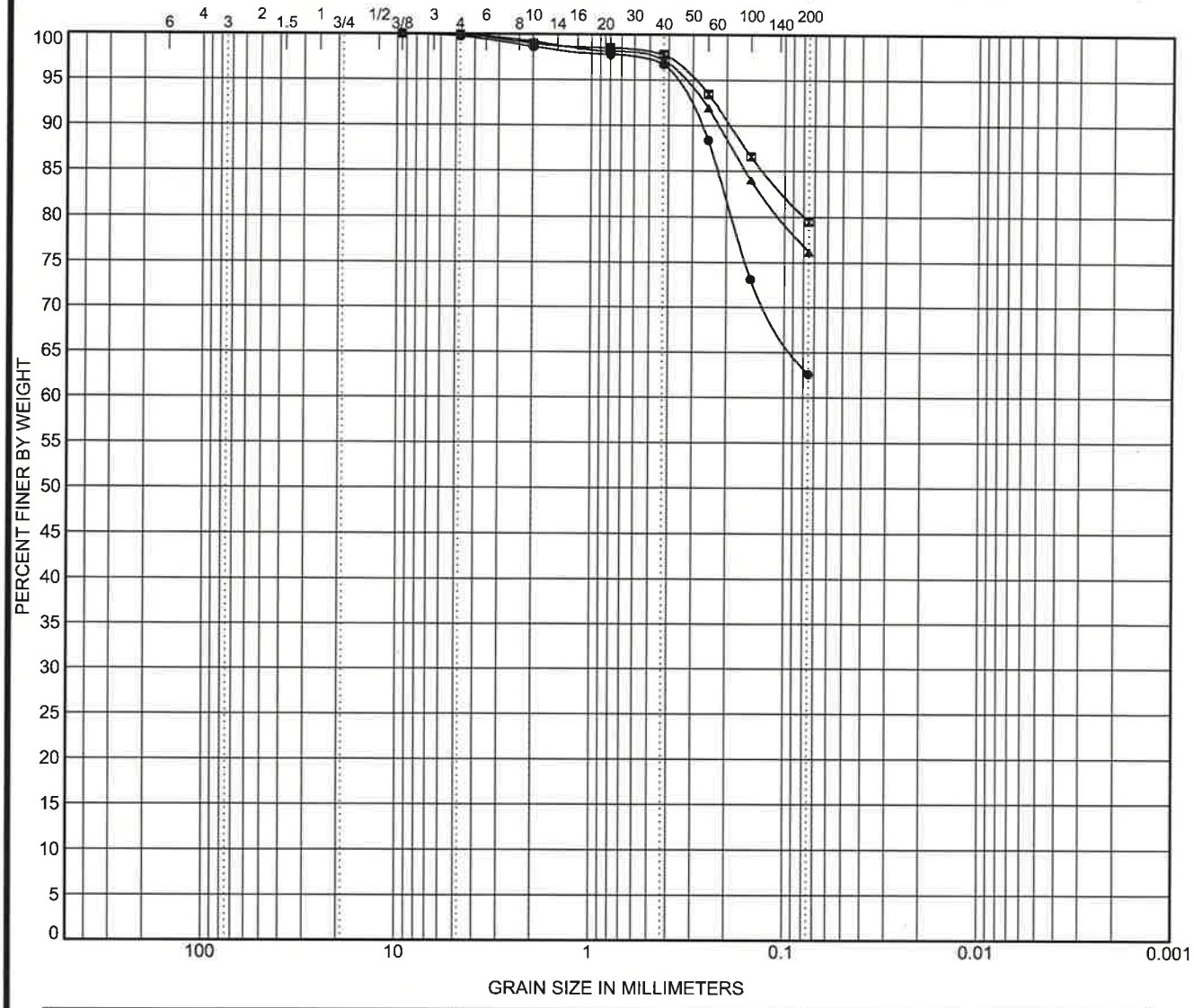
GRAIN SIZE DISTRIBUTION (ASTM D422, D6913)

Project: Land Park Commercial Center
Location: Sacramento, CA
Number: S9695-05-03
Figure: B3

GRAIN SIZE COPY 2 S9695-05-03 LAND PARK COMMERCIAL.GPJ US LAB.GDT 11/4/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample No.	Classification	LL	PL	PI	Cc	Cu
●	**B8-2.0**	**Sandy SILT (ML)**					
⊠	**B9-2.5**	**Lean CLAY with sand (CL)**					
▲	**B9-6.0**	**Lean CLAY with sand (CL)**					

	Sample No.	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B8-2.0**	**9.5**				**0.3**	**37.1**	**62.6**	
⊠	**B9-2.5**	**9.5**				**0.1**	**20.4**	**79.5**	
▲	**B9-6.0**	**4.75**				**0.0**	**23.8**	**76.2**	

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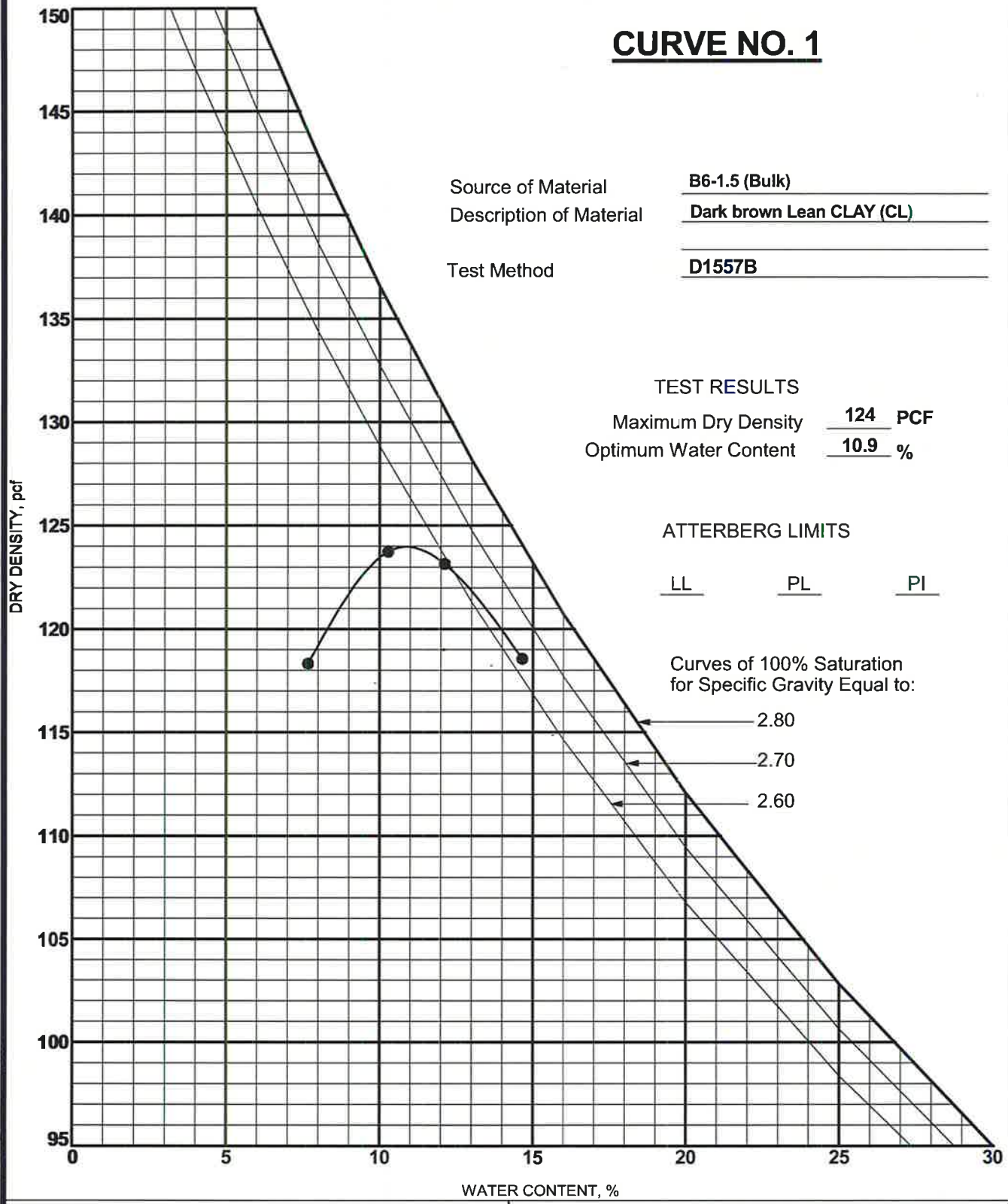
GRAIN SIZE DISTRIBUTION (ASTM D422, D6913)

Project: Land Park Commercial Center
Location: Sacramento, CA
Number: S9695-05-03
Figure: B4

CURVE NO. 1



Source of Material: B6-1.5 (Bulk)

Description of Material: Dark brown Lean CLAY (CL)

Test Method: D1557B

TEST RESULTS

Maximum Dry Density: 124 PCF

Optimum Water Content: 10.9 %

ATTERBERG LIMITS

LL	PL	PI

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

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MOISTURE-DENSITY RELATIONSHIP

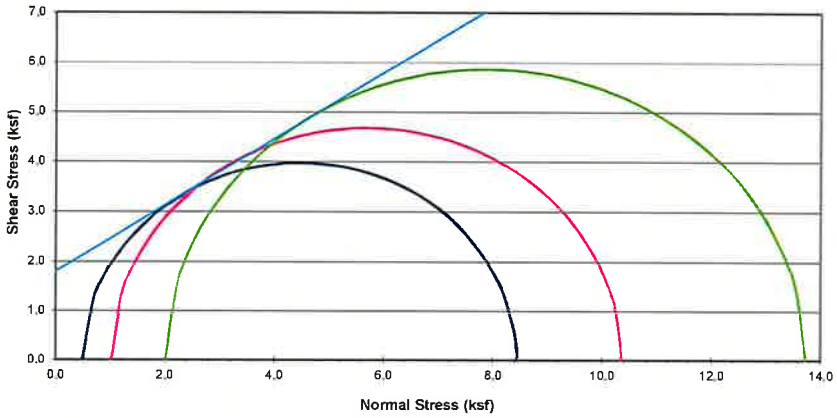
Project: Land Park Commercial Center

Location: Sacramento, CA

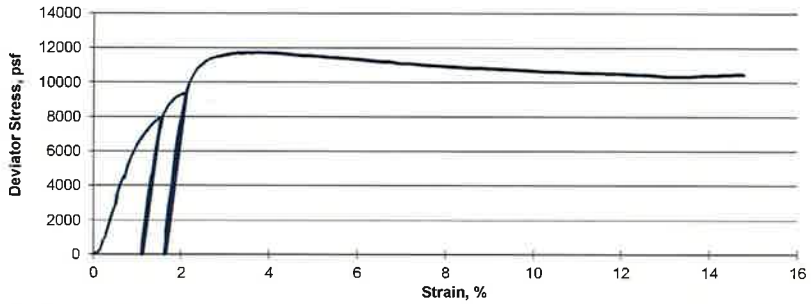
Number: S9695-05-03

Figure: B5

MOHR'S CIRCLES



STRESS-STRAIN



Failure Photo

Test Results				
	ϕ, degrees		**33.6**	
	c, psf		**1800**	
Sample Description				
	Sample Number		B5-2	
	Sample Depth (feet)		2	
	Material Description		Dark yellowish brown Sandy lean CLAY	
Initial Conditions at Start of Stage				
Sample ID (psf), minor principal stress		**500**	**1000**	**2000**
	Height (inch)	4.84	4.79	4.71
	Diameter (inch)	2.40	2.41	2.42
	Moisture Content (%)	6.5	6.5	6.5
	Dry Density (pcf)	111.8	111.8	111.8
	Saturation (%)	34.4	34.4	34.4
Shear Test Conditions				
	Strain Rate (%/min)	0.2505	0.2574	0.2909
	Major Principal Stress at Failure (psf)	8440	10360	13730
	Strain at failure (%)	1.53	2.08	3.68
	Deviator Stress and Fail (psf)	7940	9350	11720

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Triaxial Shear Strength - UU Test (staged)

Project: Land Park Commercial
Location: Sacramento, CA
Number: S9695-05-03
Figure: B6

APPENDIX K

General Plan Consistency Analysis

The proposed project's consistency with the City's 2035 General Plan goals and policies is contained in the table below. This consistency analysis provides the reader with a general overview of whether the project is in harmony with the overall intent of the City's 2035 General Plan goals and policies. It is within the City's decision makers' purview to decide if the proposed project is consistent or inconsistent with any applicable City goals or policies. This analysis is provided for informational purposes.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
Goal LU 1.1 Growth and Change. Support sustainable growth and change through orderly and well-planned development that provides for the needs of existing and future residents and businesses, ensures the effective and equitable provision of public services, and makes efficient use of land and infrastructure.	The proposed project is located in a developed area of the City where services are available, and would provide a range of neighborhood-serving retail uses and places for people to gather close to the existing neighborhoods in Land Park, South Land Park, Curtis Park and Hollywood Park. The project's proximity to these neighborhoods encourages residents to walk and bike to the project site. The project is consistent with this goal.
LU 1.1.1 Development Intensity at Less than the Minimum Floor Area Ratio. The City shall permit development at less than the required minimum FAR if only a ministerial permit is required. Where a discretionary permit is required, a development with a FAR at less than the required minimum may be deemed consistent with the General Plan if the City finds that (1) the use involves no building or by its nature normally conducts a substantial amount of its operations outdoors, or (2) the initial site development is being phased and an overall development plan demonstrates compliance with the FAR standard, or (3) the use is temporary and would not interfere with long-term development of the site consistent with the FAR standard, or (4) the building size or lot	The project calls for a FAR of .24, which is slightly less than the minimum .30 FAR identified under the Urban Corridor Low Density designation. Policy LU 1.1.1 allows exceptions to this policy and allows for any outdoor dining or gathering space to be omitted from the calculation of the developed area (per exemption (1) in Policy LU 1.1.1), as well as any overlay zones or existing constraints that would inhibit development (per exemption (4) in Policy LU 1.1.1.). The project includes 17,600 sf in outdoor dining and gathering space as well as 51,450 sf along the northern boundary of the project site where overland drainage flows from Freeport Boulevard to Babich Avenue occur and will need to be maintained. These constraints reduce the developable site area to 360,756 sf and a FAR of .30, consistent with the policy.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
coverage is constrained beyond what is otherwise allowed by the zoning designation of the site, due to the existence of an overlay zone or because of environmental features, such as wetlands.	
LU 1.1.5 Infill Development. The City shall promote and provide incentives (e.g., focused infill planning, zoning/rezoning, revised regulations, provision of infrastructure) for infill development, reuse, and growth in existing urbanized areas to enhance community character, optimize City investments in infrastructure and community facilities, support increased transit use, promote pedestrian- and bicycle-friendly neighborhoods, increase housing diversity, ensure integrity of historic districts, and enhance retail viability.	The proposed project is an infill development, located in a developed area of the City where services are available, and would utilize existing infrastructure and community facilities, support existing Sacramento Regional Transit routes and provide bike and pedestrian connections to the Land Park, South Land Park, Curtis Park and Hollywood Park neighborhoods. The project would provide a range of neighborhood-serving retail uses and places for people to gather close to these existing neighborhoods. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
Goal LU 2.1 City of Neighborhoods. Maintain a city of diverse, distinct, and well-structured neighborhoods that meet the community's needs for complete, sustainable, and high-quality living environments, from the historic downtown core to well-integrated new growth areas.	The proposed project is located in a developed area of the City where services are available. It would provide a range of neighborhood-serving retail uses and places for people to gather close to the existing neighborhoods in Land Park, South Land Park, Curtis Park and Hollywood Park. The project is consistent with this goal.
LU 2.1.1 Neighborhoods as a Basic Unit. Recognizing that Sacramento's neighborhoods are the basic living environments that make-up the city's urban fabric, the City shall strive through its planning and urban design to preserve and enhance their distinctiveness, identity, and livability	To address this policy, the project includes a mix of retail uses on a site that was previously developed and is located in close proximity to residential areas to encourage walking and biking and to serve the needs of the community. The anchor store, Raley's grocery store, has been in the neighborhood since the 1950s, and has created an identity for this stretch of Freeport Boulevard. The new store, located across the street from the existing Raley's location would allow for a continuation of the identity created by the existing Raley's grocery store.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
from the downtown core to well integrated new growth areas.	The proposed project supports the basic living environments of the Land Park, South Land Park, Curtis Park and Hollywood Park, enhancing their distinctiveness, identity and livability. The project is consistent with this policy.
LU 2.1.3 Complete and Well-Structured Neighborhoods. The City shall promote the design of complete and well-structured neighborhoods whose physical layout and land use mix promote walking to services, biking, and transit use; foster community pride; enhance neighborhood identity; ensure public safety; are family-friendly and address the needs of all ages and abilities.	Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents of all ages are encouraged to walk and bike to the project site from the adjacent Land Park, South Land Park, Hollywood Park and Curtis Park neighborhoods. The project is consistent with this policy.
LU 2.1.7 Good Neighbors. The City shall encourage businesses located within and adjacent to residential developments to conduct their business in a courteous manner by limiting disturbances and nuisances from operations and patrons, and to act as members of the community by making themselves available to respond to complaints and by participating in neighborhood/community meetings.	Policies 2.1.7 and 2.1.8 encourage businesses located within and adjacent to residential areas to conduct their business in a courteous manner by limiting disturbances and nuisances from operations and patrons, and to act as members of the community, and to have infill uses contribute positively to the neighborhood. The main anchor, Raley's, has been a member of the Land Park neighborhood since the 1950s and has an established track record as a good neighbor. It is anticipated this relationship with the neighborhood would not change with the project. The other retail uses have not been identified at this time, but the Applicant's goal is to attract restaurant and retail uses that provide a positive contribution to the surrounding neighborhoods. The project's design and proposed operations are mindful of the proximity of established residential neighborhoods. The heights and massing of project structures will be minimized to reduce buildings' visibility and the potential for light spill onto adjacent properties. The project design has been modified to mitigate noise and glare impacts by the use of a 40-foot building setback (to minimize loading dock noise) on the western edge of the project and the construction of a 12 foot wall. The project applicant has also shifted the grocery store to the south, to minimize potential impacts to residences on the south side of Meer Way. The project is consistent with this policy.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
LU 2.1.8 Neighborhood Enhancement. The City shall promote infill development, reuse, rehabilitation, and reuse efforts that contribute positively (e.g., architectural design) to existing neighborhoods and surrounding areas.	The proposed project is an infill development, located in a developed area of the City. The project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. This infill and reuse project is consistent with this policy.
Goal LU 2.4 City of Distinctive and Memorable Places. Promote community design that produces a distinctive, high-quality built environment whose forms and character reflect Sacramento's unique historic, environmental, and architectural context, and create memorable places that enrich community life.	As noted above, the project has been designed to ensure compatibility with the surrounding Land Park neighborhood using materials that include composite siding, stucco, stone veneer, and brick veneer with a neutral tan, gold, brown, gray, red brick and natural stone color palette. The project is consistent with this goal.
LU 2.4.2 Responsiveness to Context. The City shall require building design that respects and responds to the local context, including use of local materials where feasible, responsiveness to Sacramento's climate, and consideration of cultural and historic context of Sacramento's neighborhoods and centers.	As noted above and consistent with this policy, the project has been designed to ensure compatibility with the surrounding Land Park neighborhood. The project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. The buildings' exterior materials include composite siding, stucco, stone veneer, and brick veneer with a neutral tan, gold, brown, gray, red brick and natural stone color palette.
Goal LU 2.5 City Connected and Accessible. Promote the development of an urban pattern of well-connected, integrated, and accessible neighborhoods corridors, and centers.	Consistent with this goal, the project is located along a commercial corridor in an area that was previously developed with a retail use. The project site is located near existing residential neighborhoods and other retail and commercial businesses along Freeport Boulevard. The proposed project has been designed to provide pedestrian access from Wentworth Avenue and Freeport Boulevard. However, consistent with requests from neighbors, the project does not provide direct access from the west and north. Notably, the project site is located in an area that already provides good access and is well-connected by virtue of its location on Freeport Boulevard.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
LU 2.5.1 Connected Neighborhoods, Corridors, and Centers. The City shall require that new development, both infill and greenfield, maximizes connections and minimizes barriers between neighborhoods corridors, and centers within the city.	See response 2.5, above.
Goal LU 2.6 City Sustained and Renewed. Promote sustainable development and land use practices in both new development, reuse, and reinvestment that provide for the transformation of Sacramento into a sustainable urban city while preserving choices (e.g., where to live, work, and recreate) for future generations.	The project site is located in a developed neighborhood where people currently walk and bike to neighborhood retail shops. The project site is located in a developed neighborhood where people currently walk and bike to neighborhood retail shops. As described above, project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is designed to encourage more walking and biking by creating comfortable and safe places for people to walk and to secure their bikes. Due to the state and local building requirements (e.g., Title 24 and CALGreen Tier 1 water efficiency and conservation standards) the project would include all the latest technology to conserve water and energy. All landscaping would be drought tolerant and irrigated using drip irrigation with "smart" irrigation controls to minimize water usage. The project is consistent with this goal.
LU 2.6.1 Sustainable Development Patterns. The City shall promote compact development patterns, mixed use, and higher-development intensities that use land efficiently; reduce pollution and automobile dependence and the expenditure of energy and other resources; and facilitate walking, bicycling, and transit use.	Consistent with this policy, the proposed project is an infill development, located in a developed area of the City where services are available, and would utilize existing infrastructure and community facilities, support existing Sacramento Regional Transit routes and provide bike and pedestrian connections to the Land Park, South Land Park, Curtis Park and Hollywood Park neighborhoods. The project proposes to use land efficiently and minimize the use of energy, through the exceedance of Title 24 energy consumption standards. Moreover the project's design encourages walking, bicycling and transit use.
LU 2.6.4 Sustainable Building Practices. The City shall promote and, where appropriate, require sustainable building practices that incorporate a "whole system" approach to designing and constructing	Consistent with this policy, the project has been designed to meet and exceed the current California Building Energy Efficiency Standards by 5% (Title 24 2013 standards). The project includes energy efficient features such as low flow plumbing fixtures; energy efficient HVAC systems; LED lighting; low VOC paints and adhesives; interior daylighting; and energy efficient building envelopes including windows and

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
buildings that consume less energy, water and other resources, facilitate natural ventilation, use daylight effectively, and are healthy, safe, comfortable, and durable.	insulation, consistent with the California Green Building Code. The project would also comply with the CALGreen Tier 1 water efficiency and conservation standards.
LU 2.6.8 Heat Island Effect. The City shall reduce the "heat island effect" by promoting and requiring, where appropriate, such features as reflective roofing, green roofs, light-colored pavement, and urban shade trees and by reducing the unshaded extent of parking lots.	Consistent with this policy, the project's landscaping plan satisfies the City's Parking Lot Tree Shading Design and Maintenance Guidelines (City of Sacramento 2003) that require all new parking lots include tree plantings designed to result in 50% shading of parking lot surface areas within 15 years.
Goal LU 2.7 City Form and Structure. Require excellence in the design of the city's form and structure through development standards and clear design direction.	As described in policies 2.7.3, 2.7.4, 2.7.7, and 2.7.8 below, the project incorporates the City's development standards and includes the use of high quality building materials, consistent with this goal.
LU 2.7.3 Transitions in Scale. The City shall require that the scale and massing of new development in higher-density centers and corridors provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods that have lower development intensities and building heights.	The project includes seven buildings, including the Raley's grocery store, the largest and tallest building proposed. Building heights would range from approximately 20 to 23 feet for Shops 2 through 5 and 25-feet for Shops 1 and the larger 12,000 sf building. The roof height of the Raley's store would be 25 feet around the sides and rear of the building increasing to up to 39 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The lower portions of the building would be located adjacent to the south, west and north sides, providing more of a height transition to the adjacent residential areas. The proposed project also includes a 40-feet setback as well as a 10-foot high masonry wall and a planting strip adjacent to the western boundary of the project site that provides a separation between the Raley's store and adjacent residences. An 82-foot wide setback along with a 10-foot high masonry wall is proposed adjacent to the northern boundary of the project site, providing separation between the Raley's store, other businesses and adjacent residences. The project is consistent with this policy.

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
LU 2.7.4 Public Safety and Community Design. The City shall promote design of neighborhoods, centers, streets, and public spaces that enhances public safety and discourages crime by providing street-fronting uses ("eyes on the street"), adequate lighting and sight lines, and features that cultivate a sense of community ownership.	The City's police department has reviewed the project design and has provided input to enhance public safety. In furtherance of the police department's suggestions, the project includes a variety of lighting to enhance safety and to discourage crime. In addition, the area behind the Raley's store (west) would be gated to prohibit access. The project is consistent with the intent of Policy 2.7.4.
LU 2.7.7 Buildings that Engage the Street. The City shall require buildings to be oriented to and actively engage and complete the public realm through such features as building orientation, build-to and setback lines, façade articulation, ground-floor transparency, and location of parking.	Consistent with this policy, three of the seven buildings are located adjacent to Wentworth Avenue and Freeport Boulevard to engage the street. The project also includes trees throughout the parking lot, as shown in Figure 2-6 (see Draft EIR Chapter 2), which would help screen views and reduce the visual prominence of the parking lot. The project is consistent with Policy 2.7.7.
LU 2.7.8 Screening of Off-street Parking. The City shall reduce the visual prominence of parking within the public realm by requiring most off-street parking to be located behind or within structures or otherwise fully or partially screened from public view.	Policy 2.7.8 is designed to minimize views of parking lots from the public view. As shown in Figure 2-4, in Chapter 2, Project Description, the project site includes the freestanding buildings adjacent to Wentworth Avenue and Freeport Boulevard that would help block views of the parking lot and reduce the visual prominence. Moreover, the project includes trees throughout the parking lot, as shown in Figure 2-6, which would help screen views and reduce the visual prominence of the parking lot. The project is consistent with this policy.
Goal LU 6.1 Corridors. Support the development of major circulation corridors that balance their vehicular function with a vibrant mix of uses that contribute to meeting local and citywide needs for retail, services, and housing and provide pedestrian-friendly environments that serve as gathering places for adjacent neighborhoods.	Consistent with this goal, the project includes an activity node that provides a mix of tenants that is designed to ensure compatibility with the surrounding Land Park neighborhood. The proposed project's neighborhood-serving retail uses and places would provide opportunities for people to gather close to the existing neighborhoods in Land Park, South Land Park, Curtis Park and Hollywood Park. The project's proximity to these neighborhoods encourages residents to walk and bike to the project site. Consistent with the City's sign ordinance, signage will be high quality and the project may incorporate the existing historic Raley's sign along Freeport Boulevard. The project's landscape plan includes trees along the project's eastern boundary along

Land Use and Planning	
Goal/Policy	*Consistency Analysis*
	Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to the sidewalk to help enhance the definition of the corridor.
LU 6.1.10 Visual and Physical Character. The City shall promote development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by: • Enhancing the definition of the corridor by locating buildings at the back of the sidewalk, and establishing a consistent street wall • Introducing taller buildings that are in scale with the wide, multi-lane street corridors • Locating off-street parking behind or between buildings (rather than between building and street) • Reducing visual clutter by regulating the number, size and design quality of signs • Removing utility poles and under-grounding overhead wires • Adding street trees	The height of the Raley's store would be 25 feet around the sides and rear of the building increasing to up to approximately 40 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The lower portions of the building would be located adjacent to the south, west and north sides, providing more of a transition to the residential areas. The proposed project includes a 40-feet setback along with a 12-foot high masonry wall and a planting strip adjacent to the western boundary of the project site that provides a separation between the Raley's store and adjacent residences. An 82-foot wide setback along with a 10 to 12--foot high masonry wall is proposed adjacent to the northern boundary of the project site, providing a separation between the Raley's store, other businesses and adjacent residences. The project has been designed in collaboration with input from the local Land Park Community Association and includes shops adjacent to Freeport Boulevard and Wentworth Avenue, includes landscaping and generally meets the goal of providing a "street wall", with the larger buildings located to the rear of the site. The project's landscape plan includes trees along the project's eastern boundary along Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to the sidewalk to help enhance the definition of the corridor. The project is consistent with this policy.
LU 6.1.11 Differentiating the Corridor. The City shall promote development patterns that break up long, undifferentiated corridors of commercial strip development by establishing distinct activity nodes or centers that are distinguished by features such as their primary tenants, mix of uses, scale and intensity of development, and architectural character.	The project includes an activity node that provides a mix of tenants that is designed to ensure compatibility with the surrounding Land Park neighborhood. The project's landscape plan includes trees along the project's eastern boundary along Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to the sidewalk to help enhance the definition of the corridor. The project is consistent with this policy.

Aesthetics	
Goal/Policy	*Consistency Analysis*
Goal LU 2.1 City of Neighborhoods. The City shall preserve, protect, and enhance established neighborhoods by providing sensitive transitions between these neighborhoods and adjoining areas, and by requiring new development, both private and public, to respect and respond to those existing physical characteristics, buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.	See Goal LU 2.1, above. The proposed project is an infill development, located in a developed area of the City. The project site is located near existing residential neighborhoods and other retail and commercial businesses along Freeport Boulevard. The project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. The proposed project plans encourage residents of all ages to walk and bike to the project site for the adjacent Land Park, South Land Park, Hollywood Park and Curtis Park neighborhoods. The project is consistent with this goal.
LU 2.1.2 Protect Established Neighborhoods. The City shall preserve, protect, and enhance established neighborhoods by providing sensitive transitions between these neighborhoods and adjoining areas, and by requiring new development, both private and public, to respect and respond to those existing physical characteristics buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.	See Policy 2.1.2, above. Consistent with this policy, the project proponents engaged the Land Park Community Association in 2013 to discuss the project's relationship to the established Land Park neighborhood. The proposed project incorporates designs that address the transitions with existing buildings and the Freeport Boulevard streetscape. These design elements include pedestrian and bicycle features, outdoor sitting areas with active paseos, and landscaping that ties the project to the Land Park community. Project architecture is designed to acknowledge and relate to the existing Bank of America and East West Bank buildings located adjacent to the project site.
Goal LU 2.4 City of Distinctive and Memorable Places. Promote community design that produces a distinctive, high-quality built environment whose forms and character reflect Sacramento's unique historic, environmental, and architectural context, and create memorable places that enrich community life.	See Goal LU 2.4, above. The project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. The project has been designed to ensure compatibility with the surrounding Land Park neighborhood using materials that include composite siding, stucco, stone veneer, and brick veneer with a neutral tan, gold, brown, gray, red brick and natural stone color palette. Additional architectural features include metal and wood lattice; metal canopies; and architectural arbors. Freestanding buildings with multiple exposures include architectural detailing on all visible sides. The project is consistent with this goal.

Aesthetics	
Goal/Policy	*Consistency Analysis*
LU 2.4.1 Unique Sense of Place. The City shall promote quality site, architectural and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including: walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.	The proposed project incorporates designs that address the transitions with existing buildings and the Freeport Boulevard streetscape. These design elements include pedestrian and bicycle features, outdoor sitting areas with active paseos, and landscaping that ties the project to the Land Park community. The project is consistent with this policy.
LU 2.4.2 Responsiveness to Context. The City shall require building design that respects and responds to the local context, including use of local materials where feasible, responsiveness to Sacramento's climate, and consideration of cultural and historic context of Sacramento's neighborhoods and centers.	See Policy 2.4.2, above. As noted above, the project has been designed to ensure compatibility with the surrounding Land Park neighborhood. The project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. The buildings' exterior materials will include composite siding, stucco, stone veneer, and brick veneer with a neutral tan, gold, brown, gray, red brick and natural stone color palette. The use of outdoor seating areas and pedestrian and bicycle connections to offsite areas will create a neighborhood gathering place for the Land Park, Hollywood Park and Curtis Park neighborhoods. The project is consistent with this policy.
Goal LU 2.6 City Sustained and Renewed. Promote sustainable development and land use practices in both new development, reuse, and reinvestment that provide for the transformation of Sacramento into a sustainable urban city while preserving choices (e.g., where to live, work, and recreate) for future generations.	See Goal 2.6, above. The project site is located in a developed neighborhood where people currently walk and bike to neighborhood retail shops. As described above, project plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is designed to encourage more walking and biking by creating comfortable and safe places for people to walk and to secure their bikes. Due to the state and local building requirements (e.g., Title 24 and CALGreen Tier 1 water efficiency and conservation standards) the project would include all the latest technology to conserve water and energy. All landscaping would be drought tolerant and irrigated using drip irrigation with "smart" irrigation controls to minimize water usage. The project is consistent with this goal.

Aesthetics	
Goal/Policy	*Consistency Analysis*
LU 2.6.8 Heat Island Effect. The City shall reduce the "heat island effect" by promoting, where appropriate, such features as reflective roofing, green roofs, light-colored pavement, and urban shade trees and by reducing the unshaded extent of parking lots.	The project would include over 200 trees planted throughout the site, including the parking lot (in compliance with the City's Parking Lot Tree Shading Design and Maintenance Guidelines [City of Sacramento 2003], that require all new parking lots include tree plantings designed to result in 50% shading of parking lot surface areas within 15 years). The project is consistent with this policy.
Goal LU 2.7 City Form and Structure. Require excellence in the design of the city's form and structure through development standards and clear design direction.	See Goal 2.7, above. As described in policies 2.7.3, 2.7.4, 2.7.7, and 2.7.8 below, the project incorporates the City's development standards and includes the use of high quality building materials, consistent with this goal. The project includes seven freestanding buildings, including the Raley's grocery store, the largest and tallest building proposed. Building heights would range from approximately 20 to 23 feet for Shops 2 through 5 and 25-feet for Shops 1 and the larger 12,000 sf building. The roof height of the Raley's store would be 25 feet around the sides and rear of the building increasing to up to 39 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The lower portions of the building would be located adjacent to the south, west and north sides, providing more of a transition to the residential areas. The proposed project includes a 40-feet setback along with a 12-foot high masonry wall and a planting strip adjacent to the western boundary of the project site that provides a separation between the Raley's store and adjacent residences. An 82-foot wide setback along with a 10 to 12-foot high masonry wall is proposed adjacent to the northern boundary of the project site, providing a separation between the Raley's store, Shops 4 and adjacent residences.
LU 2.7.3 Transitions in Scale. The City shall require that the scale and massing of new development in higher-density centers and corridors provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods that have lower development intensities and building heights.	See Policy 2.7.3, above. As noted above, the roof height of the Raley's store would be 25 feet around the sides and rear of the building increasing to up to approximately 40 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The lower portions of the building would be located adjacent to the south, west and north sides, providing more of a transition to the residential areas. The project is consistent with this policy.

Aesthetics	
Goal/Policy	*Consistency Analysis*
LU 2.7.7 Buildings that Engage the Street. The City shall require buildings to be oriented to and actively engage and complete the public realm through such features as building orientation, build-to and setback lines, façade articulation, ground-floor transparency, and location of parking.	See Policy 2.7.7, above. The proposed project includes three freestanding buildings adjacent to Wentworth Avenue and Freeport Boulevard to engage the street, consistent with this policy. The project also includes trees throughout the parking lot, as shown in Figure 2-6 (see Draft EIR Chapter 2), which would help screen views and reduce the visual prominence of the parking lot. The project site is located in an area that already provides good access and is well-connected by virtue of its location on Freeport Boulevard.
LU 2.7.8 Screening of Off-street Parking. The City shall reduce the visual prominence of parking within the public realm by requiring most off-street parking to be located behind or within structures or otherwise fully or partially screened from public view.	See Policy 2.7.8, above. The project site includes three freestanding buildings adjacent to Wentworth Avenue and Freeport Boulevard that would help block views of the parking lot and reduce the visual prominence. The project also includes trees throughout the parking lot, which would help screen views and reduce the visual prominence of the parking lot. The project is consistent with this policy.
Goal LU 6.1 Corridors. Support the development of major circulation corridors that balance their vehicular function with a vibrant mix of uses that contribute to meeting local and citywide needs for retail, services, and housing and provide pedestrian-friendly environments that serve as gathering places for adjacent neighborhoods.	See Goal 6.1, above. Consistent with this goal, the project includes an activity node that provides a mix of tenants that is designed to ensure compatibility with the surrounding Land Park neighborhood. The proposed project's neighborhood-serving retail uses would provide opportunities for people to gather close to the existing neighborhoods in Land Park, South Land Park, Curtis Park and Hollywood Park. The project's proximity to these neighborhoods encourages residents to walk and bike to the project site. Consistent with the City's sign ordinance, signage will be high quality and the project may incorporate the existing historic Raley's sign along Freeport Boulevard. The project's landscape plan includes trees along the project's eastern boundary along Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to the sidewalk to help enhance the definition of the corridor.
LU 6.1.10 Visual and Physical Character. The City shall promote development patterns and streetscape improvements that transform the visual and physical character of typical automobile-oriented corridors by: • Enhancing the definition of the corridor by	See Policy 6.1.10, above. The height of the Raley's store would be 25 feet around the sides and rear of the building increasing to up to approximately 40 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The lower portions of the building would be located adjacent to the south, west and north sides, providing more of a transition to the residential areas. The

Aesthetics	
Goal/Policy	*Consistency Analysis*
locating buildings at the back of the sidewalk, and establishing a consistent street wall • Introducing taller buildings that are in scale with the wide, multi-lane street corridors • Locating off-street parking behind or between buildings (rather than between building and street) • Reducing visual clutter by regulating the number, size and design quality of signs • Removing utility poles and under-grounding overhead wires • Adding street trees	proposed project includes a 40-feet setback along with a 12-foot high masonry wall and a planting strip adjacent to the western boundary of the project site that provides a separation between the Raley's store and adjacent residences. An 82-foot wide setback along with a 10 to 12--foot high masonry wall is proposed adjacent to the northern boundary of the project site, providing a separation between the Raley's store, other businesses and adjacent residences. The project has been designed in collaboration with input from the local Land Park Community Association and includes shops adjacent to Freeport Boulevard and Wentworth Avenue, includes landscaping and generally meets the goal of providing a "street wall", with the larger buildings located to the rear of the site. The project's landscape plan includes trees along the project's eastern boundary along Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to both Freeport Boulevard and Wentworth Avenue to help enhance the definition of the corridor. The project is consistent with this policy.
LU 6.1.11 Differentiating the Corridor. The City shall promote development patterns that break up long, undifferentiated corridors of commercial strip development by establishing distinct activity nodes or centers that are distinguished by features such as their primary tenants, mix of uses, scale and intensity of development, and architectural character.	See Policy 6.1.11, above. The project includes an activity node that provides a mix of tenants and will be designed to ensure compatibility with the surrounding Land Park neighborhood. Consistent with the City's sign ordinance, signage will be high quality and the project may incorporate the existing historic Raley's sign. The project's landscape plan includes trees along the project's eastern boundary along Freeport Boulevard. Parking would be oriented internal to the project site and buildings are included adjacent to the sidewalk to help enhance the definition of the corridor. The project is consistent with this policy.
LU 6.1.12 Compatibility with Adjoining Uses. The City shall ensure that the introduction of higher-density mixed-use development along major arterial corridors is compatible with adjacent land uses, particularly residential uses, by requiring such features as: • Buildings setback from rear or side yard property lines adjoining single-family	Consistent with this policy, the project is located along Freeport Boulevard, a four-lane arterial. The project has been designed to minimize effects on adjacent residential uses and includes landscaping, masonry walls, and shielded lighting. The buildings are set back approximately 40-feet from the property line and adjacent residences to the west and approximately 82-feet from adjacent residences to the north. The project includes seven single-story buildings. The tallest building would be

Aesthetics	
Goal/Policy	*Consistency Analysis*
residential uses • Building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect privacy and solar access • Landscaped off-street parking areas, loading areas, and service areas screened from adjacent residential areas, to the degree feasible • Lighting shielded and directed downward to minimize impacts on adjacent residential uses.	Raley's grocery store at a maximum roof height of approximately 40 feet. The roof height would be 25 feet around the sides and rear of the building increasing to up to approximately 40 feet at the highest point on the east side (front) of the building facing the parking lot. The increase in building height is due to architectural features on the front of the building. The smaller retail buildings range in height from 20 to 25 feet. The placement of the buildings would not affect privacy or solar access to any of the adjacent residences. Consistent with this policy. The project includes an extensive landscaping plan that includes trees throughout the parking lot to meet the City's 50% shade requirement for parking lots. The landscaping would screen much of the project combined with the walls from adjacent residences to the west and north. Consistent with this policy. The project includes 25-foot-tall parking lot lights, consistent with commercial uses throughout the City including the existing Raley's store, along with building lights. All lighting would be shielded and focused downward consistent with this policy.
Goal ER 7.1 Visual Resource Preservation. Maintain and protect significant visual resources and aesthetics that define Sacramento.	The project has been designed using quality building materials appropriate to the neighborhood. As described above, the project features quality development and an architectural vernacular that embraces both transitional and contemporary designs found in other neighborhood retail areas in the community, as requested during consultation with the Land Park Community Association. The project is consistent with this goal.
ER 7.1.3 Lighting. The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and requiring light for development to be directed downward to minimize spill-over onto adjacent properties and reduce vertical glare.	Project lighting will be shielded and focused downward to minimize light spillover onto adjacent properties. The project is consistent with this policy. In addition, due to the walls along the west and north property boundaries and the building setbacks, no light source would be directly adjacent to existing residences. The project is consistent with this policy.

Aesthetics	
Goal/Policy	*Consistency Analysis*
ER 7.1.4 Reflective Glass. The City shall prohibit new development from (1) using reflective glass that exceeds 50 percent of any building surface and on the bottom three floors, (2) using mirrored glass, (3) using black glass that exceeds 25 percent of any surface of a building, (4) using metal building materials that exceed 50 percent of any street facing surface of a primarily residential building, and (5) using exposed concrete that exceeds 50 percent of any building.	The project does not include any reflective or mirrored glass, or any metal materials or exposed concrete that exceeds 50% of any building. Moreover, the project does not include black glass that exceeds 25% of any surface of a building. The project is consistent with this policy.

Air Quality	
Goal/Policy	*Consistency Analysis*
Goal ER 6.1 Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that contribute to climate change.	Consistent with this goal, the project is an infill development within a developed area of the City with bicycle, pedestrian, and transit access. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The use of these alternate modes of transportation would help reduce greenhouse gas emissions.
ER 6.1.2 New Development. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides, and particulate matter (PM_{10} and $PM_{2.5}$) through project design.	The proposed project (108,165 sf commercial) would result in less intense development of the site compared to how the site could be developed pursuant to its underlying land use and zoning (288,585 sf commercial and 40 residential units).Accordingly, the proposed project would not generate substantial population and employment that was not accounted for in the City's General Plan or SACOG's MTP/SCS. Because operational emissions for reactive organic gasses, nitrogen oxides, and particulate matter for construction and operation are considered less than significant, the project is consistent with this policy.

Air Quality	
Goal/Policy	*Consistency Analysis*
ER 6.1.3 Emissions Reduction. The City shall require development projects that exceed SMAQMD ROG and NOx operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.	Projects within the Sacramento Metropolitan Air Quality Management District's (SMAQMD) jurisdiction are required to implement SMAQMD's Basic Construction Emission Control Practices and are required to comply with District Rules and Regulations, including those identified in the Regulatory Setting section above. As shown in Table 4.2-5 of the Draft EIR, daily construction emissions would not exceed the SMAQMD significance thresholds for NOx, PM10, or PM2.5 during construction in all construction years. Therefore, construction impacts of the project would be less than significant and no mitigation measures are required. ROG, NOx, PM10, and PM2.5 emissions would be substantially below the SMAQMD threshold of significance. As part of complying with the City's Climate Action Plan, the project would include design features that would increase energy efficiency and further reduce emissions. Because air quality impacts are considered less than significant, the project is consistent with this policy.
ER 6.1.4 Sensitive Uses. The City shall coordinate with SMAQMD in evaluating exposure of sensitive receptors to toxic air contaminants, and will impose appropriate conditions on projects to protect public health and safety.	Based on the traffic analysis prepared for the project, the proposed project would meet all of the SMAQMD's CO hotspot second tier screening criteria and would not generate traffic volumes that could cause CO hotspots at local intersections and would not adversely affect sensitive receptors. The project is consistent with this policy.
ER 6.1.10 Coordination with SMAQMD. The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution if not already provided for through project design.	Consistent with this policy, Matthew Morales of Dudek (i.e., the City's environmental consultant) consulted with Ms. Karen Huss of the SMAQMD on January 6, 2016 and on March 9, 2016.

Air Quality	
Goal/Policy	*Consistency Analysis*
ER 6.1.13 Zero-Emission and Low-Emission Vehicle Use. The City shall encourage the use of zero-emission vehicles, low-emission vehicles, bicycles and other non-motorized vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.	Project plans do not currently include provisions for infrastructure or parking facilities for zero-emission and low-emission vehicles. However, project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is designed to encourage more walking and biking by creating comfortable and safe places for people to walk and to secure their bikes. The project is consistent with this policy.

Biological Resources	
Goal/Policy	*Consistency Analysis*
Goal ER 2.1 Nature and Open Space Protection. Protect and enhance open space, natural areas, and significant wildlife and vegetation in the city as integral parts of a sustainable environment within a larger regional ecosystem.	The site is highly disturbed, and no intact vegetation communities exist. The site is characterized by a variety of non-native grasses, weedy and ornamental species; several mature trees (*Quercus* sp., *Pinus* sp., and ornamentals) occur on adjacent properties surrounding the site such that branches from these trees extend over the property fence into the project site. There are a few small ornamental trees present in the center of site near the old greenhouses. No extant open space, natural area or significant wildlife or vegetation occur at or adjacent to the project site. Due to the disturbed, urban nature of the site, the project is consistent with this goal.
ER 2.1.10 Habitat Assessments. The City shall consider the potential impact on sensitive plants for each project requiring discretionary approval and shall require preconstruction surveys and/or habitat assessments for sensitive plant and wildlife species. If the preconstruction survey and/or habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either (1) protocol-level or	During the biological survey on October 23, 2014 (see Appendix C of the Draft EIR), it was determined that the site is highly disturbed and no sensitive species or habitats are located onsite. Due to the disturbed, urban nature of the site, no additional surveys are required. The project is consistent with this policy.

Biological Resources	
Goal/Policy	*Consistency Analysis*
industry-recognized (if no protocol has been established) surveys shall be conducted; or (2) presence of the species shall be assumed to occur in suitable habitat on the project site. Survey Reports shall be prepared and submitted to the City and the CDFW or USFWS (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with state and federal law.	
Goal ER 3.1 Urban Forest. Manage the City's urban forest as an environmental, economic, and aesthetic resource to improve Sacramento residents' quality of life.	The site is highly disturbed and a few small ornamental trees are present in the center of site near the old greenhouses. Project landscape plans include the planting of tree species designed to result in 50% shading of parking lot surface areas within 15 years. The project is consistent with this goal.
ER 3.1.6 Urban Heat Island Effect. The City shall continue to promote planting shade trees with substantial canopies, and require, where feasible, site design that uses trees to shade rooftops, parking facilities, streets, and other facilities to minimize heat island effect.	Consistent with this policy, project landscape plans include the planting of tree species designed to result in 50% shading of parking lot surface areas within 15 years.

Cultural Resources	
Goal/Policy	*Consistency Analysis*
Goal HCR 2.1 Identification and Preservation of Historic and Cultural Resources. Identify and preserve the city's historic and cultural resources to enrich our sense of place and our understanding of the city's prehistory and history.	Consistent with this goal, a formal records search was prepared for the proposed project site. The records search did not identify any recorded archaeological or historical resources on the project site or within a close proximity of the project site. A historic building assessment was conducted for all of the buildings slated for removal at 4700 Freeport Boulevard (former Capital Nursery site) and two residential properties located at 1913 and 1919 Wentworth Avenue to determine if any of the buildings would be eligible for listing on either the NRHP or the CRHR.

Cultural Resources	
Goal/Policy	*Consistency Analysis*
	The cultural resources report found none of the buildings were eligible under all state and national eligibility criteria due to a lack of significant historical associations and compromised integrity and are not considered historical resources. Based on the cultural resources evaluation in the attached Draft EIR, Section 4.4, there is a very low probability of encountering any subsurface prehistoric or historic resources or tribal cultural resources. Mitigation is included if any resources are unearthed during project construction. The project is consistent with this goal.
HCR 2.1.1 Identification. The City shall identify historic and cultural resources including individual properties, districts, and sites (e.g., archaeological sites) to provide adequate protection of these resources.	Consistent with this policy, a formal records search was prepared for the proposed project site. The records search did not identify any recorded archaeological or historical resources on the project site or within a close proximity of the project site. The cultural resources report found none of the buildings were eligible under all state and national eligibility criteria due to a lack of significant historical associations and compromised integrity and are not considered historical resources. Based on the cultural resources evaluation in the attached Draft EIR, Section 4.4, there is a very low probability of encountering any subsurface prehistoric or historic resources or tribal cultural resources. Mitigation is included if any resources are unearthed during project construction.
HCR 2.1.2 Applicable Laws and Regulations. The City shall ensure that City, State, and Federal historic preservation laws, regulations, and codes to protect and assist in the preservation of historic and archaeological resources, including the use of the California Historical Building Code as applicable. Unless listed in the Sacramento, California, or National registers, the City shall require discretionary projects involving resources 50 years and older to evaluate their eligibility for inclusion on the California or Sacramento registers for compliance with the California Environmental Quality Act.	Consistent with this policy, he project's cultural resources report found none of the buildings were eligible under all state and national eligibility criteria due to a lack of significant historical associations and compromised integrity. Therefore, none of the properties affected by the project are not considered historical resources under the California Historical Building Code or the Sacramento or California or National Registers. Based on the cultural resources evaluation in the attached Draft EIR, Section 4.4, there is a very low probability of encountering any subsurface prehistoric or historic resources or tribal cultural resources. Mitigation is included if any resources are unearthed during project construction.

Cultural Resources	
Goal/Policy	*Consistency Analysis*
HCR 2.1.3 Consultation. The City shall consult with the appropriate organizations and individuals (e.g., California Historical Resources Information System (CHRIS), the Native American Heritage Commission (NAHC), the CA Office of Planning and Research (OPR) "Tribal Consultation Guidelines", etc.,) and shall establish a public outreach policy to minimize potential impacts to historic and cultural resources.	Consistent with this policy, the California Historical Resources Information System, the Native American Heritage Commission and the CA Office of Planning and Research were consulted as a part of the preparation and processing of the Draft EIR cultural resources evaluation, as documented in the Draft EIR Section 4.4.
HCR 2.1.10 Early Project Consultation. The City shall minimize potential impacts to historic and cultural resources by consulting with property owners, land developers, and the building industry early in the development review process.	Consistent with this policy, the California Historical Resources Information System, the Native American Heritage Commission and the CA Office of Planning and Research were consulted as a part of the preparation and processing of the Draft EIR cultural resources evaluation, as documented in Draft EIR Section 4.4. The City also conducted early and extensive public outreach in support of the consideration of this project and the development of the CEQA analysis.
HCR 2.1.11 Compatibility with Historic Context. The City shall review proposed new development, alterations, and rehabilitation/remodels for compatibility with the surrounding historic context. The City shall pay special attention to the scale, massing, and relationship of proposed new development to surrounding historic resources.	The absence of historical resources in proximity to the project area obviates the need for consideration of compatibility with surrounding historical context.
HCR 2.1.15 Demolition. The City shall consider demolition of historic resources as a last resort, to be permitted only if rehabilitation of the resource is not feasible, demolition is necessary to protect the health, safety, and welfare of its residents, or the public benefits outweigh the loss of the historic resource.	The absence of historical resources within the project area obviates the need for consideration of alternatives to the demolition of extant structures.

Cultural Resources	
Goal/Policy	*Consistency Analysis*
HCR 2.1.16 Archaeological and Cultural Resources. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological and cultural resources including prehistoric resources.	Proposed mitigation in Draft EIR Section 4.4 is consistent with protocols to protect or mitigate impacts to archaeological and cultural resources including prehistoric resources. The project is consistent with this policy.
HCR 2.1.17 Preservation Project Review. The City shall review and evaluate proposed development projects to minimize impacts on identified historic and cultural resources, including projects on Landmark parcels and parcels within Historic Districts, based on applicable adopted criteria and standards.	As described in the Draft EIR Section 4.4, the City has reviewed and evaluated the proposed development project and did not identify presence or potential presence of historic or cultural resources. Regardless, proposed mitigation is consistent with protocols to protect or mitigate impacts to archaeological and cultural resources including prehistoric resources. The project is consistent with this policy.

Greenhouse Gas Emissions	
Goal/Policy	*Consistency Analysis*
Goal ER 6.1 Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that contribute to climate change.	As described below, the project incorporates the City's climate change policies, consistent with this goal.
ER 6.1.5 Community Greenhouse Gas Reductions. The City shall reduce community GHG emissions by 15 percent below 2005 baseline levels by 2020, and strive to reduce community emissions by 49 percent and 83 percent by 2035 and 2050, respectively.	Consistent with this policy, the project is consistent with the City's Climate Action Plan and meets the City's requirements for reducing GHG emissions.
ER 6.1.7 Greenhouse Gas Reduction in New Development. The City shall reduce greenhouse gas emissions from new development by discouraging auto-dependent	The City's CAP establishes requirements for projects to reduce a portion of their estimated GHG to assist the City in meeting state requirements to reduce GHG emissions in compliance with state law. The CAP Consistency Review Checklist includes six criteria that a project must be evaluated against. As shown in the

Greenhouse Gas Emissions	
Goal/Policy	*Consistency Analysis*
sprawl and dependence on the private automobile; promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio in each community; and other methods of reducing emissions.	completed CAP Checklist in Appendix B, the project would meet the City's six CAP requirements as summarized here, because it: 1. Meets the City's 2035 General Plan for land use and urban form and includes elements from the urban form guidelines including limited setbacks, buildings with a high degree of pedestrian-oriented uses such as outdoor cafe and restaurant seating areas, parking located behind or integrated into the site, and gathering places such as plazas; 2. Traffic calming measures do not apply since the project does not include any roadway improvements; 3. Incorporates pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan; 4. Complies with City's Bikeway Master Plan and the portions of City's Zoning Code that apply to bicycles and bike facilities; 5. The project will exceed the Title 24 efficiency standards in effect at the start of construction by a minimum of 5 percent; 6. Complies with the minimum CALGreen Tier I water efficiency and conservation standards. The project would meet each of the six CAP Consistency Review Checklist items and is consistent with the City's CAP with respect to planning and land use strategies. The project is consistent with this policy.
ER 6.1.10 Coordination with SMAQMD. The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution if not already provided for through project design.	Consistent with this policy, Matthew Morales of Dudek (the City's environmental consultant) coordinated with Ms. Karen Huss of the SMAQMD on January 6, 2016 and on March 9, 2016.
Goal U 6.1 Adequate Levels of Service. Provide for energy needs of the city and decrease dependence on nonrenewable energy sources through energy conservation,	As described below, the project incorporates a number of utility policies that provide for the energy needs of the City and decrease dependence on non-renewable energy sources, consistent with this goal.

Greenhouse Gas Emissions	
Goal/Policy	*Consistency Analysis*
efficiency, and renewable resource strategies.	
U 6.1.5 Energy Consumption per Capita. The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.	In compliance with the City's CAP, which assures that the City will consume 25 % less energy by 2030 compared to the baseline year of 2005, new structures built as part of the proposed project would exceed be required to meet Title 24 energy standards in effect at the start of construction by 5%. The project is consistent with this policy.
U 6.1.7 Solar Access. The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize passive solar access.	Consistent with this policy, the project site faces east and presents options for passive solar in the future.
U 6.1.15 Energy Efficient Appliances. The City shall encourage builders to supply Energy STAR appliances and HVAC systems in all new residential developments, and shall encourage builders to install high-efficiency boilers where applicable, in all new non-residential developments.	Consistent with this policy, the City will encourage the project applicant and their contractors to use high-efficiency HAVC and refrigeration systems.

Hazards and Hazardous Materials	
Goal/Policy	*Consistency Analysis*
Goal PHS 3.1 Reduce Exposure to Hazardous Materials and Waste. Protect and maintain the safety of residents, businesses, and visitors by reducing, and where possible, eliminating exposure to hazardous materials and waste.	The Sacramento County Environmental Management Department (SCEMD) is the Certified Unified Program Agency for local implementation of several hazardous materials and hazardous waste programs. SCEMD is responsible for regulating hazardous materials business plans and chemical inventory, hazardous materials storage, hazardous materials management plans, and risk management plans. The hazardous materials business plan program requires businesses in Sacramento County to prepare business emergency response plans if hazardous materials storage equals or exceeds 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of gas. Consistent with this goal, SCEMD's mission is to protect human health and the environment by ensuring that hazardous materials and hazardous waste

Hazards and Hazardous Materials	
Goal/Policy	*Consistency Analysis*
	are properly managed. The project does not propose any uses that would potentially expose future employees to hazardous conditions.
PHS 3.1.1 Investigate Sites for Contamination. The City shall ensure buildings and sites are investigated for the presence of hazardous materials and/or waste contamination before development for which City discretionary approval is required. The City shall ensure appropriate measures are taken to protect health and safety of all possible users and adjacent properties.	A Phase I and Phase II Environmental Site Assessment was prepared for the project site to determine if any onsite contamination was present due to the prior use of the site as a nursery along with any underground storage tanks. The assessments determined that there was no existing contamination that required remediation. The project is consistent with this policy.
PHS 3.1.4 Transportation Routes. The City shall restrict transport of hazardous materials within Sacramento to designated routes.	City designated truck routes include Sutterville Road between Freeport Boulevard and Franklin Boulevard, and Freeport Boulevard between Fourth Avenue and the south City limits. The project does not require the use of any hazardous materials. The project is consistent with this policy.

Hydrology and Water Quality	
Goal/Policy	*Consistency Analysis*
Goal EC 2.1 Flood Protection. Protect life and property from flooding.	Consistent with this goal, the project is located in an area of the City that contains flood protection; the project does not include any residential structures.
EC 2.1.11 New Development. The City shall require evaluation of potential flood hazards prior to approval of development projects […].	Consistent with this policy, the potential flood hazards associated with the project have been evaluated in Section 4.7 of the attached EIR. The project site is located outside of the 100-year flood hazard zone (Zone A), but within shaded Zone X, which is defined as areas that are protected from the 100-year flows by levees.
EC 2.1.22 Comprehensive Flood Management, Emergency, and Evacuation Plans. The City shall maintain, implement, update, and make available to the public the local Comprehensive Flood Management Plan, Emergency Plans, and Evacuation	Consistent with this policy, the City's Comprehensive Flood Management Plan, Emergency Plans, and Evacuation Plans, and FEMA Flood maps are all available at the City for review and were considered as part of the regulatory setting in Section 4.7 of the Draft EIR.

Hydrology and Water Quality	
Goal/Policy	*Consistency Analysis*
Plans, which address emergency preparedness, evacuation, hazardous materials, protection of critical facilities, development guidelines, and flood insurance outreach to better protect citizens in the event of a major flood event.	
Goal ER 1.1 Water Quality Protection. Protect local watersheds, water bodies and groundwater resources, including creeks, reservoirs, the Sacramento and American rivers, and their shorelines.	The project incorporates source control measures, LID controls, and treatment control measures into the project's design to reduce potential impacts to water quality. The project applicant is in the process of developing detailed on-site drainage designs that include water quality designs and BMPs to meet applicable water quality standards, consistent with this goal.
ER 1.1.4 New Development. The City shall require new development to protect the quality of water bodies and natural drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices (BMPs) and Low Impact Development (LID), and hydromodification strategies consistent with the city's NPDES Permit.	The project incorporates source control measures, LID controls, and treatment control measures into the project's design to reduce potential impacts to water quality. The project applicant is in the process of developing detailed on-site drainage designs that include water quality designs and BMPs to meet applicable water quality standards, consistent with this policy.
ER 1.1.5 Limit Stormwater Peak Flows. The City shall require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.	The project applicant prepared a Drainage Report (see Appendix F of the attached Draft EIR) to address on-site drainage issues and will be including LID controls that both reduce the overall volume of runoff and provide treatment of remaining pollutants in runoff through infiltration or other means, consistent with this policy. The project does not increase off-site drainage above existing levels and is consistent with this policy.
ER 1.1.6 Post-Development Runoff. The City shall impose requirements to control the volume, frequency, duration, and peak flow rates and velocities of runoff from development projects to prevent or reduce downstream erosion and protect stream habitat.	The project applicant prepared a Drainage Report (see Appendix F of the attached Draft EIR) to address on-site drainage issues and will be including LID controls that both reduce the overall volume of runoff and provide treatment of remaining pollutants in runoff through infiltration or other means, consistent with this policy. The project does not increase off-site drainage above existing levels and is consistent with this policy.

Hydrology and Water Quality	
Goal/Policy	*Consistency Analysis*
ER 1.1.7 Construction Site Impacts. The City shall minimize disturbances of natural water bodies and natural drainage systems caused by development, implement measures to protect areas from erosion and sediment loss, and continue to require construction contractors to comply with the City's erosion and sediment control ordinance and stormwater management and discharge control ordinance.	As a commercial development with an impervious area of greater than 1 acre, the MS4 Permit requires the project applicant to incorporate source control measures, LID controls, and treatment control measures into the project's design to reduce potential impacts to water quality during both project construction and operation. The project applicant is in the process of developing detailed on-site drainage designs that include water quality designs and BMPs to meet applicable water quality standards, consistent with this policy.
Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.	The project includes new on-site stormwater infrastructure that ensures no net increase in stormwater flows in adjacent areas, consistent with this goal.
U 4.1.1 Adequate Drainage Facilities. The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.	The project includes new on-site stormwater infrastructure that has been properly sized to accommodate the project, consistent with this policy.
U 4.1.5 Green Stormwater Infrastructure. The City shall encourage "green infrastructure" design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality).	As a commercial development with an impervious area of greater than 1 acre, the MS4 Permit requires the project applicant to incorporate source control measures, LID controls, and treatment control measures into the project's design to reduce potential impacts to water quality. The project applicant is in the process of developing detailed on-site drainage designs that include water quality designs and BMPs to meet applicable water quality standards, consistent with this policy.

Hydrology and Water Quality	
Goal/Policy	*Consistency Analysis*
U 4.1.6 New Development. The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures, including "green infrastructure" and Low Impact Development (LID) techniques, to prevent on- or off-site flooding.	The project applicant prepared a Drainage Report (see Appendix F attached to this Draft EIR) to address on-site drainage issues and will be including LID controls that both reduce the overall volume of runoff and provide treatment of remaining pollutants in runoff through infiltration or other means, consistent with this policy.

Noise	
Goal/Policy	*Consistency Analysis*
Goal EC 3.1 Noise Reduction. Minimize noise impacts on land uses and human activity to ensure the health and safety of the community.	Consistent with this goal, the project does not include uses that are inherently noisy, with the exception of noise associated with an urban environment (vehicles, trucks, people talking, back up warning devices on trucks, etc.).
EC 3.1.1 Exterior Noise Standards. The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 [Table 4.8-4 in the Draft EIR], to the extent feasible.	The project does not include uses that are inherently noisy, with the exception of noise associated with an urban environment (vehicles, trucks, people talking, back up warning devices on trucks, etc.). The project is consistent with this policy.
EC 3.1.2 Exterior Incremental Noise Standards. The City shall require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table EC 2 [Table 4.8-5 in the Draft EIR], to the extent feasible.	The project meets the City's exterior incremental noise standards. The project is consistent with this policy.
EC 3.1.5 Interior Vibration Standards. The City shall require construction projects	The project would not generate a high level of vibration either during project construction or operation that would result in unacceptable interior vibration levels.

Noise	
Goal/Policy	*Consistency Analysis*
anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria.	The project is consistent with this policy.
EC 3.1.7 Vibration. The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archaeological sites and require all feasible measures be implemented to ensure no damage would occur.	The project does not include any uses that would generate a high level of vibration during either project construction or operation that could damage historic buildings or archeological sites. No known historic buildings or archeological sites are near the project site.The project is consistent with this policy.
EC 3.1.8 Operational Noise. The City shall require mixed-use, commercial, and industrial projects to mitigate operational noise impacts to adjoining sensitive uses when operational noise thresholds are exceeded.	The project will not generate operational noise that exceeds City standards. The project is consistent with this policy.
EC 3.1.10 Construction Noise. The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.	A noise analysis was prepared for the project that evaluates noise associated with project construction and operation and is included in Section 4.8 of the attached Draft EIR. The analysis determined construction noise could be disruptive to the adjacent neighbors and required mitigation. Noise associated with project operation would not exceed the City's noise standards. The project is consistent with this policy.
EC 3.1.11 Alternatives to Sound Walls. The City shall encourage the use of design strategies and other noise reduction methods along transportation corridors in lieu of sound walls to mitigate noise impacts and enhance aesthetics.	The project includes a wall between the project and adjacent residential uses along the western and northern boundaries of the project site. These walls are not located along a transportation corridor and are not designed to block transportation noise. The walls are designed to shield the adjacent neighbors from the noise associated with operation of the project and from views of the back side of the buildings. The project is consistent with this policy.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
Goal PHS 1.1 Crime and Law Enforcement. Work cooperatively with the community, regional law enforcement agencies, local government and other entities to provide quality police service that protects the long-term health, safety, and well-being of our city, reduce current and future criminal activity, and incorporate design strategies into new development.	Consistent with this goal, the project has been reviewed by the City's police department to ensure it meets any policies to deter criminal activity.
PHS 1.1.2 Response Time Standards. The City shall strive to achieve and maintain optimal response times for all call priority levels to provide adequate police services for the safety of all city residents and visitors.	The project is located in a developed neighborhood in the City and is currently served by the City's police department. It is assumed the demand for police services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. Accordingly, there will be no issues with meeting current response times. The project is consistent with this policy.
PHS 1.1.3 Staffing Standards. The City shall maintain optimum staffing levels for both sworn police officers and civilian support staff in order to provide quality police services to the community.	As described above, it is assumed the demand for police services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. The project would not increase the demand for police services that would require additional police officers be hired. The project is consistent with this policy.
PHS 1.1.4 Timing of Services. The City shall ensure that development of police facilities and delivery of services keeps pace with development and growth in the city.	The project is located in a developed area of the City and is currently served by the City's police department. It is assumed the demand for police services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. Accordingly, there will be no issues with meeting police services. The project is consistent with this policy.
PHS 1.1.7 Development Review. The City shall continue to include the Police	The project has been reviewed by the City's police department to ensure it meets

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
Department in the review of development proposals to ensure that projects adequately address crime and safety, and promote the implementation of Crime Prevention through Environmental Design principles.	any requirements to deter criminal activity. The project is consistent with this policy.
PHS 1.1.8 Development Fees for Facilities. The City shall require development projects to contribute fees for police facilities.	The project applicant will pay all required fees consistent with this policy.
Goal PHS 2.1 Fire Protection and Emergency Medical Services. Provide coordinated fire protection and emergency medical services that address the needs of Sacramento residents and businesses and maintain a safe and healthy community.	Consistent with this goal, fire and emergency services are currently provided to the project site and it is anticipated these services will continue.
PHS 2.1.2 Response Time Standards. The City shall strive to maintain emergency response times that provide optimal fire protection and emergency medical services to the community.	The project is located in a developed area of the City and is currently served by the City's fire department. It is assumed the demand for fire services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. Accordingly, there will be no issues with meeting current response times. The project is consistent with this policy.
PHS 2.1.3 Staffing Standards. The City shall maintain optimum staffing levels for sworn, civilian, and support staff, in order to provide quality fire protection and emergency medical services to the community.	As described above, it is assumed the demand for fire services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. The project would not increase the demand for fire services that would require additional fire fighters be hired. The project is consistent with this policy.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
PHS 2.1.4 Response Unit and Facilities. The City shall provide additional response units, staffing, and related capital improvements, including constructing new fire stations, as necessary, in areas where a fire company experiences call volumes exceeding 3,500 in a year to prevent compromising emergency response and ensure optimum service to the community.	As described above, it is assumed the demand for fire services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. The project would not increase the demand for fire services that would require additional firefighters be hired. The project is consistent with this policy.
PHS 2.1.5 Timing of Services. The City shall ensure that the development of fire facilities and delivery of services keeps pace with development and growth of the city.	The project is located in a developed area of the City and is currently served by the City's fire department. It is assumed the demand for fire services at the new grocery store would remain the same as the existing store. The primary change would be associated with the additional six retail shops. The proposed project does not include any new residential uses which would increase the residential population of the service area. Accordingly, there will be no issues with meeting current fire services. The project is consistent with this policy.
PHS 2.1.11 Development Fees for Facilities and Services. The City shall require development projects to contribute fees for fire protection services and facilities.	The project applicant will pay all required fees consistent with this policy.
Goal PHS 2.2 Fire Prevention Programs and Suppression. The City shall deliver fire prevention programs that protect the public through education, adequate inspection of existing development, and incorporation of fire safety features in new development.	Consistent with this policy, the project has been reviewed by the City's fire department to ensure it meets any requirements to maintain fire safety. A 40-foot wide fire access road is provided behind the proposed Raley's grocery store to ensure adequate fire access is provided.
PHS 2.2.2 Development Review. The City shall continue to include the Fire Department in the review of development proposals to ensure projects adequately address safe design and on-site fire protection and comply	Consistent with this policy, the project has been reviewed by the City's fire department to ensure it meets any requirements to maintain fire safety. A 40-foot wide fire access road is provided behind the proposed Raley's grocery store to ensure adequate fire access is provided.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
with applicable fire and building codes.	
PHS 2.2.3 Fire Sprinkler Systems. The City shall promote installation of fire sprinkler systems in new commercial and residential development, and shall encourage the installation of sprinklers in existing structures when it is reasonable and not cost prohibitive.	The project has been designed consistent with the Uniform Fire Code and City fire standards. The project is consistent with this policy.
PHS 2.2.4 Water Supply for Fire Suppression. The City shall ensure that adequate water supplies are available for fire-suppression throughout the city, and shall require development to construct all necessary fire suppression infrastructure and equipment.	A water supply test was done and adequate water pressure is available to serve the project site in the event of a fire. The project is consistent with this policy.
PHS 2.2.9 Development Review for Emergency Response. The City shall continue to include appropriate emergency responders (e.g., Fire Department staff) in the review of development proposals to ensure emergency response times can be adequately maintained.	Consistent with this policy, the project has been reviewed by the City's fire department to ensure it meets any requirements to maintain fire safety.
Goal ERC 2.2 Parks, Community and Recreation Facilities and Services. Plan and develop parks, community and recreation facilities, and services that enhance community livability, improve public health and safety, are equitably distributed throughout the City, and are responsive to the needs and interests of residents, employees, and visitors.	The project does not include residential development, but will pay required park fees to the City. The project is consistent with this goal.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
ERC 2.2.9 Small Public Places for New Development. The City shall allow new development to provide small plazas, pocket parks, civic spaces, and other gathering places that are available to the public, particularly in infill areas, to help meet recreational demands.	The project does not include residential development, but does include outdoor gathering places for employees and patrons of the project. Land Park is also located less than 0.25 of a mile north. The project is consistent with this policy.
Goal ERC 2.5 Funding. Secure adequate and reliable funding for the acquisition, development, rehabilitation, programming, and maintenance of parks, community facilities, recreation facilities, trails, parkways, and open space areas.	The project does not include a residential population, but will pay required park fees to the City. The project is consistent with this goal.
ERC 2.5.4 Capital Funding. The City shall fund the costs of acquisition and development of City neighborhood and community parks, and community and recreation facilities through land dedication, in lieu fees, and/or development impact fees.	The project does not include a residential population, but will pay required park fees to the City. The project is consistent with this policy.
Goal U 2.1 High-Quality and Reliable Water Service. Provide water supply facilities to meet future growth within the City's Place of Use and assure a high-quality and reliable supply of water to existing future residents.	The project site is served by existing City water infrastructure and adequate water is available to serve the project. The project is consistent with this goal.
U 2.1.9 New Development. The City shall ensure that water supply capacity is in place prior to granting building permits for new development.	Consistent with this policy, the project site is served by existing City water infrastructure and adequate water is available to serve the project.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
U 2.1.12 Water Conservation Enforcement. The City shall continue to enforce City ordinances that prohibit waste or runoff of water, establish limits on outdoor water use, and specify applicable penalties.	The project includes an extensive landscaping plan that relies on drought tolerant species and would be irrigated using drip irrigation with "smart" irrigation controls to minimize water usage. The project would also comply with the CALGreen Tier 1 water efficiency and conservation standards. The project is consistent with this policy.
U 2.1.15 Landscaping. The City shall continue to require the use of water-efficient and river-friendly landscaping in all new development, and shall use water conservation gardens (e.g., Glen Ellen Water Conservation Office) to demonstrate and promote water conserving landscapes.	The project includes an extensive landscaping plan that relies on drought tolerant species and would be irrigated using drip irrigation with "smart" irrigation controls to minimize water usage. The project would also comply with the CALGreen Tier 1 water efficiency and conservation standards. The project is consistent with this policy.
U 2.1.16 River-Friendly Landscaping. The City shall promote "River-Friendly Landscaping" techniques which include the use of native and climate appropriate plants; sustainable design and maintenance; underground (water-efficient) irrigation; and yard waste reduction practices.	The project includes an extensive landscaping plan that relies on drought tolerant species and would be irrigated using drip irrigation with "smart" irrigation controls to minimize water usage. The project is consistent with this policy.
Goal U 3.1 Adequate and Reliable Sewer and Wastewater Facilities. Provide adequate and reliable sewer and wastewater facilities that collect, treat and safely dispose of wastewater.	Consistent with this goal, the project includes new onsite sewer lines that would tie into the City's existing wastewater infrastructure.
U 3.1.1 Sufficient Service. The City shall provide sufficient wastewater conveyance, storage, and pumping capacity for peak sanitary sewer flows and infiltration.	The project includes new onsite sewer lines that would tie into the City's existing wastewater infrastructure. The project is consistent with this policy.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
Goal U 4.1 Adequate Storm Water Drainage. Provide adequate stormwater drainage facilities and services that are environmentally sensitive, accommodate growth, and protect residents and property.	The project includes an on-site stormwater and drainage system would be served by a network of on-site private storm drain pipes with a single 24-inch service connection to the existing City public storm drain mainline located in Freeport Boulevard. This would provide adequate drainage service to the site. The project is consistent with this goal.
U 4.1.4 Watershed Drainage Plans. The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City's National Pollutant Discharge Elimination System (NPDES) permit.	The project applicant prepared a Drainage Report (see Appendix F) to address on-site drainage issues pursuant to the City's standards. The project's proposed drainage plan is consistent with this policy.
U 4.1.5 Green Stormwater Infrastructure. The City shall encourage "green infrastructure" design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality).	As a commercial development with an impervious area of greater than 1 acre, the MS4 Permit requires the project applicant to incorporate source control measures, LID controls, and treatment control measures into the project's design to reduce potential impacts to water quality. The project applicant is in the process of developing detailed on-site drainage designs that include water quality designs and BMPs to meet applicable water quality standards, consistent with this policy.
U 4.1.6 New Development. The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures, including "green infrastructure" and Low Impact Development (LID) techniques, to prevent on- or off-site flooding.	The project applicant prepared a Drainage Report (see Appendix F) to address on-site drainage issues and will be including LID controls that both reduce the overall volume of runoff and provide treatment of remaining pollutants in runoff through infiltration or other means, consistent with this policy.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
Goal U 5.1 Solid Waste Facilities. Provide adequate solid waste facilities, meet or exceed State law requirements, and utilize innovative strategies for economic and efficient collection, transfer, recycling, storage, and disposal of refuse.	Consistent with this goal, all construction debris would be recycled in compliance with the City's C&D Ordinance and recycling containers will be provided on-site to encourage recycling.
U 5.1.14 Recycled Materials in New Construction. The City shall encourage the use of recycled materials in new construction.	Consistent with this policy, the project applicant will use recycled materials if feasible.
U 5.1.15 Recycling and Reuse of Construction Wastes. The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting 85 percent to a certified recycling processor.	Consistent with this policy, all construction debris would be recycled in compliance with the City's C&D Ordinance.
Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient high-quality public infrastructure facilities and services throughout the city.	Consistent with this goal, the project would include new onsite infrastructure that meets all current standards and requirements.
U 1.1.5 Growth and Level of Service. The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.	The project will provide new water, wastewater, electrical, drainage, and cable infrastructure on-site as part of the project. The project is consistent with this policy.
U 1.1.11 Underground Utilities. The City shall require undergrounding of all new publically-owned utility lines, encourage undergrounding of all privately-owned lines in new developments, and work with electricity	Project development will underground utilities, consistent with this policy.

Public Services and Utilities	
Goal/Policy	*Consistency Analysis*
and telecommunications providers to underground existing overhead lines.	
Goal U 6.1 Adequate Level of Service. Provide for the energy needs of the City and decrease dependence on nonrenewable energy sources through energy conservation, efficiency, and renewable resource strategies.	Consistent with this goal, the project has been designed to meet and exceed the current California Building Energy Efficiency Standards (Title 24 2013 standards) by 5% and includes energy efficient features such as low flow plumbing fixtures; energy efficient HVAC systems; LED lighting; low VOC paints and adhesives; interior daylighting; and energy efficient building envelopes including windows and insulation, consistent with the California Green Building Code.
U 6.1.5 Energy Consumption per Capita. The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.	The project has been designed to meet and exceed the current California Building Energy Efficiency Standards (Title 24 2013 standards) by 5%, which assures that the City will consume 25% less energy by 2030 compared to the baseline year of 2005, and includes energy efficient features such as low flow plumbing fixtures; energy efficient HVAC systems; LED lighting; low VOC paints and adhesives; interior daylighting; and energy efficient building envelopes including windows and insulation, consistent with the California Green Building Code. The project is consistent with this policy.
U 6.1.7 Solar Access. The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize passive solar access.	The project faces east, which will allow for some passive solar opportunities in the future. The project is consistent with this policy.
U 6.1.8 Other Energy Generation Systems. The City shall promote the use of locally shared solar, wind, and other energy generation systems as part of new planned developments.	This policy requires the City to promote the use of alternative energy systems. The project has been designed to meet and exceed the current California Building Energy Efficiency Standards (Title 24 2013 standards) by 5%, which assures that the City will consume 25% less energy by 2030 compared to the baseline year of 2005, and includes energy efficient features such as low flow plumbing fixtures; energy efficient HVAC systems; LED lighting; low VOC paints and adhesives; interior daylighting; and energy efficient building envelopes including windows and insulation, consistent with the California Green Building Code. The project is consistent with this policy.

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Goal M 1.1 Comprehensive Transportation System. Provide a multimodal transportation system that supports the social, economic and environmental vision, goals, and objectives of the City, and is effectively planned, funded, managed, operated, and maintained.	Consistent with this goal, he project has been designed to include all modes of transportation (with the exception of transit, which is already available in close proximity to the project site).
Goal M 1.2 Multimodal System. Increase multimodal accessibility (i.e., the ability to complete desired personal or economic transactions via a range of transportation modes and routes) throughout the city and region with an emphasis on walking, bicycling, and riding transit.	The project has been designed to include all modes of transportation (with the exception of transit that is already available in close proximity to the project site). Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
M 1.2.2 Level of Service (LOS) Standard. The City shall implement a flexible context sensitive Level of Service (LOS) standard, and will measure traffic operations against the vehicle LOS thresholds established in this policy. The City will measure Vehicle LOS based on the methodology contained in the latest version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. The City's specific vehicle LOS thresholds have been defined based on community values with respect to modal priorities, land use context, economic development, and environmental resources and constraints. As such, the City has established variable LOS thresholds appropriate for the unique characteristics of the City's diverse neighborhoods and communities. The City will strive to operate	The transportation analysis prepared as part of the EIR in Section 4.10 addresses LOS and was prepared consistent with this policy. The project does not result in exceeding the acceptable LOS at intersections near the project site that were evaluated as per of the traffic analysis.

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
the roadway network at LOS D or better for vehicles during typical weekday conditions, including AM and PM peak hour with the following exceptions described below and mapped on Figure M-1: A. Core Area (Central City Community Plan Area) - LOS F allowed B. Priority Investment Areas – LOS F allowed C. LOS E Roadways - LOS E is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values. • 65th Street: Elvas Avenue to 14th Avenue • Arden Way: Royal Oaks Drive to I-80 Business • Broadway: Stockton Boulevard to 65th Street • College Town Drive: Hornet Drive to La Rivera Drive • El Camino Avenue: I-80 Business to Howe Avenue • Elder Creek Road: Stockton Boulevard to Florin Perkins Road • Elder Creek Road: South Watt Avenue to Hedge Avenue • Fruitridge Road: Franklin Boulevard to SR 99 • Fruitridge Road: SR 99 to 44th Street • Howe Avenue: El Camino Avenue to	

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Auburn Boulevard • Sutterville Road: Riverside Boulevard to Freeport Boulevard LOS E is also allowed on all roadway segments and associated intersections located within ½ mile walking distance of light rail stations. D. Other LOS F Roadways - LOS F is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values. • 47th Avenue: State Route 99 to Stockton Boulevard • Arcade Boulevard: Marysville Boulevard to Roseville Road • Carlson Drive: Moddison Avenue to H Street • El Camino Avenue: Grove Avenue to Del Paso Boulevard • Elvas Avenue: J Street to Folsom Boulevard • Elvas Avenue/56th Street: 52nd Street to H Street • Florin Road: Havenside Drive to Interstate 5 • Florin Road: Freeport Boulevard to Franklin Boulevard • Florin Road: Interstate 5 to Freeport Boulevard • Folsom Boulevard: 47th Street to 65th	

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Street • Folsom Boulevard: Howe Avenue to Jackson Highway • Folsom Boulevard: US 50 to Howe Avenue • Freeport Boulevard: Sutterville Road (North) to Sutterville Road (South) • Freeport Boulevard: 21st Street to Sutterville Road (North) • Freeport Boulevard: Broadway to 21st Street • Garden Highway: Truxel Road to Northgate Boulevard • H Street: Alhambra Boulevard to 45th Street • H Street 45th: Street to Carlson Drive • Hornet Drive: US 50 Westbound On-ramp to Folsom Boulevard • Howe Avenue: US 50 to Fair Oaks Boulevard • Howe Avenue: US 50 to 14th Avenue • Raley Boulevard: Bell Avenue to Interstate 80 • South Watt Avenue: US 50 to Kiefer Boulevard • West El Camino Avenue: Northgate Boulevard to Grove Avenue E. If maintaining the above LOS standards would, in the City's judgment be infeasible and/or conflict with the achievement of other goals, LOS E or F conditions may be	

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
accepted provided that provisions are made to improve the overall system, promote non-vehicular transportation, and/or implement vehicle trip reduction measures as part of a development project or a city-initiated project. Additionally, the City shall not expand the physical capacity of the planned roadway network to accommodate a project beyond that identified in Figure M4 and M4a (2035 General Plan Roadway Classification and Lanes). Policy M 1.2.2 (acceptable level of service) applies to the study area intersections as follows: 1. Freeport Boulevard and Sutterville Road (North) (signalized) – LOS F 2. Freeport Boulevard and Sutterville Road (South) (signalized) – LOS F 3. Freeport Boulevard and Meer Way (unsignalized) – LOS D 4. Freeport Boulevard and Wentworth Avenue/Stacia Way (signalized) – LOS D 5. Freeport Boulevard and Fruitridge Road (signalized) – LOS D 6. Land Park Drive and Sutterville Road (signalized) – LOS E 7. Land Park Drive and Fruitridge Road (signalized) – LOS D 8. Bank of America/Raley's (East) Driveways and Wentworth Avenue (unsignalized) – LOS D 9. Raley's (West) Driveway and Wentworth	

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Avenue (unsignalized) – LOS D 10. Freeport Boulevard and Bank of America Driveway (unsignalized) – LOS D 11. Freeport Boulevard and Project "Driveway 1" (unsignalized) (future) – LOS D 12. Project "Driveway 2" and Wentworth Avenue (unsignalized) (future) – LOS D	
M 1.2.3 Transportation Evaluation. The City shall evaluate discretionary projects for potential impacts to traffic operations, traffic safety, transit service, bicycle facilities, and pedestrian facilities, consistent with the City's Traffic Study Guidelines.	A traffic analysis has been prepared for this project and is included as Section 4.10 in the attached Draft EIR. The traffic analysis evaluates impacts to traffic operations, traffic safety, transit service, bicycle facilities, and pedestrian facilities, consistent with this policy.
M 1.2.4 Multimodal Access. The City shall facilitate the provision of multimodal access to activity centers such as commercial centers and corridors, employment centers, transit stops/stations, airports, schools, parks, recreation areas, medical centers, and tourist attractions.	The project has been designed to provide multi-modal access throughout the project site. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
Goal M 1.4 Transportation Demand Management. Reduce reliance on the private automobile.	The project has been designed to provide multi-modal access throughout the project site. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
M 1.4.3 Transportation Management Associations. The City shall encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations to reduce single-occupant vehicle trips.	This policy requires the City to encourage commercial development to participate in the reduction of single-occupant vehicle. The largest retailer in the center will be the Raley's grocery store. The existing Raley's store is not part of a Transportation Management Association, but will research the feasibility of creating a . Transportation Management Association, consistent with this policy.

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
M 1.4.4 Off-Peak Deliveries. The City shall encourage business owners to schedule deliveries at off-peak traffic periods.	This policy requires the City encourage businesses to schedule deliveries at off-peak hours. The existing Raley's store schedules deliveries between 6 a.m. and noon. Due to the need to get some perishable items delivered early in the day it is difficult to schedule these deliveries during off-peak hours. Because the other retailers are unknown at this time, the type or the timing of deliveries for those retailers is unknown. However, the potential to schedule deliveries at off-peak hours will be explored further by the project applicant, consistent with this policy.
Goal M 2.1 Integrated Pedestrian System. Design, construct, and maintain a universally accessible, safe, convenient, integrated, and well-connected pedestrian system that promotes walking.	The project is designed to encourage pedestrian access and includes wide sidewalks throughout the project site. Project designs and plans were prepared in consultation with Walk Sacramento to ensure that pedestrian needs are addressed and that residents are encouraged to walk to the project site. The project is consistent with this policy.
M 2.1.2 Sidewalk Design. The City shall require that sidewalks wherever possible be developed at sufficient width to accommodate all users including persons with disabilities and complement the form and function of both the current and planned land use context of each street segment (i.e. necessary buffers, amenities, outdoor seating space).	The project includes replacing sections of sidewalk along Freeport Boulevard and Wentworth Avenue. All repairs would be done in compliance with the City's design standards to assure accessibility. The project is consistent with this policy.
M 2.1.7 Safe Pedestrian Crossings. The City shall improve pedestrian safety at appropriate intersections and mid-block locations by providing safe pedestrian crossings.	As a Condition of Project Approval the City is requiring the project applicant pay for the installation of a new traffic light and add striping across Freeport Boulevard to provide safe pedestrian access. The project is consistent with this policy.
M 2.1.9 Safe Sidewalks. The City shall require pedestrian facilities to be constructed in compliance with adopted design standards.	The project includes replacing sections of sidewalk along Freeport Boulevard and Wentworth Avenue. All repairs would be done in compliance with the City's design standards. The project is consistent with this policy.

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Goal M 3.1 Safe, Comprehensive, and Integrated Transit System. Create and maintain a safe, comprehensive, and integrated transit system as an essential component of a multimodal transportation system.	The project has been designed to ensure adequate access is provided for pedestrians and bicyclists. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
M 3.1.18 Developer Contributions. Consistent with the City's established transportation impact analysis and mitigation guidelines, the City shall require developer contributions for bus facilities and services and related improvements.	The project applicant will pay all required transportation fees consistent with this policy. The project is consistent with this policy.
Goal M 4.2 Complete Streets. The City shall plan, design, operate and maintain all streets and roadways to accommodate and promote safe and convenient travel for all users – pedestrians, bicyclists, transit riders, and persons of all abilities, as well as freight and motor vehicle drivers.	The project has been designed consistent with this policy to encourage and promote safe and convenient travel for all users. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
M 4.2.1 Accommodate All Users. The City shall ensure that all new roadway projects and any reconstruction projects designate sufficient travel space for all users including bicyclists, pedestrians, transit riders, and motorists except where pedestrians and bicyclists are prohibited by law from using a given facility.	The project has been designed consistent with this policy and provides sidewalks and dedicated areas for bicyclists to access the site. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is consistent with this policy.
M 4.2.2 Pedestrian and Bicycle-Friendly Streets. In areas with high levels of pedestrian activity (e.g., employment centers, residential areas, mixed-use areas, schools), the City shall ensure that all street projects	The project has been designed consistent with this policy and provides sidewalks and dedicated areas for bicyclists to access the site. Project designs and plans were prepared in consultation with Walk Sacramento and the Sacramento Area Bicycle Advocates to ensure that pedestrian and bicyclists' needs are addressed and that residents are encouraged to walk and bike to the project site. The project is

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
support pedestrian and bicycle travel. Improvements may include narrow lanes, target speeds less than 35 miles per hour, sidewalk widths consistent with the Pedestrian Master Plan, street trees, high-visibility pedestrian crossings, and bikeways (e.g. Class II and Class III bike lanes, bicycle boulevards, separated bicycle lanes and/or parallel multi-use pathways).	consistent with this policy.
M 4.2.3 Adequate Street Tree Canopy. The City shall ensure that all new roadway projects and major reconstruction projects provide for the development of an adequate street tree canopy.	The project includes a landscaping plan and proposes to plant approximately 259 trees within the project site. The project is consistent with this policy.
Goal M 4.3 Neighborhood Traffic. Enhance the quality of life within existing neighborhoods through the use of neighborhood traffic management and traffic calming techniques, while recognizing the City's desire to provide a grid system that creates a high level of connectivity.	The project includes on-site elements that would slow traffic and maintain a safe environment for future patrons, consistent with this goal.
M 4.3.1 Neighborhood Traffic Management. The City shall continue wherever possible to design streets and approve development applications in a manner as to reduce high traffic flows and parking problems within residential neighborhoods.	Consistent the City's parking standards, the project includes a total of 457 surface parking spaces, which will reduce parking problems in neighboring residential neighborhoods. The project is consistent with this policy.
M 4.3.2 Traffic Calming Measures. Consistent with the Roadway Network and Street Typology policies in this General Plan and Goal M 4.3, the City shall use traffic calming measures to reduce vehicle speeds and volumes while also encouraging walking and bicycling.	Consistent with this policy, the project has been designed to prohibit vehicles speeding through the project site with appropriate traffic calming measures, and encourages pedestrian and bicycle access.

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
Goal M 5.1 Integrated Bicycle System. Create and maintain a safe, comprehensive, and integrated bicycle system and set of support facilities throughout the city that encourage bicycling that is accessible to all. Provide bicycle facilities, programs and services and implement other transportation and land use policies as necessary to achieve the City's bicycle mode share goal as documented in the Bicycle Master Plan.	The project has been designed to encourage bicycle access and for bicyclists by providing on-site bike racks and lockers. Project designs and plans were prepared in consultation with the Sacramento Area Bicycle Advocates to ensure that bicyclists' needs are addressed and that residents are encouraged to bike to the project site. The project is consistent with this policy.
M 5.1.4 Conformance to Applicable Standards. The City shall require all bikeways to conform to applicable Federal, State and City standards while considering a full range of innovative bikeway design best practices.	The onsite bikeways have been designed consistent with City requirements, consistent with this policy.
M 5.1.5 Motorists, Bicyclists, and Pedestrian Conflicts. The City shall develop safe and convenient bikeways, streets, roadways, and intersections that reduce conflicts between bicyclists and motor vehicles on streets, between bicyclists and pedestrians on multi-use trails and sidewalks, and between all users at intersections.	Project access along Freeport Boulevard and Wentworth Avenue has been designed to reduce conflicts between bicyclists and motor vehicles, consistent with City requirements and this policy.
M 5.1.6 Connections between New Development and Bicycle Facilities. The City shall require that new development provides connections to and does not interfere with existing and proposed bicycle facilities.	Consistent with this policy, bicycle access would be provided along all internal driveways within the project site. Bicycle access would be provided from Wentworth Avenue and Freeport Boulevard.
M 5.1.11 Bike Facilities in New Developments. The City shall require that major new development projects (e.g., employment centers, educational institutions,	Project designs and plans were prepared in consultation with the Sacramento Area Bicycle Advocates to ensure that bicyclists' needs are addressed and that residents are encouraged to bike to the project site. The project provides long-term Class I and short-term Class III parking throughout the site. Class I parking would be

Transportation and Traffic	
Goal/Policy	*Consistency Analysis*
recreational and retail destinations, and commercial centers) provide bicycle parking (i.e., short-term bicycle parking for visitors and long-term bicycle parking for residents or employees), personal lockers, showers, and other bicycle-support facilities.	provided by 11 secure bike lockers with an additional 57 bike spaces provided in bike racks throughout the project site. The project is consistent with this policy.
M 5.1.14 Encourage Bicycle Use. The City shall encourage bicycle use in all neighborhoods, especially where short trips are most common.	Project designs and plans were prepared in consultation with the Sacramento Area Bicycle Advocates to ensure that bicyclists' needs are addressed and that residents are encouraged to bike to the project site. The project includes access for bicycles throughout the site as well as bike racks and bike lockers. The project is consistent with this policy.
Goal M 1.9 Transportation Funding. Provide sufficient funding to construct, maintain, and operate transportation facilities and services needed to achieve the City's mobility goals.	The project applicant will pay all required fees, consistent with this policy.
M 9.1.1 New Development. The City shall require new development to contribute towards the construction of offsite facilities and provision of services to achieve the City's mobility goals.	The project applicant will pay all required fees, consistent with this policy.
M 9.1.5 Fair Share for Transportation Infrastructure Improvements. The City shall require all new development to dedicate right-of-way, construct facilities, or pay its fair share for needed transportation infrastructure improvements that support all travel modes, including pedestrian, bicycle, and transit facilities, roadway improvements, and transportation demand management (TDM) programs and services.	The project applicant will pay all required fees to the City for any required transportation infrastructure improvements, consistent with this policy. Moreover, as a Condition of Project Approval, the project applicant is constructing numerous transportation improvements required by the City.