Appendix A
Notice of Preparation

NOTICE OF PREPARATION

Date:	December 14, 2018
To:	Responsible Agencies, Organizations, and Interested Parties
Subject:	Notice of Preparation of an Environment Impact Report for the Richards Boulevard Office Complex Project, Sacramento, California
Lead Agency:	State of California Department of General Services
Contact:	Stephanie Coleman, Senior Project Manager Department of General Services, Environmental Services Section Mailing Address: P.O. Box 989052, West Sacramento, CA 95798 Street Address: 707 3rd Street, 4th Floor, West Sacramento, CA 95605 Phone: (916) 376-1602 Email: stephanie.coleman@dgs.ca.gov
Comment Period:	*December 14, 2018 – January 14, 2019*

PURPOSE OF NOTICE

The California Department of General Services (DGS) is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed Richards Boulevard Office Complex project (RBOC or proposed project), located in central Sacramento.

Pursuant to provisions of the California Environmental Quality Act (CEQA), DGS has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (State CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

PROJECT LOCATION

The proposed project site is located on a site in the River District of the city of Sacramento (Figure 1) which currently houses the State Printing Plant and Textbook Warehouse. The site is bounded by Richards Boulevard on the north, North 7th Street on the east, and North B Street on the south, and is immediately east of the Coastline Equipment Crane Division Building and the Capital Investments & Loans Building (Figure 2).

PROJECT DESCRIPTION

The purpose of the Richards Boulevard Office Complex project is to consolidate State office space and address State office space deficiencies in downtown Sacramento and to provide a modern, efficient, and safe environment for State employees and the public they serve.

While the exact design will be developed through a design-build process, DGS anticipates that the proposed project would include approximately 1.3 million gross square feet across three mid-rise office buildings and one high-rise (up to 29 stories) office building. Project amenities would include a cafeteria, auditorium, fitness center, and childcare center. Site improvements may include a parking garage and surface parking spaces, open space, and pedestrian walkways. Building designs will target leadership in energy and environmental design (LEED) Silver level, including Zero Net Energy. Some off-site utility improvements may be made to connect the project site to utility infrastructure.

PROJECT OBJECTIVES

The objectives of the Richards Boulevard Office Complex project are to:

- Consolidate State office space and address State office space deficiencies in downtown Sacramento, while prioritizing building on underutilized State property;
- Accommodate staff from State-owned office buildings targeted for renovation or replacement in such a way as to facilitate the vacation, eventual renovation, and re-occupation of these structures while minimizing disruption to State agencies;
- Provide a modern, efficient, and safe environment for State employees and the public they serve;
- Integrate the new State development with the existing neighborhood;
- Develop a sustainable and energy-efficient building(s);
- Encourage and support the use of alternative commute modes by designing the project to have easy access to multiple transit modes; and
- Maximize the effectiveness of the design-build project delivery method by maintaining sufficient flexibility in the performance criteria to support innovation in the design competition.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project (State CEQA Guidelines Section 15381). Discretionary approval power may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. It is anticipated that approval from various City of Sacramento departments will be required to complete construction of the Richards Boulevard Office Complex Project within City right-of-way. Where city approval may constitute a discretionary decision, such as potential approvals related to utility connections, it is expected that the City will use the EIR for the Richards Boulevard Office Complex project to support these decisions. Other agencies whose approval may be required for the project include, but may not be limited to: Central

Valley Regional Water Quality Control Board, California Department of Transportation, Sacramento Metropolitan Air Quality Management District, Regional Transit, and/or Sacramento Municipal Utility District.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will describe the direct and indirect environmental impacts of construction and operation of the Richards Boulevard Office Complex project. Demolition of the existing State Printing Plant and preparation of the site for future construction was addressed previously in the State Printing Plant and Textbook Warehouse Relocation and Demolition Project Initial Study/Mitigated Negative Declaration. The proposed project would be constructed after the project site is cleared in accordance with the description provided in the IS/MND.

It is anticipated that the EIR will address potential impacts associated with the proposed project in the issue areas described below. In addition, the EIR will evaluate alternatives, growth-inducing impacts, and cumulative impacts.

A California Supreme Court decision has resulted in changes to CEQA implementation with regard to the effects of existing environmental conditions on a project's future users or residents. The effects of the environment on a project are generally outside the scope of CEQA unless the project would exacerbate these conditions, as concluded by the *California Supreme Court (see California Building Industry Association [CBIA] v. Bay Area Air Quality Management District (BAAQMD) [2015] 62 Cal. 4th 369, 377)*. Changes to the State CEQA Guidelines to reflect this decision are in process by the State but have not been adopted. This information will be considered throughout the EIR and the proposed project's exposure to existing environmental conditions (e.g., existing noise impacts on the proposed project resulting from operation of the Union Pacific Railroad located south of the project site) will not be addressed as impacts in the environmental analysis.

AESTHETICS, LIGHT, AND GLARE

The proposed project site is located in central Sacramento and was previously developed with urban and industrial uses. The EIR will evaluate the project's potential impacts to the visual character of the developed environment, including building heights, mass, and setbacks; obstruction of important view corridors; and any potential increase in light and glare or change to shadow effects.

AIR QUALITY

The proposed project site, and areas that may be considered for related facilities (e.g., utility easements) are located within the Sacramento Valley Air Basin (SVAB), within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD), which administers local, State, and federal air quality management programs for Sacramento County. As is typical of construction projects, movement of equipment and wind over bare soils could generate airborne dust. Construction equipment would emit exhaust, including ozone precursors, particulate matter, and air toxics. Total regional operational emissions of criteria pollutants and precursors will be assessed based on project-specific information (i.e., traffic study, energy usage, building location) and compared to applicable SMAQMD significance thresholds for operational emissions. Short-term construction and long-term operational criteria pollutant emissions will be modeled using the latest version of the California Emissions Estimator Model (CalEEMod) and guidance found in the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Guide to Air Quality Assessment. If operational emissions are found to exceed the SMAQMD's significance threshold for NO_x, ROG, PM_{10} and $PM_{2.5}$, an Operational Air Quality Mitigation Plan (AQMP) will be prepared for the project to minimize impacts.

BIOLOGICAL RESOURCES

Sensitive biological resources are those protected by federal, State, or local resource conservation agencies and organizations. The project site was previously developed and demolition of the buildings was addressed in the prior environmental document. The project site is not anticipated to support sensitive habitats or habitat for any special-status species. The EIR will disclose the common biological resources in the area, including vegetation and wildlife, and if identified, the EIR will evaluate the project's potential to impact common and sensitive biological resources.

CULTURAL AND TRIBAL CULTURAL RESOURCES

The EIR will use the results of a historical resources analysis to determine potential impacts to cultural and tribal cultural resources. In addition, outreach to the Native American community and local historical groups will be conducted to solicit information on tribal cultural resources and any known cultural resources concerns or issues. There is the potential for buried prehistoric and historic-era resources within the project area, as there is in much of central Sacramento, and potential impacts to these resources during project construction will be considered in the EIR.

GEOLOGY, SOILS, AND SEISMICITY

No known faults or Alquist-Priolo special studies zones are located in or adjacent to the city of Sacramento; therefore, the proposed project site would not be subject to fault rupture. Site-specific geotechnical evaluation will be prepared and the project design will be required to comply with applicable seismic and other building codes. Existing geological risks will not be addressed in the EIR. Soils exposed during construction and grading can be susceptible to erosion and such erosion potential will also be evaluated in the EIR.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Although the project is proposed to be energy efficient and LEED certified, construction and operation of the project would result in the generation of greenhouse gas (GHG) emissions. Therefore, the EIR will quantify GHG emissions from construction and operation (i.e., building energy, vehicle trips) activities.

HAZARDS AND HAZARDOUS MATERIALS

A Phase I Environmental Site Assessment was prepared for the project site as part of the environmental review of the demolition of the site. The Phase I identifies known hazardous materials or sources of potential hazards (e.g., contaminated soil or groundwater) on the project site or vicinity. A Phase II Environmental Site Assessment was prepared to evaluate the potential for vapor intrusion into the Office of State Printing building near the former naphtha underground storage tank and to evaluate potential impacts from a suspected former solid waste disposal site in the southern portion of the property. An additional evaluation was conducted which confirmed the elevated arsenic and lead concentrations at the southern end of the Facilities Management Division portion of the existing site. Based on the findings and recommendations of these evaluations, the State is developing and, during demolition of the site, will implement a Soil and Groundwater Management Plan to ensure that contaminated soils and/or groundwater are removed and/or treated such that the remaining site meets, at a minimum, California Department of Toxic Substances Control-industrial limits for hazardous materials-related risks.

Depending on the State agencies located on this site, the proposed project could involve activities such as product testing that could generate hazardous emissions. In addition, the office building would involve the use and storage of small quantities of hazardous materials, such as cleaning materials, commonly used at office and commercial locations. The routine transport, use, and disposal of such materials would be limited. Federal, State, and local laws regulate the transport, use, and storage of hazardous materials. These regulations are designed to avoid significant hazards to the public and environment. Nonetheless, these issues will be analyzed further in the EIR.

HYDROLOGY AND WATER QUALITY

It is anticipated that the project's principal water quality concerns would be related to construction activities, particularly grading and excavation, which could result in increased erosion and sedimentation associated with stormwater runoff. Urban contaminants such as oil, grease, heavy metals, and pesticides and herbicides from proposed development could also be present in runoff. The project will need to comply with the requirements of the National Pollutant Discharge Elimination System General Permit for Construction Activities, including preparation and implementation of a Storm Water Pollution Prevention Plan and site-specific erosion control measures and Best Management Practices. Because the project site was previously developed with impervious surfaces, the project would not result in a substantial increase in ground coverage such that interference with groundwater recharge would occur.

LAND USE AND PLANNING

The project site is located in central Sacramento; construction and operation of new office buildings would not physically divide this community. The project would not develop new, lengthy walls or fences, or other physical impediments to cross-community access. The project may include new roadways or pedestrian walkways that would add access. Although the project site is located in the City of Sacramento, the site is under the jurisdiction of the State; therefore, the project is not subject to city land use plans or zoning. Nonetheless, in addition to evaluating consistency with the State's Capitol Area Plan, the EIR will discuss the project's consistency with relevant City of Sacramento planning policies. There are no habitat conservation plans or natural community conservation plans applicable to the project area.

NOISE AND VIBRATION

Implementing the proposed project would result in short-term and long-term increases in ambient noise levels. The EIR will include a description of the existing noise environment, including noise sources and sensitive receptors in the project area. The EIR will then assess potential short-term (i.e., construction) and long-term (i.e., operational) noise impacts to sensitive receptors. Operational noise changes may be generated by proposed stationary sources such as ground floor commercial, emergency backup generators, and parking facilities, as well as mobile sources such as vehicle trips.

POPULATION AND HOUSING

Because the purpose of the project includes office space, the project is expected to have a minor effect on local population and housing. However, where State employees move from other existing office space, the vacated office space would become available to others, potentially indirectly allowing for an overall increase in the number of employees in the central city or regional area. Therefore, the EIR will describe the existing population and housing characteristics of the region and central city area; identify potential effects of the project on population and housing, including the need for additional housing, effects on existing housing in the Capitol Area, and the effect on the local housing inventory.

PUBLIC SERVICES

The City of Sacramento Fire Department (SFD) provides fire protection and emergency medical services to the project area, including State-owned office buildings. Although the proposed project would be designed and constructed in compliance with all applicable fire protection regulations, the EIR will evaluate the project's potential impact to the provision of fire protection services. Police protection to the project site is provided by the California Highway Patrol (CHP) Office of Capitol Protection (OCP). Although it is anticipated that existing police services would be adequate to serve the proposed project, the EIR will evaluate the project impact to law enforcement. The potential net increase in office space and associated employees in the central city will also be considered in evaluating the project's potential impacts to the provision of parks and recreation facilities. Because the project does not propose removal or construction of housing, it is not anticipated to have a material impact on schools.

TRANSPORTATION AND CIRCULATION

The project would increase the total amount of office space in central Sacramento once the proposed project is complete. An increase in occupied office space would cause a commensurate increase in traffic on local roadways and demand for transit and other modes of travel. The EIR will evaluate the project's construction-period and operational AM and PM peak hour trip generation and how the project may affect delays and level of service (LOS) at key intersections. Vehicle miles traveled (VMT) and access to the project site will also be assessed. The EIR will analyze project impacts on the roadway, bicycle, pedestrian, and transit systems.

UTILITIES, INFRASTRUCTURE, AND ENERGY

The EIR will evaluate the project-related impacts to infrastructure and capacity of water supply and treatment, sewer and wastewater treatment, drainage and stormwater, electricity, and natural gas. Wastewater treatment and disposal for the proposed project would be provided by the Sacramento Regional County Sanitation District's (RegionalSan) Sacramento Regional Wastewater Treatment Plant (SRWTP). Under existing conditions, wastewater generated in the project area is conveyed to the SRWTP by the City's combined stormwater runoff and sanitary sewer system (CSS). The proposed project may potentially contribute to a net increase in the volume of wastewater flows entering the CSS and arriving at the SRWTP for treatment. The City of Sacramento is the water supplier for the project site; any project-related increase in water demand will be evaluated in the EIR to determine if there is sufficient water supply. Heating and cooling for the new building may be supplied by steam and chilled water delivered via underground pipeline from a new central plant located on site. If the project requires any new or modified utility infrastructure, the environmental effects of that utility work will be evaluated in the EIR.

CUMULATIVE IMPACTS

Implementation of the proposed project could potentially result in significant impacts to the above resource areas. When taken together with the effects of past projects, other current projects, and probable future projects, the project's contribution to the overall cumulative effect of all these activities could be considerable. Cumulative impacts and the project's contribution to those impacts will be evaluated in the EIR.

ALTERNATIVES

In accordance with the State CEQA Guidelines (14 CCR Section 15126.6), the EIR will describe a range of reasonable alternatives to the proposed project that are capable of meeting most of the project's objectives, and that would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will provide an analysis of a No Project Alternative and will also identify the environmentally superior alternative.

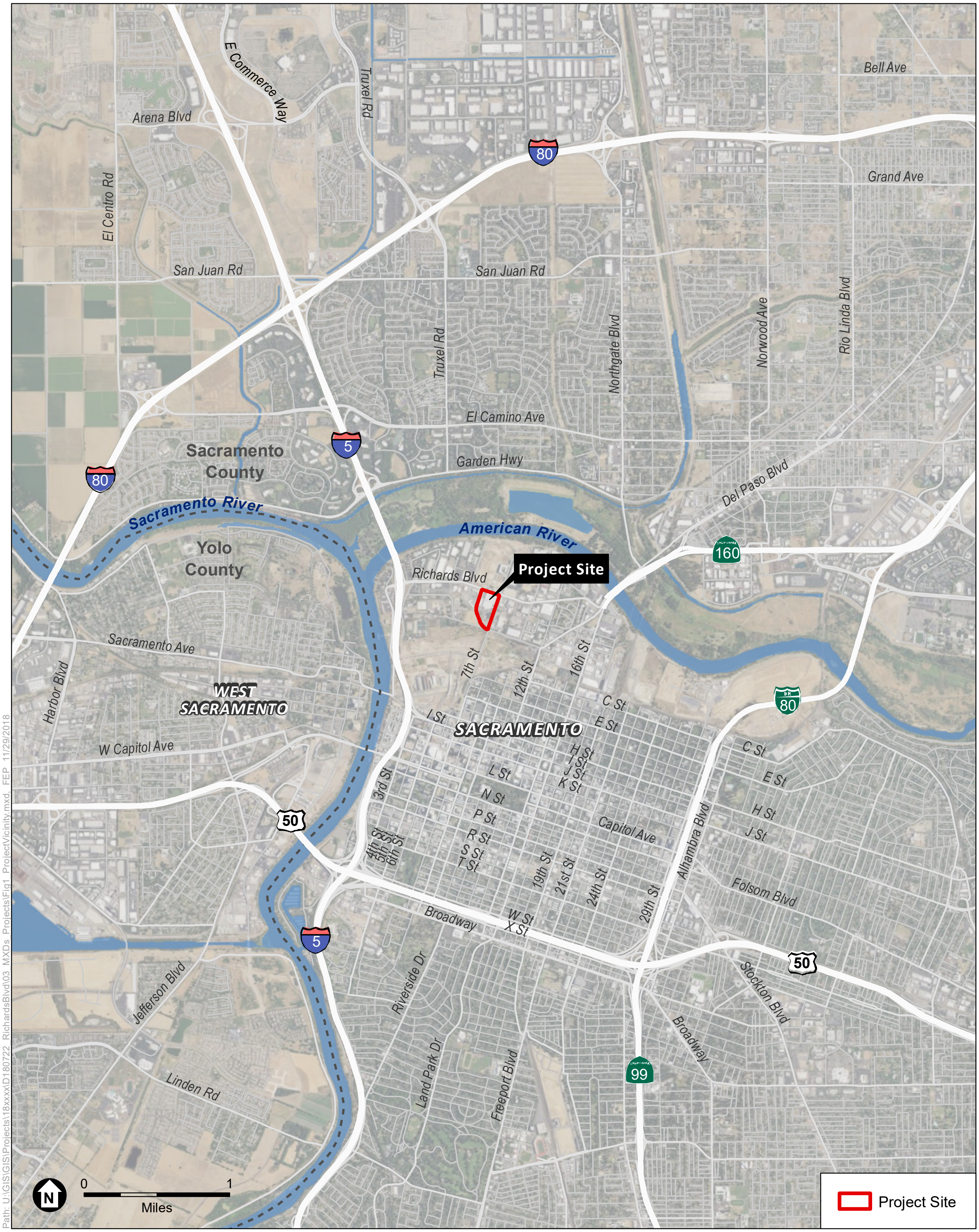
PUBLIC REVIEW PERIOD

This Notice of Preparation is being circulated for public review and comment for a period of 30 days beginning on December 14, 2018. An open house format scoping meeting will be held from 4:00 PM to 7:00 PM on Thursday, January 10, 2017 at the Smythe Academy Middle School Cafeteria, located at 700 Dos Rios St, Sacramento, CA 95811. Agencies and individuals may attend the scoping meeting at any time to obtain information on the project, ask questions of project team members, and provide comments. A brief presentation on the proposed project and the CEQA process will be given hourly. Written comments will be accepted by DGS through 5:00 PM on January 14, 2019. Comments must be delivered or mailed to Ms. Stephanie Coleman at the address listed above.

Copies of the Notice of Preparation may be reviewed at the following locations:

- Online at: http://www.dgs.ca.gov/resd/Programs/EnvironmentalServicesSection/CaliforniaEnvironmentalQualityAct.aspx
- Sacramento Central Library at 828 I Street during library hours;
- Department of General Services, Environmental Services Section between 8:00AM and 4:30PM; or
- Request a copy by email at environmental@dgs.ca.gov.

Your views and comments on how the project may affect the environment are welcomed. Please contact Ms. Coleman if you have any questions about the environmental review process for the proposed Richards Boulevard Office Complex project.



Path: U:\GIS\GIS\Projects\18xxxx\D180722_RichardsBlvd\03_MXDs_Projects\Fig1_ProjectVicinity.mxd, FEP 11/29/2018

SOURCE: Esri, 2012; USDA, 2016; ESA, 2018

Richards Boulevard State Office Complex

Figure 1
Project Vicinity

Path: U:\GIS\GIS\Projects\18xxxx\D180722_RichardsBlvd\03_MXDs_Projects\Fig2_ProjectSite.mxd, FEP 11/29/2018

SOURCE: USDA, 2016; HGA, 2018; ESA, 2018

Richards Boulevard State Office Complex

Figure 2
Project Site

ESA

Appendix B

NOP Scoping Comment Letters

NOP Scoping Summary

As part of the scoping process for this environmental impact report (EIR), a Notice of Preparation (NOP) was prepared to inform the public of the lead agency's intent to prepare an EIR pursuant to the California Environmental Quality Act (CEQA). An NOP for an EIR was issued by the California Department of General Services (DGS) on December 14, 2018 for preparation of an Environmental Impact Report (EIR) for the proposed Richards Boulevard Office Complex (RBOC) project (project), located in the central city of Sacramento. The NOP was sent to the California State Clearinghouse, federal, state, and local agencies, and members of the public. A public scoping meeting was held from 4:00 PM to 7:00 PM on Thursday, January 10, 2017 at the Smythe Academy Middle School Cafeteria, located at 700 Dos Rios St, Sacramento, CA 95811 to provide the public and public agencies with the opportunity to learn more about the project and to provide a venue to submit comments regarding the issues that should be addressed in the EIR. The DGS staff and EIR consultant staff were available to describe the project elements and EIR process and to disclose and discuss key environmental issues identified in the NOP. No members of the public or agency stakeholders attended the scoping meeting; therefore, no comments were received during the scoping meeting.

Table B-1 lists the scoping comments (both written and oral) received during the NOP comment period (December 14, 2018 through January 14, 2019). The table lists the commenter, the date the comment was received, and a summary of the relevant EIR section/s in which the comments are addressed. All written NOP comment letters in their entirety are provided in this Appendix.

Comments Related to the Scope of the Project

As listed in Table B-1, a total of six scoping comments letters were received related to the RBOC project. No verbal comments were provided at the scoping meeting.

All six comment letters were from agencies: California Department of Fish and Wildlife (CDFW), California Highway Patrol (CHP) Facilities Section, California Public Utilities Commission (CPUC), California Department of Transportation (Caltrans), City of Sacramento, the Sacramento Municipal Utility District (SMUD), and the Central Valley Regional Water Quality Control Board (CVRWQCB). Comments and key issues raised were generally focused on traffic impact evaluation, energy efficiency, connection to City utilities, underground transmission and distribution line easements, utility line routing, electrical load needs/requirements, mitigation of any potential impacts on fish and wildlife resources, protecting water quality, and the overall design of the project for creating better connectivity to the surrounding communities, and urban character that is safe and attractive to pedestrians and bicyclists.

TABLE B-1
SUMMARY OF COMMENTS ON NOTICE OF PREPARATION FOR RBOC PROJECT

Name of Author	Agency / Organization	Date Received	Relevant EIR Section(s)
Dylan Wood	California Department of Fish and Wildlife (CDFW)	12/17/2018	Biological Resources
Tracy Carter	California Highway Patrol (CHP) Facilities Section	01/09/2019	Public Services
Matt Cervantes	California Public Utilities Commission (CPUC)	01/11/2019	Transportation and Circulation
Alex Fong	California Department of Transportation (Caltrans)	01/14/2019	Transportation and Circulation
Karlo Felix	City of Sacramento	01/14/2019	Land Use and Planning, Transportation and Circulation, Utilities and Infrastructure
Nicole Goi	Sacramento Municipal Utility District (SMUD)	01/14/2019	Energy, Utilities and Infrastructure
Jordan Hensley	Central Valley Regional Water Quality Control Board (CVRWQCB)	01/16/2019	Hydrology

From: Wood, Dylan A@Wildlife [mailto:Dylan.A.Wood@wildlife.ca.gov]
Sent: Monday, December 17, 2018 5:17 PM
To: Coleman, Stephanie@DGS <Stephanie.Coleman@dgs.ca.gov>
Cc: Wildlife R2 CEQA <R2CEQA@wildlife.ca.gov>
Subject: Comments on the Notice of Preparation for the Richards Boulevard Office Complex (SCH: 2018122034)

Ms. Coleman,

The California Department of Fish and Wildlife (CDFW) has received and reviewed the **Notice of Preparation** for the **Richards Boulevard Office Complex** (Project) in Sacramento County. CDFW offers the comments and recommendations below to assist the Lead Agency in adequately identifying and, where appropriate, mitigating the Project's significant or potentially significant, direct and indirect impacts on fish and wildlife resources.

CDFW has identified potential habitat for nesting birds and birds of prey within the Project area. CDFW recommends that the Environmental Impact Report disclose all potential activities that may impact nesting birds within the Project footprint and its close vicinity. This may include identifying trees within the Project footprint that will be removed and an analysis of impacts to nesting sites near the project site that may be affected by increase in construction, human activity, etc. Please note that some birds such as burrowing owl (*Athene cunicularia*) may nest underground or may inhabit piles of debris left over from the previous demolition. CDFW recommends including measures to reduce potential impacts by including nesting bird surveys and if birds are found minimization measures such biological monitoring, installation of noise attenuation barriers or work windows.

I am available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts, please feel free to give me a call at 916-358-2384 or by email at dylan.a.wood@wildlife.ca.gov. Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife.

Sincerely,

Dylan Wood
California Department of Fish and Wildlife
Environmental Scientist
(916) 358-2384

CALIFORNIA
Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Central Valley Regional Water Quality Control Board

REC'D DGS
REAL ESTATE SERVICES
PROJ MGMT & DEVELOPMENT
2019 JAN 16 P 1:39

7 January 2019

Stephanie Coleman
Department of General Services
707 Third Street, 4th Floor, MS509
West Sacramento, CA 95605

CERTIFIED MAIL
7018 1830 0001 0062 6573

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, RICHARDS BOULEVARD OFFICE COMPLEX PROJECT, SCH#2018122034, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 14 December 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Richards Boulevard Office Complex Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

---

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/ or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 11-100 acres are currently $1,277 + $8.53/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order.

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4812 or Jordan.Hensley@waterboards.ca.gov.

Jordan Hensley
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

From: Coleman, Stephanie@DGS
To: Christina Erwin; Elizabeth Boyd
Subject: FW: Notice of Preparation of an Environmental Impact Report for the Richards Boulevard Office Complex Project, Sacramento, California
Date: Wednesday, January 9, 2019 12:22:59 PM
Attachments: 2018122034 Documents.pdf
Area-Section EIR RESPONSE CHECKLIST.docx

FYI

STEPHANIE COLEMAN | Project Management and Development Branch | Environmental Section
Senior Environmental Planner | **Environmental Services** | o **916.376.1602** c **916-217-6185**| Stephanie.coleman@dgs.ca.gov

---

From: Carter, Tracey@CHP [mailto:Tracey.Carter@chp.ca.gov]
Sent: Wednesday, January 09, 2019 12:18 PM
To: Coleman, Stephanie@DGS <Stephanie.Coleman@dgs.ca.gov>
Cc: Dobson, Denise@CHP <DDobson@chp.ca.gov>; Roberts, Ken C@CHP <KenRoberts@chp.ca.gov>
Subject: Notice of Preparation of an Environmental Impact Report for the Richards Boulevard Office Complex Project, Sacramento, California

Good afternoon Stephanie,

Facilities Section has reviewed the Notice of Preparation environmental impact document from the State Clearinghouse. Based on the information provided, no impact is foreseen to the day to day operations and/or public safety to the California Highway Patrol Headquarter campus by SCH#2018122034.

Please feel free to contact me if you have any questions or need further information.

Thank you,
Tracey Carter

Tracey Carter
CHP Facilities Section
601 North 7th Street
Sacramento, CA 95811
Main: 916.843.3800
Desk: 916.843.3824

State of California **Transportation Agency**

Memorandum

Date: January 4, 2019

To: Protective Services Division (020)
Facilities Section (078)

From: **DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**
Special Projects Section

File No.: 063.A17617.A14077.Nop.Doc

Subject: ENVIRONMENTAL DOCUMENT REVIEW AND RESPONSE
SCH# 2018122034

Special Projects Section (SPS) recently received the referenced "Notice of Preparation" environmental impact document from the State Clearinghouse (SCH).

Due to the project's geographical proximity to the Protective Services Division and to Facilities Section, please use the attached checklist to assess its potential impact to local Area operations and public safety. If it is determined that departmental input is advisable, your written comments referencing the above SCH number must be mailed directly to the lead agency, with a copy to the State Clearinghouse at 1400 Tenth Street, Room 121, Sacramento, CA 95814. Your written comments must be received by the lead agency no later than **January 14, 2019**. For reference, additional information can be found in General Order 41.2, Environmental Impact Documents.

For project tracking purposes, SPS must be notified of Protective Services Division and Facilities Section assessment of the project (including negative reports). Via e-mail, please forward a copy of Area's response to Staff Services Manager I Denise Dobson, at ddobson@chp.ca.gov. For questions or concerns, please contact Ms. Denise Dobson at (916) 843-3370.

J. S. MASON, SSM III
Commander

Attachments: Checklist
Project File

cc: Administrative Services Division

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

December 14, 2018

To: Reviewing Agencies

Re: Richards Boulevard Office Complex Project
SCH# 2018122034

Attached for your review and comment is the Notice of Preparation (NOP) for the Richards Boulevard Office Complex Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Stephanie Coleman, Sr PM
Department of General Services
707 Third Street, 4th Floor, MS509
West Sacramento, CA 95605

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# **2018122034**
Project Title Richards Boulevard Office Complex Project
Lead Agency General Services, Department of

Type **NOP** Notice of Preparation

Description While the exact design will be developed through a design-build process, DGS anticipates that the proposed project would include approx 1.3 million gross square feet across three mid-rise office buildings and one high-rise (up to 29 stories) office building. Project amenities would include a cafeteria, auditorium, fitness center, and childcare center. Site improvements may include a parking garage and surface parking spaces, open space, and pedestrian walkways. Building designs will target leadership in energy and environmental design (LEED) Silver level, including Zero Net Energy. Some off-site utility improvements may be made to connect the project site to utility infrastructure.

Lead Agency Contact

Name Stephanie Coleman, Sr PM
Agency Department of General Services
Phone (916) 376-1602 ***Fax***
email
Address 707 Third Street, 4th Floor, MS509
City West Sacramento ***State*** CA ***Zip*** 95605

Project Location

County Sacramento
City Sacramento
Region
Cross Streets North 7th St and Richards Blvd
Lat / Long 38° 35' 43.1" N / 121° 29' 34.8" W
Parcel No. 001-0210-010-0000/-054-0000
Township ***Range*** ***Section*** ***Base***

Proximity to:

Highways 160,99
Airports
Railways SPRR
Waterways American River/Sacramento River
Schools Smythe Academy
Land Use state printing plant and textbook warehouse/office building and residential mixed use/urban center high

---

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Recreation/Parks; Sewer Capacity; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

---

Reviewing Agencies Resources Agency; Central Valley Flood Protection Board; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 2; Delta Protection Commission; Delta Stewardship Council; Native American Heritage Commission; Public Utilities Commission; Caltrans, District 3 N; California Highway Patrol; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 5 (Sacramento)

Date Received 12/14/2018 ***Start of Review*** 12/14/2018 ***End of Review*** 01/14/2019

Note: Blanks in data fields result from insufficient information provided by lead agency.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2018122034

Project Title: Richards Boulevard Office Complex Project
Lead Agency: California Department of General Services
Contact Person: Stephanie Coleman, Sr PM
Mailing Address: 707 Third Street, 4th Floor, MS509
Phone: 916-376-1602
City: West Sacramento
Zip: 95605
County: Sacramento

Project Location: County: Sacramento
City/Nearest Community: Sacramento
Cross Streets: North 7th Street and Richards Boulevard
Zip Code: 95814
Lat. / Long. (degrees, minutes, and seconds): 38° 35′ 43.1″ N/ 121° 29′ 34.8″ W
Total Acres:
Assessor's Parcel No.: 001-0210-010-0000/001-0210-054-0000
Section:
Twp.:
Range:
Base:
Within 2 Miles: State Hwy #: 160, 99
Waterways: American River/Sacramento River
Airports: NA
Railways: Southern Pacific
Schools: Smythe Academy

Document Type:

CEQA:
☒ NOP
☐ Early Cons
☐ Neg Dec
☐ Mit Neg Dec
☐ Draft EIR
☐ Supplement/Subsequent EIR
(Prior SCH No.)
Other

NEPA:
☐ NOI
☐ EA
☐ Draft EIS
☐ FONSI

Other:
☐ Joint Document
☐ Final Document
☐ Other

Governor's Office of Planning & Research
DEC 14 2018
STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update
☐ General Plan Amendment
☐ General Plan Element
☐ Community Plan
☐ Specific Plan
☐ Master Plan
☐ Planned Unit Development
☐ Site Plan
☐ Rezone
☐ Prezone
☐ Use Permit
☐ Land Division (Subdivision, etc.)
☐ Annexation
☐ Redevelopment
☐ Coastal Permit
☐ Other

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☒ Commercial: Sq.ft. 1.3M Acres 17.3 Employees 5,900
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational
☐ Recreational
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☐ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☒ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☐ Forest Land/Fire Hazard
☒ Geologic/Seismic
☐ Minerals
☒ Noise
☒ Population/Housing Balance
☐ Public Services/Facilities
☒ Recreation/Parks
☐ Schools/Universities
☐ Septic Systems
☒ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducement
☒ Land Use
☒ Cumulative Effects
☐ Other:

Present Land Use/Zoning/General Plan Designation:

State Printing Plant and Textbook Warehouse/Office Building and Residential Mixed Use/Urban Center High

Project Description: *(please use a separate page if necessary)*

While the exact design will be developed through a design-build process, DGS anticipates that the proposed project would include approximately 1.3 million gross square feet across three mid-rise office buildings and one high-rise (up to 29 stories) office building. Project amenities would include a cafeteria, auditorium, fitness center, and childcare center. Site improvements may include a parking garage and surface parking spaces, open space, and pedestrian walkways. Building designs will target leadership in energy and environmental design (LEED) Silver level, including Zero Net Energy. Some off-site utility improvements may be made to connect the project site to utility infrastructure.

Note: The state Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List

County: Sacramento

SCH# 2018122034

esources Agency

Resources Agency
Nadell Gayou

☐ **Dept. of Boating & Waterways**
Denise Peterson

☐ **California Coastal Commission**
Allyson Hitt

☐ **Colorado River Board**
Elsa Contreras

☐ **Dept. of Conservation**
Crina Chan

☐ **Cal Fire**
Dan Foster

■ **Central Valley Flood Protection Board**
James Herota

☐ **Office of Historic Preservation**
Ron Parsons

Dept of Parks & Recreation
Environmental Stewardship Section

☐ **S.F. Bay Conservation & Dev't. Comm.**
Steve Goldbeck

■ **Dept. of Water Resources**
Resources Agency
Nadell Gayou

Fish and Game

☐ **Depart. of Fish & Wildlife**
Scott Flint
Environmental Services Division

☐ **Fish & Wildlife Region 1**
Curt Babcock

☐ **Fish & Wildlife Region 1E**
Laurie Harnsberger

■ **Fish & Wildlife Region 2**
Jeff Drongesen

☐ **Fish & Wildlife Region 3**
Craig Weightman

☐ **Fish & Wildlife Region 4**
Julie Vance

☐ **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation Program

☐ **Fish & Wildlife Region 6**
Tiffany Ellis
Habitat Conservation Program

☐ **Fish & Wildlife Region 6 I/M**
Heidi Calvert
Inyo/Mono, Habitat Conservation Program

☐ **Dept. of Fish & Wildlife M**
William Paznokas
Marine Region

Other Departments

☐ **California Department of Education**
Lesley Taylor

☐ **OES (Office of Emergency Services)**
Monique Wilber

☐ **Food & Agriculture**
Sandra Schubert
Dept. of Food and Agriculture

☐ **Dept. of General Services**
Cathy Buck
Environmental Services Section

☐ **Housing & Comm. Dev.**
CEQA Coordinator
Housing Policy Division

Independent Commissions,Boards

■ **Delta Protection Commission**
Erik Vink

■ **Delta Stewardship Council**
Anthony Navasero

☐ **California Energy Commission**
Eric Knight

■ **Native American Heritage Comm.**
Debbie Treadway

■ **Public Utilities Commission**
Supervisor

☐ **Santa Monica Bay Restoration**
Guangyu Wang

☐ **State Lands Commission**
Jennifer Deleong

☐ **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Cal State Transportation Agency CalSTA

☐ **Caltrans - Division of Aeronautics**
Philip Crimmins

☐ **Caltrans – Planning HQ LD-IGR**
Christian Bushong

■ **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects

Dept. of Transportation

☐ **Caltrans, District 1**
Rex Jackman

☐ **Caltrans, District 2**
Marcelino Gonzalez

■ **Caltrans, District 3**
Susan Zanchi

☐ **Caltrans, District 4**
Patricia Maurice

☐ **Caltrans, District 5**
Larry Newland

☐ **Caltrans, District 6**
Michael Navarro

☐ **Caltrans, District 7**
Dianna Watson

☐ **Caltrans, District 8**
Mark Roberts

☐ **Caltrans, District 9**
Gayle Rosander

☐ **Caltrans, District 10**
Tom Dumas

☐ **Caltrans, District 11**
Jacob Armstrong

☐ **Caltrans, District 12**
Maureen El Harake

Cal EPA

Air Resources Board

☐ **Airport & Freight**
Jack Wursten

☐ **Transportation Projects**
Nesamani Kalandiyur

☐ **Industrial/Energy Projects**
Mike Tollstrup

☐ **California Department of Resources, Recycling & Recovery**
Kevin Taylor/Jeff Esquivel

☐ **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance

☐ **State Water Resources Control Board**
Cindy Forbes – Asst Deputy
Division of Drinking Water

☐ **State Water Resources Control Board**
Div. Drinking Water #________

■ **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality

☐ **State Water Resouces Control Board**
Phil Crader
Division of Water Rights

☐ **Dept. of Toxic Substances Control Reg. #________**
CEQA Tracking Center

☐ **Department of Pesticide Regulation**
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

☐ **RWQCB 1**
Cathleen Hudson
North Coast Region (1)

☐ **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)

☐ **RWQCB 3**
Central Coast Region (3)

☐ **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)

■ **RWQCB 5S**
Central Valley Region (5)

☐ **RWQCB 5F**
Central Valley Region (5)
Fresno Branch Office

☐ **RWQCB 5R**
Central Valley Region (5)
Redding Branch Office

☐ **RWQCB 6**
Lahontan Region (6)

☐ **RWQCB 6V**
Lahontan Region (6)
Victorville Branch Office

☐ **RWQCB 7**
Colorado River Basin Region (7)

☐ **RWQCB 8**
Santa Ana Region (8)

☐ **RWQCB 9**
San Diego Region (9)

☐ **Other** ________________

____

____

☐ ________________
Conservancy

Last Updated 5/22/18

NOTICE OF PREPARATION

Date:	December 14, 2018
To:	Responsible Agencies, Organizations, and Interested Parties
Subject:	Notice of Preparation of an Environment Impact Report for the Richards Boulevard Office Complex Project, Sacramento, California
Lead Agency:	State of California Department of General Services
Contact:	Stephanie Coleman, Senior Project Manager Department of General Services, Environmental Services Section Mailing Address: P.O. Box 989052, West Sacramento, CA 95798 Street Address: 707 3rd Street, 4th Floor, West Sacramento, CA 95605 Phone: (916) 376-1602 Email: stephanie.coleman@dgs.ca.gov
Comment Period:	*December 14, 2018 – January 14, 2019*

PURPOSE OF NOTICE

The California Department of General Services (DGS) is the lead agency responsible for preparation of an Environmental Impact Report (EIR) for the proposed Richards Boulevard Office Complex project (RBOC or proposed project), located in central Sacramento.

Pursuant to provisions of the California Environmental Quality Act (CEQA), DGS has prepared this Notice of Preparation (NOP) for the proposed project. Once a decision is made to prepare an EIR, the lead agency must prepare a NOP to inform all responsible and trustee agencies that an EIR will be prepared (State CEQA Guidelines Section 15082). The purpose of this NOP is to provide agencies, interested parties, and organizations with sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of information to be included in the EIR.

PROJECT LOCATION

The proposed project site is located on a site in the River District of the city of Sacramento (Figure 1) which currently houses the State Printing Plant and Textbook Warehouse. The site is bounded by Richards Boulevard on the north, North 7th Street on the east, and North B Street on the south, and is immediately east of the Coastline Equipment Crane Division Building and the Capital Investments & Loans Building (Figure 2).

PROJECT DESCRIPTION

The purpose of the Richards Boulevard Office Complex project is to consolidate State office space and address State office space deficiencies in downtown Sacramento and to provide a modern, efficient, and safe environment for State employees and the public they serve.

While the exact design will be developed through a design-build process, DGS anticipates that the proposed project would include approximately 1.3 million gross square feet across three mid-rise office buildings and one high-rise (up to 29 stories) office building. Project amenities would include a cafeteria, auditorium, fitness center, and childcare center. Site improvements may include a parking garage and surface parking spaces, open space, and pedestrian walkways. Building designs will target leadership in energy and environmental design (LEED) Silver level, including Zero Net Energy. Some off-site utility improvements may be made to connect the project site to utility infrastructure.

PROJECT OBJECTIVES

The objectives of the Richards Boulevard Office Complex project are to:

- Consolidate State office space and address State office space deficiencies in downtown Sacramento, while prioritizing building on underutilized State property;
- Accommodate staff from State-owned office buildings targeted for renovation or replacement in such a way as to facilitate the vacation, eventual renovation, and re-occupation of these structures while minimizing disruption to State agencies;
- Provide a modern, efficient, and safe environment for State employees and the public they serve;
- Integrate the new State development with the existing neighborhood;
- Develop a sustainable and energy-efficient building(s);
- Encourage and support the use of alternative commute modes by designing the project to have easy access to multiple transit modes; and
- Maximize the effectiveness of the design-build project delivery method by maintaining sufficient flexibility in the performance criteria to support innovation in the design competition.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project (State CEQA Guidelines Section 15381). Discretionary approval power may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. It is anticipated that approval from various City of Sacramento departments will be required to complete construction of the Richards Boulevard Office Complex Project within City right-of-way. Where city approval may constitute a discretionary decision, such as potential approvals related to utility connections, it is expected that the City will use the EIR for the Richards Boulevard Office Complex project to support these decisions. Other agencies whose approval may be required for the project include, but may not be limited to: Central

Valley Regional Water Quality Control Board, California Department of Transportation, Sacramento Metropolitan Air Quality Management District, Regional Transit, and/or Sacramento Municipal Utility District.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will describe the direct and indirect environmental impacts of construction and operation of the Richards Boulevard Office Complex project. Demolition of the existing State Printing Plant and preparation of the site for future construction was addressed previously in the State Printing Plant and Textbook Warehouse Relocation and Demolition Project Initial Study/Mitigated Negative Declaration. The proposed project would be constructed after the project site is cleared in accordance with the description provided in the IS/MND.

It is anticipated that the EIR will address potential impacts associated with the proposed project in the issue areas described below. In addition, the EIR will evaluate alternatives, growth-inducing impacts, and cumulative impacts.

A California Supreme Court decision has resulted in changes to CEQA implementation with regard to the effects of existing environmental conditions on a project's future users or residents. The effects of the environment on a project are generally outside the scope of CEQA unless the project would exacerbate these conditions, as concluded by the *California Supreme Court (see California Building Industry Association [CBIA] v. Bay Area Air Quality Management District (BAAQMD) [2015] 62 Cal. 4th 369, 377).* Changes to the State CEQA Guidelines to reflect this decision are in process by the State but have not been adopted. This information will be considered throughout the EIR and the proposed project's exposure to existing environmental conditions (e.g., existing noise impacts on the proposed project resulting from operation of the Union Pacific Railroad located south of the project site) will not be addressed as impacts in the environmental analysis.

AESTHETICS, LIGHT, AND GLARE

The proposed project site is located in central Sacramento and was previously developed with urban and industrial uses. The EIR will evaluate the project's potential impacts to the visual character of the developed environment, including building heights, mass, and setbacks; obstruction of important view corridors; and any potential increase in light and glare or change to shadow effects.

AIR QUALITY

The proposed project site, and areas that may be considered for related facilities (e.g., utility easements) are located within the Sacramento Valley Air Basin (SVAB), within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD), which administers local, State, and federal air quality management programs for Sacramento County. As is typical of construction projects, movement of equipment and wind over bare soils could generate airborne dust. Construction equipment would emit exhaust, including ozone precursors, particulate matter, and air toxics. Total regional operational emissions of criteria pollutants and precursors will be assessed based on project-specific information (i.e., traffic study, energy usage, building location) and compared to applicable SMAQMD significance thresholds for operational emissions. Short-term construction and long-term operational criteria pollutant emissions will be modeled using the latest version of the California Emissions Estimator Model (CalEEMod) and guidance found in the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Guide to Air Quality Assessment. If operational emissions are found to exceed the SMAQMD's significance threshold for NO_x, ROG, PM_{10} and $PM_{2.5}$, an Operational Air Quality Mitigation Plan (AQMP) will be prepared for the project to minimize impacts.

BIOLOGICAL RESOURCES

Sensitive biological resources are those protected by federal, State, or local resource conservation agencies and organizations. The project site was previously developed and demolition of the buildings was addressed in the prior environmental document. The project site is not anticipated to support sensitive habitats or habitat for any special-status species. The EIR will disclose the common biological resources in the area, including vegetation and wildlife, and if identified, the EIR will evaluate the project's potential to impact common and sensitive biological resources.

CULTURAL AND TRIBAL CULTURAL RESOURCES

The EIR will use the results of a historical resources analysis to determine potential impacts to cultural and tribal cultural resources. In addition, outreach to the Native American community and local historical groups will be conducted to solicit information on tribal cultural resources and any known cultural resources concerns or issues. There is the potential for buried prehistoric and historic-era resources within the project area, as there is in much of central Sacramento, and potential impacts to these resources during project construction will be considered in the EIR.

GEOLOGY, SOILS, AND SEISMICITY

No known faults or Alquist-Priolo special studies zones are located in or adjacent to the city of Sacramento; therefore, the proposed project site would not be subject to fault rupture. Site-specific geotechnical evaluation will be prepared and the project design will be required to comply with applicable seismic and other building codes. Existing geological risks will not be addressed in the EIR. Soils exposed during construction and grading can be susceptible to erosion and such erosion potential will also be evaluated in the EIR.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Although the project is proposed to be energy efficient and LEED certified, construction and operation of the project would result in the generation of greenhouse gas (GHG) emissions. Therefore, the EIR will quantify GHG emissions from construction and operation (i.e., building energy, vehicle trips) activities.

HAZARDS AND HAZARDOUS MATERIALS

A Phase I Environmental Site Assessment was prepared for the project site as part of the environmental review of the demolition of the site. The Phase I identifies known hazardous materials or sources of potential hazards (e.g., contaminated soil or groundwater) on the project site or vicinity. A Phase II Environmental Site Assessment was prepared to evaluate the potential for vapor intrusion into the Office of State Printing building near the former naphtha underground storage tank and to evaluate potential impacts from a suspected former solid waste disposal site in the southern portion of the property. An additional evaluation was conducted which confirmed the elevated arsenic and lead concentrations at the southern end of the Facilities Management Division portion of the existing site. Based on the findings and recommendations of these evaluations, the State is developing and, during demolition of the site, will implement a Soil and Groundwater Management Plan to ensure that contaminated soils and/or groundwater are removed and/or treated such that the remaining site meets, at a minimum, California Department of Toxic Substances Control-industrial limits for hazardous materials-related risks.

Depending on the State agencies located on this site, the proposed project could involve activities such as product testing that could generate hazardous emissions. In addition, the office building would involve the use and storage of small quantities of hazardous materials, such as cleaning materials, commonly used at office and commercial locations. The routine transport, use, and disposal of such materials would be limited. Federal, State, and local laws regulate the transport, use, and storage of hazardous materials. These regulations are designed to avoid significant hazards to the public and environment. Nonetheless, these issues will be analyzed further in the EIR.

HYDROLOGY AND WATER QUALITY

It is anticipated that the project's principal water quality concerns would be related to construction activities, particularly grading and excavation, which could result in increased erosion and sedimentation associated with stormwater runoff. Urban contaminants such as oil, grease, heavy metals, and pesticides and herbicides from proposed development could also be present in runoff. The project will need to comply with the requirements of the National Pollutant Discharge Elimination System General Permit for Construction Activities, including preparation and implementation of a Storm Water Pollution Prevention Plan and site-specific erosion control measures and Best Management Practices. Because the project site was previously developed with impervious surfaces, the project would not result in a substantial increase in ground coverage such that interference with groundwater recharge would occur.

LAND USE AND PLANNING

The project site is located in central Sacramento; construction and operation of new office buildings would not physically divide this community. The project would not develop new, lengthy walls or fences, or other physical impediments to cross-community access. The project may include new roadways or pedestrian walkways that would add access. Although the project site is located in the City of Sacramento, the site is under the jurisdiction of the State; therefore, the project is not subject to city land use plans or zoning. Nonetheless, in addition to evaluating consistency with the State's Capitol Area Plan, the EIR will discuss the project's consistency with relevant City of Sacramento planning policies. There are no habitat conservation plans or natural community conservation plans applicable to the project area.

NOISE AND VIBRATION

Implementing the proposed project would result in short-term and long-term increases in ambient noise levels. The EIR will include a description of the existing noise environment, including noise sources and sensitive receptors in the project area. The EIR will then assess potential short-term (i.e., construction) and long-term (i.e., operational) noise impacts to sensitive receptors. Operational noise changes may be generated by proposed stationary sources such as ground floor commercial, emergency backup generators, and parking facilities, as well as mobile sources such as vehicle trips.

POPULATION AND HOUSING

Because the purpose of the project includes office space, the project is expected to have a minor effect on local population and housing. However, where State employees move from other existing office space, the vacated office space would become available to others, potentially indirectly allowing for an overall increase in the number of employees in the central city or regional area. Therefore, the EIR will describe the existing population and housing characteristics of the region and central city area; identify potential effects of the project on population and housing, including the need for additional housing, effects on existing housing in the Capitol Area, and the effect on the local housing inventory.

PUBLIC SERVICES

The City of Sacramento Fire Department (SFD) provides fire protection and emergency medical services to the project area, including State-owned office buildings. Although the proposed project would be designed and constructed in compliance with all applicable fire protection regulations, the EIR will evaluate the project's potential impact to the provision of fire protection services. Police protection to the project site is provided by the California Highway Patrol (CHP) Office of Capitol Protection (OCP). Although it is anticipated that existing police services would be adequate to serve the proposed project, the EIR will evaluate the project impact to law enforcement. The potential net increase in office space and associated employees in the central city will also be considered in evaluating the project's potential impacts to the provision of parks and recreation facilities. Because the project does not propose removal or construction of housing, it is not anticipated to have a material impact on schools.

TRANSPORTATION AND CIRCULATION

The project would increase the total amount of office space in central Sacramento once the proposed project is complete. An increase in occupied office space would cause a commensurate increase in traffic on local roadways and demand for transit and other modes of travel. The EIR will evaluate the project's construction-period and operational AM and PM peak hour trip generation and how the project may affect delays and level of service (LOS) at key intersections. Vehicle miles traveled (VMT) and access to the project site will also be assessed. The EIR will analyze project impacts on the roadway, bicycle, pedestrian, and transit systems.

UTILITIES, INFRASTRUCTURE, AND ENERGY

The EIR will evaluate the project-related impacts to infrastructure and capacity of water supply and treatment, sewer and wastewater treatment, drainage and stormwater, electricity, and natural gas. Wastewater treatment and disposal for the proposed project would be provided by the Sacramento Regional County Sanitation District's (RegionalSan) Sacramento Regional Wastewater Treatment Plant (SRWTP). Under existing conditions, wastewater generated in the project area is conveyed to the SRWTP by the City's combined stormwater runoff and sanitary sewer system (CSS). The proposed project may potentially contribute to a net increase in the volume of wastewater flows entering the CSS and arriving at the SRWTP for treatment. The City of Sacramento is the water supplier for the project site; any project-related increase in water demand will be evaluated in the EIR to determine if there is sufficient water supply. Heating and cooling for the new building may be supplied by steam and chilled water delivered via underground pipeline from a new central plant located on site. If the project requires any new or modified utility infrastructure, the environmental effects of that utility work will be evaluated in the EIR.

CUMULATIVE IMPACTS

Implementation of the proposed project could potentially result in significant impacts to the above resource areas. When taken together with the effects of past projects, other current projects, and probable future projects, the project's contribution to the overall cumulative effect of all these activities could be considerable. Cumulative impacts and the project's contribution to those impacts will be evaluated in the EIR.

ALTERNATIVES

In accordance with the State CEQA Guidelines (14 CCR Section 15126.6), the EIR will describe a range of reasonable alternatives to the proposed project that are capable of meeting most of the project's objectives, and that would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will provide an analysis of a No Project Alternative and will also identify the environmentally superior alternative.

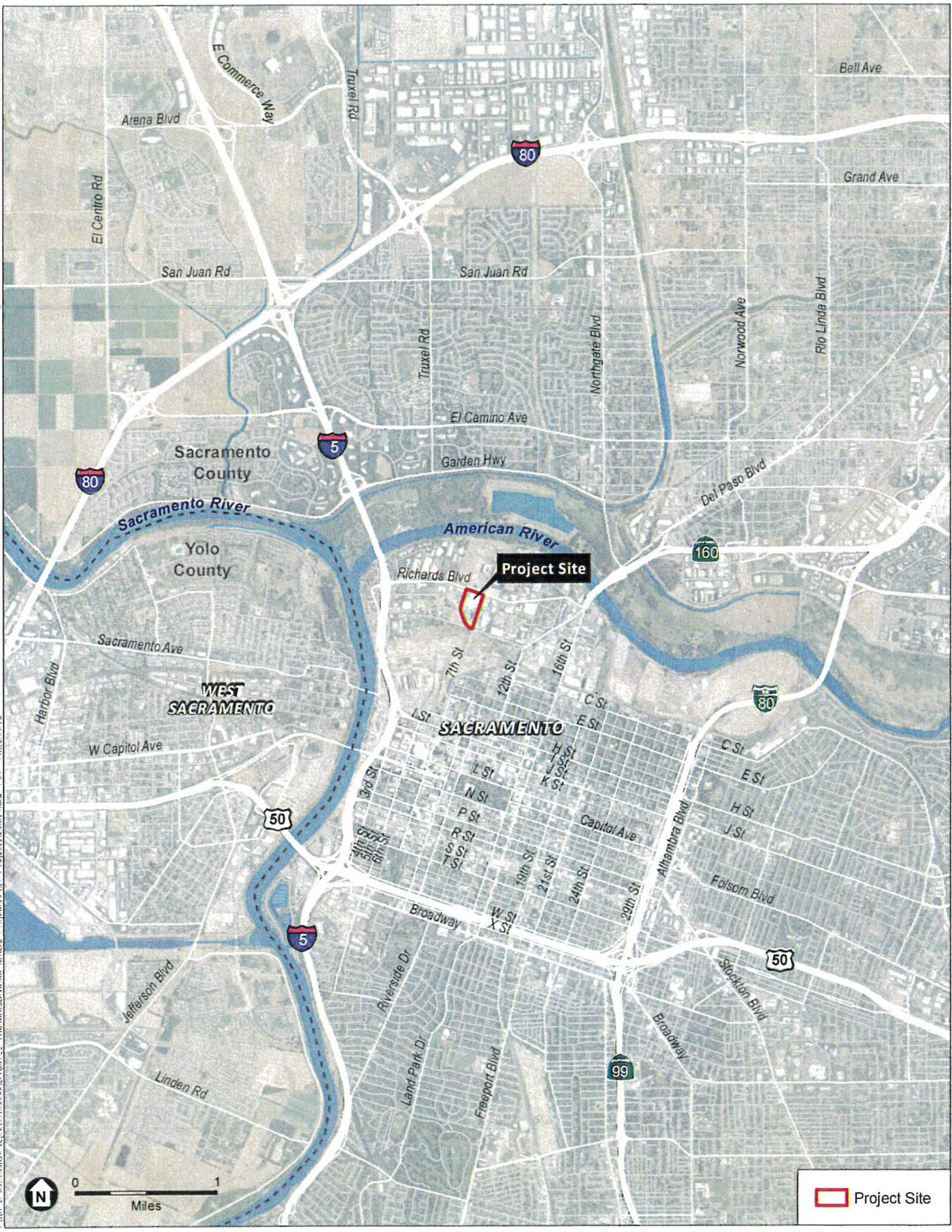
PUBLIC REVIEW PERIOD

This Notice of Preparation is being circulated for public review and comment for a period of 30 days beginning on December 14, 2018. An open house format scoping meeting will be held from 4:00 PM to 7:00 PM on Thursday, January 10, 2017 at the Smythe Academy Middle School Cafeteria, located at 700 Dos Rios St, Sacramento, CA 95811. Agencies and individuals may attend the scoping meeting at any time to obtain information on the project, ask questions of project team members, and provide comments. A brief presentation on the proposed project and the CEQA process will be given hourly. Written comments will be accepted by DGS through 5:00 PM on January 14, 2019. Comments must be delivered or mailed to Ms. Stephanie Coleman at the address listed above.

Copies of the Notice of Preparation may be reviewed at the following locations:

- Online at: http://www.dgs.ca.gov/resd/Programs/EnvironmentalServicesSection/CaliforniaEnvironmentalQualityAct.aspx
- Sacramento Central Library at 828 I Street during library hours;
- Department of General Services, Environmental Services Section between 8:00AM and 4:30PM; or
- Request a copy by email at environmental@dgs.ca.gov.

Your views and comments on how the project may affect the environment are welcomed. Please contact Ms. Coleman if you have any questions about the environmental review process for the proposed Richards Boulevard Office Complex project.



SOURCE: Esri, 2012; USDA, 2016; ESA, 2018

Richards Boulevard State Office Complex

Figure 1
Project Vicinity

Path: U:\GIS\GIS\Projects\18xxxx\D180722 RichardsBlvd103 MXDs Projects\Fig2 ProjectSite.mxd, FEP 11/29/2018

SOURCE: USDA, 2016; HGA, 2018; ESA, 2018

Richards Boulevard State Office Complex

Figure 2
Project Site

ESA

ENVIRONMENTAL IMPACT REPORT
EVALUATION/RESPONSE CHECKLIST
FOR AREA/SECTION

Reference: General Order 41.2

	Action	Reference GO 41.2
☐	Review memorandum for the due date(s).	
☐	Determine if the proposed project might impact local operations and/or public safety. Examples include: housing developments, large commercial projects, large recreational developments or expansions, landfill or quarry operations, hazardous materials storage and/or dump sites, highway construction/improvement projects, new schools, airport improvements, annexations/incorporations, off-highway vehicle facilities, and Indian gaming facilities.	Page 5
☐	Review environmental impact documents to identify issues or concerns with possible impact to departmental operations (i.e., increased response times, enforcement, emergency services, service calls, telecommunications, public safety).	
	Responses	
☐	<u>If comments are advisable</u>:	
☐	Correspondence should focus primarily on traffic safety, congestion, or other impacts to the CHP's mission; however, **Areas shall not indicate to the lead agency that additional personnel, facilities, vehicles, etc., are a means to mitigate departmental service issues**.	Page 7
☐	Ensure the State Clearinghouse number (SCH#) is included in all correspondence.	
☐	Comments shall be provided directly to the State Clearinghouse at 1400 Tenth Street, Room 121, Sacramento, CA 95814, or the lead agency as deemed appropriate, no later than the designated due date. Provide a copy to Special Projects Section (SPS) via electronic mail (e-mail).	
	For project tracking purposes, SPS must be notified of Area/Section's assessment of the project. After mailing your comments to the SCH or lead agency, send a scanned copy via e-mail to SPS.	
☐	<u>If no impact is determined</u>:	
☐	Via e-mail, please respond "no impact to _______________ Area's local operations and/or public safety by SCH# __________ was identified," by the designated SCH due date to the SPS analyst listed on the Environmental Document Review and Response memorandum. Ensure the SCH# is included.	

STATE OF CALIFORNIA GAVIN NEWSOM, *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

January 11, 2019

Stephanie Coleman
Department of General Services
707 Third Street
4th Floor, MS509
West Sacramento, CA 95605

Re: Richards Boulevard Office Complex Project
SCH 2018122034 — *Notice of Preparation*

Dear Ms. Coleman:

The California Public Utilities Commission (Commission/CPUC) has jurisdiction over rail crossings (crossings) in California. CPUC ensures that crossings are safely designed, constructed, and maintained. The Commission's Rail Crossings Engineering Branch (RCEB) is in receipt of the *Notice of Preparation (NOP)* for the proposed Richards Boulevard Office Complex Project. Department of General Services (DGS) is the lead agency.

DGS proposes to construct approximately 1.3 million gross square feet of space across three mid-rise office buildings and one high-rise office building at the southwest corner of the intersection of Richards Boulevard and 7th Street in the city of Sacramento. The project site is adjacent to the 7th & Richards Blvd intersection crossing (CPUC No. 083A-1.35) of the Sacramento Regional Transit District (SACRTD). The intersection is traffic signal controlled and equipped with Commission Standard 1 (crossbuck sign on a post) warning devices, as well as grade crossing pavement markings and railroad crossing warning signs (W10-1) at all four quadrants.

The Commission requests that DGS review the traffic studies in the coming Draft EIR to determine any possible negative impacts from increased traffic at the intersection of Richards Boulevard and 7th Street. Traffic studies should include current and projected movements of vehicles, pedestrians, and SACRTD light rails vehicles through the intersection. Based on the traffic studies, mitigation measures such as additional warning devices may be required to ensure safety at this crossing.

Construction or modification of public crossings requires authorization from the Commission. RCEB representatives are available to discuss any potential safety impacts or concerns at crossings. Please continue to keep RCEB informed of the project's development. More information can be found at: http://www.cpuc.ca.gov/crossings.

If you have any questions, please contact Matt Cervantes at (213) 266-4716, or mci@cpuc.ca.gov.

Sincerely,

Matt Cervantes
Utilities Engineer
Rail Crossings Engineering Branch
Safety and Enforcement Division

CC: State Clearinghouse, state.clearinghouse@opr.ca.gov

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 634-7616
FAX (530) 741-4111
TTY 711
www.dot.ca.gov/dist3

Making Conservation
a California Way of Life.

January 14, 2019

GTS# 03-SAC-2018-00355
SCH: 2018122034

Stephanie Coleman, Sr PM
Department of General Services
707 Third Street, 4th floor, MS509
West Sacramento, CA 95605

Richards Boulevard Office Complex Project – Notice of Preparation of an Environmental Impact Report (EIR)

Dear Nicholas:

Thank you for including California Department of Transportation (Caltrans) in the application review for the project referenced above. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system. We review this local development for impacts to the State Highway System (SHS) in keeping with our mission, vision and goals for sustainability/livability/economy, and safety/heath. We provide these comments consistent with the state's mobility goals that support a vibrant economy and build communities.

The proposed project will include approximately 1.3 million gross square feet across three mid-rise office buildings and one high-rise (up to 29 stories) office building. Project amenities would include a cafeteria, auditorium, fitness center and childcare center. Site improvements may include a parking garage and surface parking spaces, open space and pedestrian walkways.

The project site is in the River District in the City of Sacramento. The site is bounded by Richards Boulevard (Blvd.) on the north, North 7th Street on the east, North B Street on the south, and is immediately east of the Coastline Equipment Crane Division Building and the Capital Investments & Loans Building. Based on the information provided, Caltrans provides the following comments:

Traffic Operations/Forecasting:

The proposed development is anticipated to contribute significant traffic congestion to nearby Interstate 5 (I-5) and State Route 160 (SR 160). It is recommended that a Multi-Modal Transportation Impact Analysis, using the most current traffic volumes should be prepared to assess potential impacts to the SHS. The scope of the multi-modal analysis should include:

- nearby I-5 and SR 160 mainline, ramps, and ramp intersections;
- trips generated and distributed from the project site;
- existing traffic condition without the project;
- existing traffic condition with the project;
- future cumulative traffic condition without the project and with the project;
- queue length analysis southbound and northbound I-5 off ramps terminals to Richards Blvd. because these terminals operate at or near capacity during the AM and PM peak hours;
- merge and diverge analysis for the I-5 and Richards Blvd. interchange because the I-5 mainline operates at or near capacity during the AM and PM peak hours; and,
- analysis of the SR 160 and Richards Blvd. intersection because SR 160 operates at or near capacity at this intersection.

Mitigation proposed in the analysis should include Transportation Demand Management and Access Management projects and strategies that increase multi-modal access and reduce VMT on the SHS.

In addition, the analysis should measure Vehicle Miles Traveled (VMT) generated by the project with a trip distribution diagram that analyzes and identifies any potential safety impacts for all modes of transportation. The VMT analysis should include VMT per capita, and the average VMT per capita for the surrounding area that takes into consideration all modes of transportation.

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes related to this development.

If you have any questions regarding these comments or require additional information, please contact Uzma Rehman, Intergovernmental Review Coordinator for the City of Sacramento, by phone (530) 741-5173 or via email to uzma.rehman@dot.ca.gov.

Sincerely,

ALEX FONG, Branch Chief
Office of Transportation Planning - South

cc: State Clearinghouse

City of
SACRAMENTO
Community Development

January 14, 2019

Stephanie Coleman & Richard Standiford
Real Estate Services Division
Department of General Services
707 3rd Street – 4th Floor
West Sacramento, CA 95605

via email to:
stephanie.coleman@dgs.ca.gov &
richard.standiford@dgs.ca.gov

RE: Richards Boulevard Office Complex

Ms. Coleman & Mr. Standiford:

The Richards Boulevard Office Complex, located at 300 and 344 North 7th Street (APN 001-0210-010), is a California Department of General Services (DGS) project located within the City of Sacramento. The project includes approximately 1.3 million square feet of offices and ancillary support uses within three mid-rise buildings and one high-rise building. It is anticipated that the development will house the Business, Consumer Services, and Housing Agency, the Department of Tax and Fee Administration, and the Board of Equalization.

DGS has circulated a Notice of Preparation (NOP) in compliance with the provisions of the California Environmental Quality Act (CEQA) and is in the process of developing performance criteria ahead of a future request for proposal (RFP) for a design-builder. As DGS continues its CEQA review and RFP programing, the Planning Division offers the following comments to guide its analysis and development.

> Policy Documents: The 17-acre project site is located within the River District; the northern gateway into the Sacramento's Central City that is transitioning from a predominately warehouse and government office district to a mixed-use jobs and housing center. This evolution was envisioned in the River District Specific Plan and River District Design Guidelines. Many of the project objectives defined in the NOP appear to align with the goals of the Specific Plan and Design Guidelines.
>
> Land Use and Planning: Central to the Specific Plan and Design Guidelines is the re-establishment of a strong circulation network that breaks through current connectivity barriers to create an urban character that is pedestrian and bicycle friendly. Consideration should be made of the City's and the community's desire to create streets and intersections at a scale that is attractive for pedestrians and bicyclists. Given that multiple State

departments are anticipated to occupy the site, an opportunity is available to develop a site plan and building design that respects these goals.

Transportation and Circulation: Closely integrated with land use is circulation. The urban uses envisioned for the River District area require a robust street framework. As large properties are redeveloped, there is an opportunity to establish a fine-grain street network to give employees, residents, and visitors connection options to the Railyards and Downtown and to disperse and moderate the number of cars, bicyclists, and pedestrians planned for the site and area. To that end, the Specific Plan envisions several street extensions through the project site including two east-west extensions for Bannon Street and North C Street, and one north-south extension of North 6th Street.

Utilities, Infrastructure, and Energy: The City provides water, sewer, and drainage services for the project site. The Specific Plan and the River District Finance Plan acknowledge that the infrastructure in the area is inadequate to serve the future build-out of the area. DGS should consider how the design of the project affects the City's ability to provide services to the area as the pace of development surrounding the project site is not known at this time.

Thank you for consideration of these comments. We understand that the project is in the early phases of development but encourage DGS to make an early commitment to adhere to the Specific Plan and Design Guidelines. The outreach you have completed with River District Property and Business Improvement District as well as Planning Division staff is greatly appreciated. We look forward to working with DGS on a development within the River District that continues our progress towards creating a vibrant, distinctive, and well-connected community.

If you have any questions or would like to discuss these comments further, please feel free to contact me at *kfelix@cityofsacramento.org*.

Sincerely,

Karlo Felix
Senior Planner

Attachments: none

Copy:
Evan Compton, Principal Planner
Tom Pace, Planning Director
Rachel Hazelwood, Senior Development Project Manager

S:\Current\Users\KFelix\Projects\RichardsBlvdOfficeComplex\To_DGS_20190114.docx

Powering forward. Together.

SMUD®

Sent Via E-Mail

January 14, 2019

Stephanie Coleman
Department of General Services
707 Third Street, 4th Floor, MS509
West Sacramento, CA 95605
Stephanie.coleman@dgs.ca.gov

Subject: Richards Boulevard Office Complex Project / 2018122034 / NOP

Dear Ms. Coleman:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the proposed Notice of Preparation (NOP) for the Richards Office Complex Project (Project, SCH 2018122034). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project NOP will acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- SMUD infrastructure related to the potential relocation or removal of existing SMUD facilities on or adjacent to the subject property.

- SMUD easements or public utility easements on or adjacent to the subject property. The Project Lead Agency shall provide any necessary easements and or public utility easements.

More specifically, SMUD would like to have the following details related to the electrical infrastructure incorporated into the project description.

Existing infrastructure in the following areas of the project area contained in the NOP:

- 21 kV underground (UG) and overhead (OH) infrastructure and facilities along the north side of North B Street along the southern boundary.
- Secondary voltage UG for approximately 200 feet along the west side of 7th Street just north of North B Street along the eastern boundary.
- 21 kV UG infrastructure and facilities along the south side of Richards Blvd just west of the existing printing plant building. This facility currently services the existing structures.

The following is a list of estimated proposed infrastructure in the project area contained in the NOP.

- Underground 21 kV infrastructure and facilities along the south side of Richards Blvd along the entire northern boundary area of the project. These facilities will include, but are not limited to, underground circuit(s), pad-mounted transformer(s), pad-mounted switchgear and other ancillary infrastructure such as manholes and pull boxes as needed per the demand requirements.
- Underground 21 kV infrastructure and facilities along the west side of North 7th Street along the entire eastern boundary.
- Underground 21 kV infrastructure and facilities within the NOP property area. The location will be dependent upon specific service requirements and arrangements. These facilities will include, but are not limited to, underground circuit(s), pad-mounted transformer(s), pad-mounted switchgear and other ancillary infrastructure such as manholes and pull boxes as needed per the demand requirements.
- Two (2) NEW 21 kV circuits will be used as part of the overall estimated service requirements for the Richard Blvd Office Complex Project. These circuits will be built from SMUD substation Station E (under construction) to the project area and to the proposed Station H as shown in SMUD Exhibit 1 (Circuits 2303 and 2309). Tentative schedule for these circuits are in 2022 and 2024 respectively but will ultimately depend on the timing and demand requirements for this project.
- A new SMUD substation (Station H) will ultimately service the entire Richards Blvd Office Project area. This new substation involves a rebuild and expansion of an existing SMUD substation site (Station A) at the northeast corner of 6th and H Streets.

> This 115/21 kV substation project is tentatively scheduled to start in 2022 with an estimated completion date of 2024 and will entail the demolition of the existing 115/12 kV network substation and subsequent rebuild to a 115/21 kV substation.

SMUD would like to be discuss the above areas of interest as well as exploring the opportunity to address the electrical service requirements of this project by having them included in the EIR.

We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this NOP.

If you have any questions regarding this letter, please contact SMUD's Environmental Management Specialist, Rob Ferrera, at rob.ferrera@smud.org or 916.732.6676.

Sincerely,

Nicole Goi

Nicole Goi
Regional & Local Government Affairs
Sacramento Municipal Utility District
6301 S Street, Mail Stop A313
Sacramento, CA 95817
Nicole.goi@smud.org

Cc: Rob Ferrera

Appendix C

LEED Checklist

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name:
Date:

Y	?	N			
			Credit	Integrative Process	**1**

0	0	0	**Location and Transportation**		**16**
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1

0	0	0	**Sustainable Sites**		**10**
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	1
			Credit	Site Development - Protect or Restore Habitat	2
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1

0	0	0	**Water Efficiency**		**11**
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1

0	0	0	**Energy and Atmosphere**		**33**
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

0	0	0	**Materials and Resources**		**13**
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2

0	0	0	**Indoor Environmental Quality**		**16**
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1

0	0	0	**Innovation**		**6**
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

0	0	0	**Regional Priority**		**4**
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

0	0	0	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

Appendix D

Air Quality

Appendix D1

Air Quality Modeling

DGS Richards

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,437.00	1000sqft	32.99	1,437,000.00	0
Enclosed Parking with Elevator	1,020.00	Space	9.18	408,000.00	0
Parking Lot	400.00	Space	3.60	160,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2024

Utility Company Sacramento Municipal Utility District

CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project specific construction schedule.

Off-road Equipment - Assumed construction equipment.

Off-road Equipment - Assumed construction equipment

Off-road Equipment - no demolition phase

Off-road Equipment - Project specific construction equipment

Off-road Equipment - Project specific construction equipment

Off-road Equipment -

Trips and VMT - Project specific construction trips

Grading -

Architectural Coating - Assumed half of the exerior of the building will need to be painted.

Vehicle Trips - VMT estimates include mid-day employee travel, visitor travel, and service/delivery travel so all were calculated as Non Res C-W trip length

Area Coating - According to the project engineer, about half of the exterior portion of the building will be painted.

Energy Use - Assumed Title 24 2019 standards would use 30 percent less energy than those under the 2016 standards.

Construction Off-road Equipment Mitigation - Tier 4 Interim engines as mitigation

Stationary Sources - Emergency Generators and Fire Pumps - Two emergency generators will be installed in the the CUP.

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	718,500.00	359,250.00
tblAreaCoating	Area_Nonresidential_Exterior	718500	359250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	55.00	10.00
tblConstructionPhase	NumDays	740.00	769.00
tblConstructionPhase	NumDays	75.00	41.00
tblConstructionPhase	NumDays	55.00	21.00
tblConstructionPhase	NumDays	30.00	202.00
tblEnergyUse	T24E	3.92	2.74

tblEnergyUse	T24E	4.98	3.49
tblEnergyUse	T24NG	12.42	8.69
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,564.00
tblTripsAndVMT	VendorTripNumber	329.00	200.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	40.00
tblTripsAndVMT	WorkerTripNumber	140.00	20.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TTP	62.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CW_TL	10.00	12.28

tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	34.00	0.00
tblVehicleTrips	PB_TP	16.00	0.00
tblVehicleTrips	PR_TP	50.00	100.00
tblVehicleTrips	WD_TR	68.93	6.64

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					
2020	0.1000	0.8621	1.0444	1.6100e-003	0.0371	0.0540	0.0911	9.8500e-003	0.0497	0.0596	0.0000	142.4719	142.4719	0.0365	0.0000	143.3845
2021	1.4882	11.7124	11.6846	0.0343	1.9451	0.4051	2.3502	0.5806	0.3846	0.9651	0.0000	3,098.9771	3,098.9771	0.2936	0.0000	3,106.3179
2022	1.4390	9.7671	11.8218	0.0332	1.8167	0.3488	2.1656	0.4865	0.3330	0.8195	0.0000	2,978.4020	2,978.4020	0.2548	0.0000	2,984.7713
2023	1.3305	8.8145	11.3175	0.0325	1.8167	0.3048	2.1215	0.4865	0.2908	0.7773	0.0000	2,916.6015	2,916.6015	0.2456	0.0000	2,922.7405
2024	6.0638	1.0348	1.3921	3.8500e-003	0.2074	0.0353	0.2427	0.0555	0.0335	0.0890	0.0000	345.1438	345.1438	0.0337	0.0000	345.9874
Maximum	**6.0638**	**11.7124**	**11.8218**	**0.0343**	**1.9451**	**0.4051**	**2.3502**	**0.5806**	**0.3846**	**0.9651**	**0.0000**	**3,098.9771**	**3,098.9771**	**0.2936**	**0.0000**	**3,106.3179**

2.1 Overall Construction

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					
2020	0.0435	0.5589	1.0696	1.6100e-003	0.0371	2.2900e-003	0.0394	9.8500e-003	2.2700e-003	0.0121	0.0000	142.4718	142.4718	0.0365	0.0000	143.3844
2021	0.8706	8.3312	12.5681	0.0343	1.9451	0.0567	2.0018	0.5806	0.0556	0.6361	0.0000	3,098.9759	3,098.9759	0.2936	0.0000	3,106.3167
2022	0.9021	7.4948	12.7275	0.0332	1.8167	0.0572	1.8739	0.4865	0.0561	0.5426	0.0000	2,978.4008	2,978.4008	0.2548	0.0000	2,984.7700
2023	0.8494	7.0619	12.2799	0.0325	1.8167	0.0535	1.8702	0.4865	0.0526	0.5391	0.0000	2,916.6003	2,916.6003	0.2456	0.0000	2,922.7393
2024	6.0078	0.8908	1.5330	3.8500e-003	0.2074	6.3700e-003	0.2137	0.0555	6.2600e-003	0.0618	0.0000	345.1436	345.1436	0.0337	0.0000	345.9873
Maximum	**6.0078**	**8.3312**	**12.7275**	**0.0343**	**1.9451**	**0.0572**	**2.0018**	**0.5806**	**0.0561**	**0.6361**	**0.0000**	**3,098.9759**	**3,098.9759**	**0.2936**	**0.0000**	**3,106.3167**

	ROG	**NOx**	**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	**16.77**	**24.40**	**-7.83**	**0.00**	**0.00**	**84.66**	**13.94**	**0.00**	**84.18**	**33.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**3-1-2021**	**5-31-2021**	3.1051	2.1835
2	**6-1-2021**	**8-31-2021**	3.0907	2.1691
3	**9-1-2021**	**11-30-2021**	3.0854	2.1738
4	**12-1-2021**	**2-28-2022**	2.8911	2.1252
5	**3-1-2022**	**5-31-2022**	2.8362	2.1262
6	**6-1-2022**	**8-31-2022**	2.8232	2.1132

7	**9-1-2022**	**11-30-2022**	2.8181	2.1157
8	**12-1-2022**	**2-28-2023**	2.6260	2.0246
9	**3-1-2023**	**5-31-2023**	2.5696	2.0051
10	**6-1-2023**	**8-31-2023**	2.5587	1.9942
11	**9-1-2023**	**11-30-2023**	2.5524	1.9939
12	**12-1-2023**	**2-29-2024**	1.9922	1.6116
13	**3-1-2024**	**5-31-2024**	6.3733	6.3713
		Highest	6.3733	6.3713

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	6,227.5817	6,227.5817	0.2844	0.0692	6,255.3040
Mobile	2.1705	9.9082	31.7563	0.1188	11.3625	0.0897	11.4522	3.0451	0.0836	3.1287	0.0000	10,939.2616	10,939.2616	0.4471	0.0000	10,950.4393
Stationary	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Waste						0.0000	0.0000		0.0000	0.0000	271.2792	0.0000	271.2792	16.0321	0.0000	672.0826
Water						0.0000	0.0000		0.0000	0.0000	101.0011	544.8357	645.8368	0.3744	0.2252	722.3012
Total	**8.4993**	**10.6276**	**32.3808**	**0.1228**	**11.3625**	**0.1419**	**11.5044**	**3.0451**	**0.1358**	**3.1809**	**372.2803**	**17,717.8777**	**18,090.1580**	**17.1391**	**0.2944**	**18,606.3519**

2.2 Overall Operational

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	6,227.5817	6,227.5817	0.2844	0.0692	6,255.3040
Mobile	2.1705	9.9082	31.7563	0.1188	11.3625	0.0897	11.4522	3.0451	0.0836	3.1287	0.0000	10,939.2616	10,939.2616	0.4471	0.0000	10,950.4393
Stationary	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Waste						0.0000	0.0000		0.0000	0.0000	271.2792	0.0000	271.2792	16.0321	0.0000	672.0826
Water						0.0000	0.0000		0.0000	0.0000	101.0011	544.8357	645.8368	0.3744	0.2252	722.3012
Total	**8.4993**	**10.6276**	**32.3808**	**0.1228**	**11.3625**	**0.1419**	**11.5044**	**3.0451**	**0.1358**	**3.1809**	**372.2803**	**17,717.8777**	**18,090.1580**	**17.1391**	**0.2944**	**18,606.3519**

	ROG	**NOx**	**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	GeoTech and Foundation Investigation	Site Preparation	3/25/2020	12/31/2020	5	202	
2	Excavate Foundations and Pile Claps	Grading	1/1/2021	2/28/2021	5	41	
3	Building Construction	Building Construction	3/1/2021	2/8/2024	5	769	
4	Paving	Paving	2/9/2024	3/9/2024	5	21	
5	Architectural Coating	Architectural Coating	3/10/2024	3/24/2024	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 12.78

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,155,500; Non-Residential Outdoor: 359,250; Striped Parking Area: 34,080 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
GeoTech and Foundation Investigation	Rubber Tired Dozers	0	8.00	247	0.40
GeoTech and Foundation Investigation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavate Foundations and Pile Claps	Excavators	4	8.00	158	0.38
Excavate Foundations and Pile Claps	Graders	2	8.00	187	0.41
Excavate Foundations and Pile Claps	Rubber Tired Dozers	2	8.00	247	0.40
Excavate Foundations and Pile Claps	Scrapers	2	8.00	367	0.48
Excavate Foundations and Pile Claps	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	5	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	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
GeoTech and Foundation Investigati	4	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Excavate Foundations and Pile Claps	12	40.00	0.00	9,564.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	24	698.00	200.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 GeoTech and Foundation Investigation - 2020

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0846	0.8505	0.9210	1.2500e-003		0.0538	0.0538		0.0495	0.0495	0.0000	110.2325	110.2325	0.0357	0.0000	111.1237
Total	**0.0846**	**0.8505**	**0.9210**	**1.2500e-003**	**0.0000**	**0.0538**	**0.0538**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**110.2325**	**110.2325**	**0.0357**	**0.0000**	**111.1237**

3.2 GeoTech and Foundation Investigation - 2020

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	0.0154	0.0116	0.1234	3.6000e-004	0.0371	2.5000e-004	0.0373	9.8500e-003	2.3000e-004	0.0101	0.0000	32.2395	32.2395	8.5000e-004	0.0000	32.2608
Total	**0.0154**	**0.0116**	**0.1234**	**3.6000e-004**	**0.0371**	**2.5000e-004**	**0.0373**	**9.8500e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.2395**	**32.2395**	**8.5000e-004**	**0.0000**	**32.2608**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0281	0.5473	0.9462	1.2500e-003		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	110.2323	110.2323	0.0357	0.0000	111.1236
Total	**0.0281**	**0.5473**	**0.9462**	**1.2500e-003**	**0.0000**	**2.0500e-003**	**2.0500e-003**	**0.0000**	**2.0500e-003**	**2.0500e-003**	**0.0000**	**110.2323**	**110.2323**	**0.0357**	**0.0000**	**111.1236**

3.2 GeoTech and Foundation Investigation - 2020

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	0.0154	0.0116	0.1234	3.6000e-004	0.0371	2.5000e-004	0.0373	9.8500e-003	2.3000e-004	0.0101	0.0000	32.2395	32.2395	8.5000e-004	0.0000	32.2608
Total	**0.0154**	**0.0116**	**0.1234**	**3.6000e-004**	**0.0371**	**2.5000e-004**	**0.0373**	**9.8500e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.2395**	**32.2395**	**8.5000e-004**	**0.0000**	**32.2608**

3.3 Excavate Foundations and Pile Claps - 2021

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					0.3121	0.0000	0.3121	0.1428	0.0000	0.1428	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1261	1.3859	0.8862	1.7900e-003		0.0597	0.0597		0.0550	0.0550	0.0000	157.6392	157.6392	0.0510	0.0000	158.9138
Total	**0.1261**	**1.3859**	**0.8862**	**1.7900e-003**	**0.3121**	**0.0597**	**0.3719**	**0.1428**	**0.0550**	**0.1977**	**0.0000**	**157.6392**	**157.6392**	**0.0510**	**0.0000**	**158.9138**

3.3 Excavate Foundations and Pile Claps - 2021

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	0.0341	1.2619	0.2884	3.7200e-003	0.0807	4.3200e-003	0.0850	0.0221	4.1400e-003	0.0263	0.0000	361.6316	361.6316	0.0209	0.0000	362.1532
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	5.8300e-003	4.2400e-003	0.0459	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.6407	12.6407	3.1000e-004	0.0000	12.6485
Total	**0.0399**	**1.2661**	**0.3343**	**3.8600e-003**	**0.0957**	**4.4200e-003**	**0.1001**	**0.0261**	**4.2300e-003**	**0.0304**	**0.0000**	**374.2723**	**374.2723**	**0.0212**	**0.0000**	**374.8017**

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					0.3121	0.0000	0.3121	0.1428	0.0000	0.1428	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.5702	1.0784	1.7900e-003		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	157.6390	157.6390	0.0510	0.0000	158.9136
Total	**0.0284**	**0.5702**	**1.0784**	**1.7900e-003**	**0.3121**	**2.9400e-003**	**0.3151**	**0.1428**	**2.9400e-003**	**0.1457**	**0.0000**	**157.6390**	**157.6390**	**0.0510**	**0.0000**	**158.9136**

3.3 Excavate Foundations and Pile Claps - 2021

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	0.0341	1.2619	0.2884	3.7200e-003	0.0807	4.3200e-003	0.0850	0.0221	4.1400e-003	0.0263	0.0000	361.6316	361.6316	0.0209	0.0000	362.1532
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	5.8300e-003	4.2400e-003	0.0459	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.6407	12.6407	3.1000e-004	0.0000	12.6485
Total	**0.0399**	**1.2661**	**0.3343**	**3.8600e-003**	**0.0957**	**4.4200e-003**	**0.1001**	**0.0261**	**4.2300e-003**	**0.0304**	**0.0000**	**374.2723**	**374.2723**	**0.0212**	**0.0000**	**374.8017**

3.4 Building Construction - 2021

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	0.7072	6.4130	5.5659	0.0102		0.3256	0.3256		0.3110	0.3110	0.0000	867.2426	867.2426	0.1629	0.0000	871.3144
Total	**0.7072**	**6.4130**	**5.5659**	**0.0102**		**0.3256**	**0.3256**		**0.3110**	**0.3110**	**0.0000**	**867.2426**	**867.2426**	**0.1629**	**0.0000**	**871.3144**

3.4 Building Construction - 2021

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	0.0692	2.2505	0.6015	5.3700e-003	0.1286	6.2200e-003	0.1348	0.0372	5.9500e-003	0.0431	0.0000	516.2181	516.2181	0.0295	0.0000	516.9560
Worker	0.5459	0.3970	4.2968	0.0131	1.4086	9.1300e-003	1.4178	0.3745	8.4200e-003	0.3829	0.0000	1,183.6049	1,183.6049	0.0291	0.0000	1,184.3320
Total	**0.6151**	**2.6475**	**4.8983**	**0.0185**	**1.5372**	**0.0154**	**1.5526**	**0.4117**	**0.0144**	**0.4260**	**0.0000**	**1,699.8230**	**1,699.8230**	**0.0586**	**0.0000**	**1,701.2880**

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	0.1873	3.8474	6.2571	0.0102		0.0340	0.0340		0.0340	0.0340	0.0000	867.2415	867.2415	0.1629	0.0000	871.3133
Total	**0.1873**	**3.8474**	**6.2571**	**0.0102**		**0.0340**	**0.0340**		**0.0340**	**0.0340**	**0.0000**	**867.2415**	**867.2415**	**0.1629**	**0.0000**	**871.3133**

3.4 Building Construction - 2021

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	0.0692	2.2505	0.6015	5.3700e-003	0.1286	6.2200e-003	0.1348	0.0372	5.9500e-003	0.0431	0.0000	516.2181	516.2181	0.0295	0.0000	516.9560
Worker	0.5459	0.3970	4.2968	0.0131	1.4086	9.1300e-003	1.4178	0.3745	8.4200e-003	0.3829	0.0000	1,183.6049	1,183.6049	0.0291	0.0000	1,184.3320
Total	**0.6151**	**2.6475**	**4.8983**	**0.0185**	**1.5372**	**0.0154**	**1.5526**	**0.4117**	**0.0144**	**0.4260**	**0.0000**	**1,699.8230**	**1,699.8230**	**0.0586**	**0.0000**	**1,701.2880**

3.4 Building Construction - 2022

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	0.7582	6.8192	6.4890	0.0120		0.3319	0.3319		0.3172	0.3172	0.0000	1,025.0752	1,025.0752	0.1900	0.0000	1,029.8239
Total	**0.7582**	**6.8192**	**6.4890**	**0.0120**		**0.3319**	**0.3319**		**0.3172**	**0.3172**	**0.0000**	**1,025.0752**	**1,025.0752**	**0.1900**	**0.0000**	**1,029.8239**

3.4 Building Construction - 2022

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	0.0759	2.5254	0.6555	6.2900e-003	0.1520	6.4500e-003	0.1584	0.0439	6.1700e-003	0.0501	0.0000	604.7133	604.7133	0.0339	0.0000	605.5605
Worker	0.6049	0.4225	4.6774	0.0149	1.6647	0.0105	1.6752	0.4426	9.6800e-003	0.4523	0.0000	1,348.6135	1,348.6135	0.0309	0.0000	1,349.3869
Total	**0.6808**	**2.9479**	**5.3328**	**0.0212**	**1.8167**	**0.0170**	**1.8337**	**0.4865**	**0.0159**	**0.5024**	**0.0000**	**1,953.3268**	**1,953.3268**	**0.0648**	**0.0000**	**1,954.9474**

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	0.2213	4.5469	7.3947	0.0120		0.0402	0.0402		0.0402	0.0402	0.0000	1,025.0740	1,025.0740	0.1900	0.0000	1,029.8227
Total	**0.2213**	**4.5469**	**7.3947**	**0.0120**		**0.0402**	**0.0402**		**0.0402**	**0.0402**	**0.0000**	**1,025.0740**	**1,025.0740**	**0.1900**	**0.0000**	**1,029.8227**

3.4 Building Construction - 2022

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	0.0759	2.5254	0.6555	6.2900e-003	0.1520	6.4500e-003	0.1584	0.0439	6.1700e-003	0.0501	0.0000	604.7133	604.7133	0.0339	0.0000	605.5605
Worker	0.6049	0.4225	4.6774	0.0149	1.6647	0.0105	1.6752	0.4426	9.6800e-003	0.4523	0.0000	1,348.6135	1,348.6135	0.0309	0.0000	1,349.3869
Total	**0.6808**	**2.9479**	**5.3328**	**0.0212**	**1.8167**	**0.0170**	**1.8337**	**0.4865**	**0.0159**	**0.5024**	**0.0000**	**1,953.3268**	**1,953.3268**	**0.0648**	**0.0000**	**1,954.9474**

3.4 Building Construction - 2023

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	0.7024	6.2995	6.4323	0.0120		0.2915	0.2915		0.2785	0.2785	0.0000	1,025.1740	1,025.1740	0.1874	0.0000	1,029.8589
Total	**0.7024**	**6.2995**	**6.4323**	**0.0120**		**0.2915**	**0.2915**		**0.2785**	**0.2785**	**0.0000**	**1,025.1740**	**1,025.1740**	**0.1874**	**0.0000**	**1,029.8589**

3.4 Building Construction - 2023

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	0.0600	2.1344	0.5799	6.1700e-003	0.1520	3.0700e-003	0.1550	0.0439	2.9300e-003	0.0469	0.0000	593.5361	593.5361	0.0304	0.0000	594.2961
Worker	0.5681	0.3806	4.3053	0.0144	1.6647	0.0102	1.6750	0.4426	9.4400e-003	0.4520	0.0000	1,297.8914	1,297.8914	0.0278	0.0000	1,298.5856
Total	**0.6281**	**2.5150**	**4.8852**	**0.0205**	**1.8167**	**0.0133**	**1.8300**	**0.4865**	**0.0124**	**0.4989**	**0.0000**	**1,891.4275**	**1,891.4275**	**0.0582**	**0.0000**	**1,892.8817**

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	tons/yr										MT/yr					
Off-Road	0.2213	4.5469	7.3947	0.0120		0.0402	0.0402		0.0402	0.0402	0.0000	1,025.1727	1,025.1727	0.1874	0.0000	1,029.8576
Total	**0.2213**	**4.5469**	**7.3947**	**0.0120**		**0.0402**	**0.0402**		**0.0402**	**0.0402**	**0.0000**	**1,025.1727**	**1,025.1727**	**0.1874**	**0.0000**	**1,029.8576**

3.4 Building Construction - 2023

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	0.0600	2.1344	0.5799	6.1700e-003	0.1520	3.0700e-003	0.1550	0.0439	2.9300e-003	0.0469	0.0000	593.5361	593.5361	0.0304	0.0000	594.2961
Worker	0.5681	0.3806	4.3053	0.0144	1.6647	0.0102	1.6750	0.4426	9.4400e-003	0.4520	0.0000	1,297.8914	1,297.8914	0.0278	0.0000	1,298.5856
Total	**0.6281**	**2.5150**	**4.8852**	**0.0205**	**1.8167**	**0.0133**	**1.8300**	**0.4865**	**0.0124**	**0.4989**	**0.0000**	**1,891.4275**	**1,891.4275**	**0.0582**	**0.0000**	**1,892.8817**

3.4 Building Construction - 2024

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	0.0732	0.6558	0.7121	1.3400e-003		0.0286	0.0286		0.0273	0.0273	0.0000	114.3522	114.3522	0.0207	0.0000	114.8686
Total	**0.0732**	**0.6558**	**0.7121**	**1.3400e-003**		**0.0286**	**0.0286**		**0.0273**	**0.0273**	**0.0000**	**114.3522**	**114.3522**	**0.0207**	**0.0000**	**114.8686**

3.4 Building Construction - 2024

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	6.3800e-003	0.2335	0.0605	6.8000e-004	0.0170	3.2000e-004	0.0173	4.9000e-003	3.1000e-004	5.2100e-003	0.0000	65.8178	65.8178	3.3500e-003	0.0000	65.9015
Worker	0.0598	0.0384	0.4456	1.5400e-003	0.1857	1.1200e-003	0.1868	0.0494	1.0300e-003	0.0504	0.0000	139.1296	139.1296	2.8000e-003	0.0000	139.1995
Total	**0.0662**	**0.2720**	**0.5061**	**2.2200e-003**	**0.2026**	**1.4400e-003**	**0.2041**	**0.0543**	**1.3400e-003**	**0.0556**	**0.0000**	**204.9474**	**204.9474**	**6.1500e-003**	**0.0000**	**205.1010**

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	0.0247	0.5072	0.8248	1.3400e-003		4.4800e-003	4.4800e-003		4.4800e-003	4.4800e-003	0.0000	114.3521	114.3521	0.0207	0.0000	114.8684
Total	**0.0247**	**0.5072**	**0.8248**	**1.3400e-003**		**4.4800e-003**	**4.4800e-003**		**4.4800e-003**	**4.4800e-003**	**0.0000**	**114.3521**	**114.3521**	**0.0207**	**0.0000**	**114.8684**

3.4 Building Construction - 2024

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	6.3800e-003	0.2335	0.0605	6.8000e-004	0.0170	3.2000e-004	0.0173	4.9000e-003	3.1000e-004	5.2100e-003	0.0000	65.8178	65.8178	3.3500e-003	0.0000	65.9015
Worker	0.0598	0.0384	0.4456	1.5400e-003	0.1857	1.1200e-003	0.1868	0.0494	1.0300e-003	0.0504	0.0000	139.1296	139.1296	2.8000e-003	0.0000	139.1995
Total	**0.0662**	**0.2720**	**0.5061**	**2.2200e-003**	**0.2026**	**1.4400e-003**	**0.2041**	**0.0543**	**1.3400e-003**	**0.0556**	**0.0000**	**204.9474**	**204.9474**	**6.1500e-003**	**0.0000**	**205.1010**

3.5 Paving - 2024

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	0.0104	0.1000	0.1536	2.4000e-004		4.9200e-003	4.9200e-003		4.5300e-003	4.5300e-003	0.0000	21.0279	21.0279	6.8000e-003	0.0000	21.1979
Paving	4.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.1000**	**0.1536**	**2.4000e-004**		**4.9200e-003**	**4.9200e-003**		**4.5300e-003**	**4.5300e-003**	**0.0000**	**21.0279**	**21.0279**	**6.8000e-003**	**0.0000**	**21.1979**

3.5 Paving - 2024

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	9.3000e-004	6.0000e-004	6.9300e-003	2.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.8000e-004	0.0000	2.1651	2.1651	4.0000e-005	0.0000	2.1662
Total	**9.3000e-004**	**6.0000e-004**	**6.9300e-003**	**2.0000e-005**	**2.8900e-003**	**2.0000e-005**	**2.9100e-003**	**7.7000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.1651**	**2.1651**	**4.0000e-005**	**0.0000**	**2.1662**

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	3.5100e-003	0.1054	0.1816	2.4000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	21.0278	21.0278	6.8000e-003	0.0000	21.1979
Paving	4.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2300e-003**	**0.1054**	**0.1816**	**2.4000e-004**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**21.0278**	**21.0278**	**6.8000e-003**	**0.0000**	**21.1979**

3.5 Paving - 2024

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	9.3000e-004	6.0000e-004	6.9300e-003	2.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.8000e-004	0.0000	2.1651	2.1651	4.0000e-005	0.0000	2.1662
Total	**9.3000e-004**	**6.0000e-004**	**6.9300e-003**	**2.0000e-005**	**2.8900e-003**	**2.0000e-005**	**2.9100e-003**	**7.7000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.1651**	**2.1651**	**4.0000e-005**	**0.0000**	**2.1662**

3.6 Architectural Coating - 2024

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	5.9069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**5.9078**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2024

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	5.9000e-004	3.8000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3747	1.3747	3.0000e-005	0.0000	1.3754
Total	**5.9000e-004**	**3.8000e-004**	**4.4000e-003**	**2.0000e-005**	**1.8300e-003**	**1.0000e-005**	**1.8500e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3747**	**1.3747**	**3.0000e-005**	**0.0000**	**1.3754**

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	5.9069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	5.3000e-003	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**5.9072**	**5.3000e-003**	**9.1600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2024

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	5.9000e-004	3.8000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3747	1.3747	3.0000e-005	0.0000	1.3754
Total	**5.9000e-004**	**3.8000e-004**	**4.4000e-003**	**2.0000e-005**	**1.8300e-003**	**1.0000e-005**	**1.8500e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3747**	**1.3747**	**3.0000e-005**	**0.0000**	**1.3754**

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	2.1705	9.9082	31.7563	0.1188	11.3625	0.0897	11.4522	3.0451	0.0836	3.1287	0.0000	10,939.2616	10,939.2616	0.4471	0.0000	10,950.4393
Unmitigated	2.1705	9.9082	31.7563	0.1188	11.3625	0.0897	11.4522	3.0451	0.0836	3.1287	0.0000	10,939.2616	10,939.2616	0.4471	0.0000	10,950.4393

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Government Office Building	9,547.00	0.00	0.00	30,487,600	30,487,600
Parking Lot	0.00	0.00	0.00		
Total	9,547.00	0.00	0.00	30,487,600	30,487,600

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Government Office Building	12.28	0.00	0.00	100.00	0.00	0.00	100	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Government Office Building	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Parking Lot	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776

5.0 Energy Detail

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	5,509.0545	5,509.0545	0.2706	0.0560	5,532.5070
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,509.0545	5,509.0545	0.2706	0.0560	5,532.5070
NaturalGas Mitigated	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
NaturalGas Unmitigated	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970

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					
Enclosed Parking with Elevator	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
Government Office Building	1.34647e+007	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
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		**0.0726**	**0.6600**	**0.5544**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**	**0.0000**	**718.5271**	**718.5271**	**0.0138**	**0.0132**	**722.7970**

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					
Enclosed Parking with Elevator	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
Government Office Building	1.34647e+007	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
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		**0.0726**	**0.6600**	**0.5544**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**	**0.0000**	**718.5271**	**718.5271**	**0.0138**	**0.0132**	**722.7970**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.90944e +006	511.2719	0.0251	5.2000e-003	513.4484
Government Office Building	1.86092e +007	4,982.788 1	0.2448	0.0507	5,004.000 2
Parking Lot	56000	14.9946	7.4000e-004	1.5000e-004	15.0584
Total		**5,509.054 5**	**0.2707**	**0.0560**	**5,532.507 0**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.90944e +006	511.2719	0.0251	5.2000e-003	513.4484
Government Office Building	1.86092e +007	4,982.788 1	0.2448	0.0507	5,004.000 2
Parking Lot	56000	14.9946	7.4000e-004	1.5000e-004	15.0584
Total		**5,509.054 5**	**0.2707**	**0.0560**	**5,532.507 0**

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Unmitigated	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755

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	0.5907					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6489					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3600e-003	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Total	**6.2430**	**3.3000e-004**	**0.0364**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0709**	**0.0709**	**1.9000e-004**	**0.0000**	**0.0755**

6.2 Area by SubCategory

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	0.5907					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6489					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3600e-003	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Total	**6.2430**	**3.3000e-004**	**0.0364**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0709**	**0.0709**	**1.9000e-004**	**0.0000**	**0.0755**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	645.8368	0.3744	0.2252	722.3012
Unmitigated	645.8368	0.3744	0.2252	722.3012

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Government Office Building	285.474 / 174.968	645.8368	0.3744	0.2252	722.3012
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**645.8368**	**0.3744**	**0.2252**	**722.3012**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Government Office Building	285.474 / 174.968	645.8368	0.3744	0.2252	722.3012
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**645.8368**	**0.3744**	**0.2252**	**722.3012**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	271.2792	16.0321	0.0000	672.0826
Unmitigated	271.2792	16.0321	0.0000	672.0826

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Government Office Building	1336.41	271.2792	16.0321	0.0000	672.0826
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**271.2792**	**16.0321**	**0.0000**	**672.0826**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Government Office Building	1336.41	271.2792	16.0321	0.0000	672.0826
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**271.2792**	**16.0321**	**0.0000**	**672.0826**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	6	1341.02	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Total	**0.0132**	**0.0591**	**0.0337**	**6.0000e-005**		**1.9400e-003**	**1.9400e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**6.1278**	**6.1278**	**8.6000e-004**	**0.0000**	**6.1493**

11.0 Vegetation

DGS Richards

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,437.00	1000sqft	32.99	1,437,000.00	0
Enclosed Parking with Elevator	1,020.00	Space	9.18	408,000.00	0
Parking Lot	400.00	Space	3.60	160,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2024
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project specific construction schedule.

Off-road Equipment - Assumed construction equipment.

Off-road Equipment - Assumed construction equipment

Off-road Equipment - no demolition phase

Off-road Equipment - Project specific construction equipment

Off-road Equipment - Project specific construction equipment

Off-road Equipment -

Trips and VMT - Project specific construction trips

Grading -

Architectural Coating - Assumed half of the exerior of the building will need to be painted.

Vehicle Trips - VMT estimates include mid-day employee travel, visitor travel, and service/delivery travel so all were calculated as Non Res C-W trip length

Area Coating - According to the project engineer, about half of the exterior portion of the building will be painted.

Energy Use - Assumed Title 24 2019 standards would use 30 percent less energy than those under the 2016 standards.

Construction Off-road Equipment Mitigation - Tier 4 Interim engines as mitigation

Stationary Sources - Emergency Generators and Fire Pumps - Two emergency generators will be installed in the the CUP.

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	718,500.00	359,250.00
tblAreaCoating	Area_Nonresidential_Exterior	718500	359250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	55.00	10.00
tblConstructionPhase	NumDays	740.00	769.00
tblConstructionPhase	NumDays	75.00	41.00
tblConstructionPhase	NumDays	55.00	21.00
tblConstructionPhase	NumDays	30.00	202.00
tblEnergyUse	T24E	3.92	2.74

tblEnergyUse	T24E	4.98	3.49
tblEnergyUse	T24NG	12.42	8.69
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,564.00
tblTripsAndVMT	VendorTripNumber	329.00	200.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	40.00
tblTripsAndVMT	WorkerTripNumber	140.00	20.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TTP	62.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CW_TL	10.00	12.28

tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	34.00	0.00
tblVehicleTrips	PB_TP	16.00	0.00
tblVehicleTrips	PR_TP	50.00	100.00
tblVehicleTrips	WD_TR	68.93	6.64

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					
2020	1.0076	8.5495	10.3149	0.0159	0.3801	0.5349	0.9150	0.1008	0.4921	0.5929	0.0000	1,544.7828	1,544.7828	0.3981	0.0000	1,554.7357
2021	12.6066	129.6607	94.7459	0.2738	20.0429	3.1342	23.1771	8.2758	2.9597	11.1672	0.0000	28,406.0313	28,406.0313	3.9087	0.0000	28,503.7476
2022	11.6250	75.4708	90.5285	0.2513	14.4672	2.6851	17.1523	3.8633	2.5633	6.4265	0.0000	24,847.2780	24,847.2780	2.1649	0.0000	24,901.4000
2023	10.7623	68.0970	86.5852	0.2462	14.4670	2.3456	16.8127	3.8632	2.2382	6.1014	0.0000	24,337.4267	24,337.4267	2.0853	0.0000	24,389.5585
2024	1,181.6956	64.2397	83.5349	0.2417	14.4669	2.0732	16.5401	3.8632	1.9766	5.8398	0.0000	23,893.4865	23,893.4865	2.0408	0.0000	23,944.5073
Maximum	**1,181.6956**	**129.6607**	**94.7459**	**0.2738**	**20.0429**	**3.1342**	**23.1771**	**8.2758**	**2.9597**	**11.1672**	**0.0000**	**28,406.0313**	**28,406.0313**	**3.9087**	**0.0000**	**28,503.7476**

2.1 Overall Construction (Maximum Daily Emission)

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					
2020	0.4481	5.5474	10.5644	0.0159	0.3801	0.0227	0.4028	0.1008	0.0225	0.1233	0.0000	1,544.7828	1,544.7828	0.3981	0.0000	1,554.7357
2021	7.8799	89.8745	101.0297	0.2738	20.0429	0.4508	20.4060	8.2758	0.4417	8.6292	0.0000	28,406.0313	28,406.0313	3.9087	0.0000	28,503.7476
2022	7.4947	57.9917	97.4960	0.2513	14.4672	0.4415	14.9087	3.8633	0.4329	4.2962	0.0000	24,847.2780	24,847.2780	2.1649	0.0000	24,901.4000
2023	7.0615	54.6153	93.9883	0.2462	14.4670	0.4128	14.8799	3.8632	0.4055	4.2687	0.0000	24,337.4267	24,337.4267	2.0853	0.0000	24,389.5585
2024	1,181.5693	53.9915	91.3107	0.2417	14.4669	0.4097	14.8766	3.8632	0.4026	4.2658	0.0000	23,893.4865	23,893.4865	2.0408	0.0000	23,944.5073
Maximum	**1,181.5693**	**89.8745**	**101.0297**	**0.2738**	**20.0429**	**0.4508**	**20.4060**	**8.2758**	**0.4417**	**8.6292**	**0.0000**	**28,406.0313**	**28,406.0313**	**3.9087**	**0.0000**	**28,503.7476**

	ROG	**NOx**	**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	**1.09**	**24.28**	**-7.84**	**0.00**	**0.00**	**83.87**	**12.23**	**0.00**	**83.33**	**28.36**	**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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Energy	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
Mobile	15.9231	78.8457	246.9101	0.8938	90.4829	0.6932	91.1761	24.1797	0.6461	24.8259		90,727.7691	90,727.7691	3.8213		90,823.3026
Stationary	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	**50.5375**	**82.4650**	**250.2393**	**0.9155**	**90.4829**	**0.9691**	**91.4520**	**24.1797**	**0.9220**	**25.1018**		**95,068.3428**	**95,068.3428**	**3.9062**	**0.0796**	**95,189.7072**

2.2 Overall Operational

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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Energy	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
Mobile	15.9231	78.8457	246.9101	0.8938	90.4829	0.6932	91.1761	24.1797	0.6461	24.8259		90,727.7691	90,727.7691	3.8213		90,823.3026
Stationary	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	**50.5375**	**82.4650**	**250.2393**	**0.9155**	**90.4829**	**0.9691**	**91.4520**	**24.1797**	**0.9220**	**25.1018**		**95,068.3428**	**95,068.3428**	**3.9062**	**0.0796**	**95,189.7072**

	ROG	NOx	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	GeoTech and Foundation Investigation	Site Preparation	3/25/2020	12/31/2020	5	202	
2	Excavate Foundations and Pile Claps	Grading	1/1/2021	2/28/2021	5	41	
3	Building Construction	Building Construction	3/1/2021	2/8/2024	5	769	
4	Paving	Paving	2/9/2024	3/9/2024	5	21	
5	Architectural Coating	Architectural Coating	3/10/2024	3/24/2024	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 12.78

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,155,500; Non-Residential Outdoor: 359,250; Striped Parking Area: 34,080 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
GeoTech and Foundation Investigation	Rubber Tired Dozers	0	8.00	247	0.40
GeoTech and Foundation Investigation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavate Foundations and Pile Claps	Excavators	4	8.00	158	0.38
Excavate Foundations and Pile Claps	Graders	2	8.00	187	0.41
Excavate Foundations and Pile Claps	Rubber Tired Dozers	2	8.00	247	0.40
Excavate Foundations and Pile Claps	Scrapers	2	8.00	367	0.48
Excavate Foundations and Pile Claps	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	5	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	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
GeoTech and Foundation Investigati	4	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Excavate Foundations and Pile Claps	12	40.00	0.00	9,564.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	24	698.00	200.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 GeoTech and Foundation Investigation - 2020

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8380	8.4206	9.1188	0.0124		0.5325	0.5325		0.4899	0.4899		1,203.0740	1,203.0740	0.3891		1,212.8015
Total	**0.8380**	**8.4206**	**9.1188**	**0.0124**	**0.0000**	**0.5325**	**0.5325**	**0.0000**	**0.4899**	**0.4899**		**1,203.0740**	**1,203.0740**	**0.3891**		**1,212.8015**

3.2 GeoTech and Foundation Investigation - 2020

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	0.1695	0.1290	1.1961	3.4300e-003	0.3801	2.4500e-003	0.3825	0.1008	2.2600e-003	0.1030		341.7088	341.7088	9.0200e-003		341.9342
Total	**0.1695**	**0.1290**	**1.1961**	**3.4300e-003**	**0.3801**	**2.4500e-003**	**0.3825**	**0.1008**	**2.2600e-003**	**0.1030**		**341.7088**	**341.7088**	**9.0200e-003**		**341.9342**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2785	5.4184	9.3683	0.0124		0.0203	0.0203		0.0203	0.0203	0.0000	1,203.0740	1,203.0740	0.3891		1,212.8015
Total	**0.2785**	**5.4184**	**9.3683**	**0.0124**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**1,203.0740**	**1,203.0740**	**0.3891**		**1,212.8015**

3.2 GeoTech and Foundation Investigation - 2020

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	0.1695	0.1290	1.1961	3.4300e-003	0.3801	2.4500e-003	0.3825	0.1008	2.2600e-003	0.1030		341.7088	341.7088	9.0200e-003		341.9342
Total	**0.1695**	**0.1290**	**1.1961**	**3.4300e-003**	**0.3801**	**2.4500e-003**	**0.3825**	**0.1008**	**2.2600e-003**	**0.1030**		**341.7088**	**341.7088**	**9.0200e-003**		**341.9342**

3.3 Excavate Foundations and Pile Claps - 2021

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					15.2257	0.0000	15.2257	6.9640	0.0000	6.9640			0.0000			0.0000
Off-Road	6.1489	67.6025	43.2270	0.0875		2.9144	2.9144		2.6812	2.6812		8,476.4637	8,476.4637	2.7415		8,545.0002
Total	**6.1489**	**67.6025**	**43.2270**	**0.0875**	**15.2257**	**2.9144**	**18.1400**	**6.9640**	**2.6812**	**9.6452**		**8,476.4637**	**8,476.4637**	**2.7415**		**8,545.0002**

3.3 Excavate Foundations and Pile Claps - 2021

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	1.6914	61.8267	14.6406	0.1797	4.0571	0.2151	4.2722	1.1102	0.2058	1.3160		19,269.4671	19,269.4671	1.1510		19,298.2426
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	0.3165	0.2315	2.1890	6.6200e-003	0.7601	4.7600e-003	0.7649	0.2016	4.3800e-003	0.2059		660.1005	660.1005	0.0162		660.5048
Total	**2.0079**	**62.0582**	**16.8296**	**0.1863**	**4.8172**	**0.2199**	**5.0371**	**1.3118**	**0.2102**	**1.5220**		**19,929.5676**	**19,929.5676**	**1.1672**		**19,958.7474**

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					15.2257	0.0000	15.2257	6.9640	0.0000	6.9640			0.0000			0.0000
Off-Road	1.3857	27.8163	52.6050	0.0875		0.1432	0.1432		0.1432	0.1432	0.0000	8,476.4637	8,476.4637	2.7415		8,545.0002
Total	**1.3857**	**27.8163**	**52.6050**	**0.0875**	**15.2257**	**0.1432**	**15.3689**	**6.9640**	**0.1432**	**7.1072**	**0.0000**	**8,476.4637**	**8,476.4637**	**2.7415**		**8,545.0002**

3.3 Excavate Foundations and Pile Claps - 2021

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	1.6914	61.8267	14.6406	0.1797	4.0571	0.2151	4.2722	1.1102	0.2058	1.3160		19,269.4671	19,269.4671	1.1510		19,298.2426
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	0.3165	0.2315	2.1890	6.6200e-003	0.7601	4.7600e-003	0.7649	0.2016	4.3800e-003	0.2059		660.1005	660.1005	0.0162		660.5048
Total	**2.0079**	**62.0582**	**16.8296**	**0.1863**	**4.8172**	**0.2199**	**5.0371**	**1.3118**	**0.2102**	**1.5220**		**19,929.5676**	**19,929.5676**	**1.1672**		**19,958.7474**

3.4 Building Construction - 2021

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	6.4290	58.2996	50.5988	0.0923		2.9598	2.9598		2.8273	2.8273		8,690.6481	8,690.6481	1.6321		8,731.4514
Total	**6.4290**	**58.2996**	**50.5988**	**0.0923**		**2.9598**	**2.9598**		**2.8273**	**2.8273**		**8,690.6481**	**8,690.6481**	**1.6321**		**8,731.4514**

3.4 Building Construction - 2021

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	0.6547	20.4185	5.9491	0.0481	1.2035	0.0585	1.2620	0.3463	0.0560	0.4023		5,095.0413	5,095.0413	0.3095		5,102.7795
Worker	5.5228	4.0396	38.1981	0.1156	13.2639	0.0830	13.3469	3.5170	0.0765	3.5935		11,518.7533	11,518.7533	0.2822		11,525.8079
Total	**6.1776**	**24.4581**	**44.1472**	**0.1637**	**14.4673**	**0.1415**	**14.6089**	**3.8633**	**0.1325**	**3.9958**		**16,613.7946**	**16,613.7946**	**0.5917**		**16,628.5874**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,690.6481	8,690.6481	1.6321		8,731.4514
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,690.6481**	**8,690.6481**	**1.6321**		**8,731.4514**

3.4 Building Construction - 2021

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	0.6547	20.4185	5.9491	0.0481	1.2035	0.0585	1.2620	0.3463	0.0560	0.4023		5,095.0413	5,095.0413	0.3095		5,102.7795
Worker	5.5228	4.0396	38.1981	0.1156	13.2639	0.0830	13.3469	3.5170	0.0765	3.5935		11,518.7533	11,518.7533	0.2822		11,525.8079
Total	**6.1776**	**24.4581**	**44.1472**	**0.1637**	**14.4673**	**0.1415**	**14.6089**	**3.8633**	**0.1325**	**3.9958**		**16,613.7946**	**16,613.7946**	**0.5917**		**16,628.5874**

3.4 Building Construction - 2022

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	5.8326	52.4553	49.9150	0.0923		2.5529	2.5529		2.4396	2.4396		8,691.9383	8,691.9383	1.6106		8,732.2042
Total	**5.8326**	**52.4553**	**49.9150**	**0.0923**		**2.5529**	**2.5529**		**2.4396**	**2.4396**		**8,691.9383**	**8,691.9383**	**1.6106**		**8,732.2042**

3.4 Building Construction - 2022

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	0.6077	19.3782	5.4866	0.0476	1.2033	0.0514	1.2547	0.3463	0.0492	0.3954		5,049.7698	5,049.7698	0.3007		5,057.2883
Worker	5.1847	3.6374	35.1270	0.1114	13.2639	0.0808	13.3447	3.5170	0.0745	3.5915		11,105.5699	11,105.5699	0.2535		11,111.9076
Total	**5.7924**	**23.0155**	**40.6135**	**0.1591**	**14.4672**	**0.1322**	**14.5994**	**3.8633**	**0.1236**	**3.9869**		**16,155.3397**	**16,155.3397**	**0.5543**		**16,169.1958**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,691.9383	8,691.9383	1.6106		8,732.2042
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,691.9383**	**8,691.9383**	**1.6106**		**8,732.2042**

3.4 Building Construction - 2022

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	0.6077	19.3782	5.4866	0.0476	1.2033	0.0514	1.2547	0.3463	0.0492	0.3954		5,049.769 8	5,049.769 8	0.3007		5,057.288 3
Worker	5.1847	3.6374	35.1270	0.1114	13.2639	0.0808	13.3447	3.5170	0.0745	3.5915		11,105.569 9	11,105.569 9	0.2535		11,111.907 6
Total	**5.7924**	**23.0155**	**40.6135**	**0.1591**	**14.4672**	**0.1322**	**14.5994**	**3.8633**	**0.1236**	**3.9869**		**16,155.33 97**	**16,155.33 97**	**0.5543**		**16,169.19 58**

3.4 Building Construction - 2023

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	5.4031	48.4577	49.4795	0.0923		2.2421	2.2421		2.1419	2.1419		8,692.775 8	8,692.775 8	1.5890		8,732.500 5
Total	**5.4031**	**48.4577**	**49.4795**	**0.0923**		**2.2421**	**2.2421**		**2.1419**	**2.1419**		**8,692.775 8**	**8,692.775 8**	**1.5890**		**8,732.500 5**

3.4 Building Construction - 2023

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	0.4816	16.3628	4.8351	0.0467	1.2032	0.0248	1.2279	0.3462	0.0237	0.3699		4,956.634 7	4,956.634 7	0.2693		4,963.366 4
Worker	4.8776	3.2764	32.2706	0.1072	13.2639	0.0788	13.3427	3.5170	0.0726	3.5896		10,688.01 62	10,688.01 62	0.2270		10,693.69 16
Total	**5.3592**	**19.6392**	**37.1057**	**0.1539**	**14.4670**	**0.1036**	**14.5706**	**3.8632**	**0.0963**	**3.9595**		**15,644.65 09**	**15,644.65 09**	**0.4963**		**15,657.05 80**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,692.775 8	8,692.775 8	1.5890		8,732.500 5
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,692.775 8**	**8,692.775 8**	**1.5890**		**8,732.500 5**

3.4 Building Construction - 2023

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	0.4816	16.3628	4.8351	0.0467	1.2032	0.0248	1.2279	0.3462	0.0237	0.3699		4,956.6347	4,956.6347	0.2693		4,963.3664
Worker	4.8776	3.2764	32.2706	0.1072	13.2639	0.0788	13.3427	3.5170	0.0726	3.5896		10,688.0162	10,688.0162	0.2270		10,693.6916
Total	**5.3592**	**19.6392**	**37.1057**	**0.1539**	**14.4670**	**0.1036**	**14.5706**	**3.8632**	**0.0963**	**3.9595**		**15,644.6509**	**15,644.6509**	**0.4963**		**15,657.0580**

3.4 Building Construction - 2024

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	5.0480	45.2243	49.1067	0.0923		1.9727	1.9727		1.8832	1.8832		8,693.2231	8,693.2231	1.5701		8,732.4765
Total	**5.0480**	**45.2243**	**49.1067**	**0.0923**		**1.9727**	**1.9727**		**1.8832**	**1.8832**		**8,693.2231**	**8,693.2231**	**1.5701**		**8,732.4765**

3.4 Building Construction - 2024

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	0.4586	16.0501	4.5186	0.0464	1.2031	0.0234	1.2265	0.3462	0.0224	0.3686		4,928.1461	4,928.1461	0.2660		4,934.7961
Worker	4.6110	2.9653	29.9095	0.1030	13.2639	0.0770	13.3409	3.5170	0.0709	3.5880		10,272.1173	10,272.1173	0.2047		10,277.2348
Total	**5.0696**	**19.0153**	**34.4281**	**0.1494**	**14.4669**	**0.1005**	**14.5674**	**3.8632**	**0.0934**	**3.9565**		**15,200.2634**	**15,200.2634**	**0.4707**		**15,212.0308**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,693.2231	8,693.2231	1.5701		8,732.4765
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,693.2231**	**8,693.2231**	**1.5701**		**8,732.4765**

3.4 Building Construction - 2024

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	0.4586	16.0501	4.5186	0.0464	1.2031	0.0234	1.2265	0.3462	0.0224	0.3686		4,928.1461	4,928.1461	0.2660		4,934.7961
Worker	4.6110	2.9653	29.9095	0.1030	13.2639	0.0770	13.3409	3.5170	0.0709	3.5880		10,272.1173	10,272.1173	0.2047		10,277.2348
Total	**5.0696**	**19.0153**	**34.4281**	**0.1494**	**14.4669**	**0.1005**	**14.5674**	**3.8632**	**0.0934**	**3.9565**		**15,200.2634**	**15,200.2634**	**0.4707**		**15,212.0308**

3.5 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.4491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4373**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

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	0.0991	0.0637	0.6428	2.2100e-003	0.2850	1.6600e-003	0.2867	0.0756	1.5200e-003	0.0771		220.7475	220.7475	4.4000e-003		220.8575
Total	**0.0991**	**0.0637**	**0.6428**	**2.2100e-003**	**0.2850**	**1.6600e-003**	**0.2867**	**0.0756**	**1.5200e-003**	**0.0771**		**220.7475**	**220.7475**	**4.4000e-003**		**220.8575**

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	0.3341	10.0395	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.4491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7832**	**10.0395**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.5 Paving - 2024

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	0.0991	0.0637	0.6428	2.2100e-003	0.2850	1.6600e-003	0.2867	0.0756	1.5200e-003	0.0771		220.7475	220.7475	4.4000e-003		220.8575
Total	**0.0991**	**0.0637**	**0.6428**	**2.2100e-003**	**0.2850**	**1.6600e-003**	**0.2867**	**0.0756**	**1.5200e-003**	**0.0771**		**220.7475**	**220.7475**	**4.4000e-003**		**220.8575**

3.6 Architectural Coating - 2024

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	1,181.3827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**1,181.5635**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

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	0.1321	0.0850	0.8570	2.9500e-003	0.3801	2.2100e-003	0.3823	0.1008	2.0300e-003	0.1028		294.3300	294.3300	5.8700e-003		294.4766
Total	**0.1321**	**0.0850**	**0.8570**	**2.9500e-003**	**0.3801**	**2.2100e-003**	**0.3823**	**0.1008**	**2.0300e-003**	**0.1028**		**294.3300**	**294.3300**	**5.8700e-003**		**294.4766**

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	1,181.3827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0545	1.0598	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**1,181.4372**	**1.0598**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

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	0.1321	0.0850	0.8570	2.9500e-003	0.3801	2.2100e-003	0.3823	0.1008	2.0300e-003	0.1028		294.3300	294.3300	5.8700e-003		294.4766
Total	**0.1321**	**0.0850**	**0.8570**	**2.9500e-003**	**0.3801**	**2.2100e-003**	**0.3823**	**0.1008**	**2.0300e-003**	**0.1028**		**294.3300**	**294.3300**	**5.8700e-003**		**294.4766**

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	15.9231	78.8457	246.9101	0.8938	90.4829	0.6932	91.1761	24.1797	0.6461	24.8259		90,727.7691	90,727.7691	3.8213		90,823.3026
Unmitigated	15.9231	78.8457	246.9101	0.8938	90.4829	0.6932	91.1761	24.1797	0.6461	24.8259		90,727.7691	90,727.7691	3.8213		90,823.3026

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Government Office Building	9,547.00	0.00	0.00	30,487,600	30,487,600
Parking Lot	0.00	0.00	0.00		
Total	9,547.00	0.00	0.00	30,487,600	30,487,600

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Government Office Building	12.28	0.00	0.00	100.00	0.00	0.00	100	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Government Office Building	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Parking Lot	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776

5.0 Energy Detail

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	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
NaturalGas Unmitigated	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386

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					
Enclosed Parking with Elevator	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
Government Office Building	36889.6	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
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		**0.3978**	**3.6166**	**3.0380**	**0.0217**		**0.2749**	**0.2749**		**0.2749**	**0.2749**		**4,339.9484**	**4,339.9484**	**0.0832**	**0.0796**	**4,365.7386**

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					
Enclosed Parking with Elevator	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
Government Office Building	36.8896	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
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		**0.3978**	**3.6166**	**3.0380**	**0.0217**		**0.2749**	**0.2749**		**0.2749**	**0.2749**		**4,339.9484**	**4,339.9484**	**0.0832**	**0.0796**	**4,365.7386**

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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Unmitigated	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661

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	3.2367					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	30.9530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0269	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Total	**34.2165**	**2.6400e-003**	**0.2912**	**2.0000e-005**		**1.0400e-003**	**1.0400e-003**		**1.0400e-003**	**1.0400e-003**		**0.6253**	**0.6253**	**1.6300e-003**		**0.6661**

6.2 Area by SubCategory

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	3.2367					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	30.9530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0269	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Total	**34.2165**	**2.6400e-003**	**0.2912**	**2.0000e-005**		**1.0400e-003**	**1.0400e-003**		**1.0400e-003**	**1.0400e-003**		**0.6253**	**0.6253**	**1.6300e-003**		**0.6661**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	6	1341.02	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

DGS Richards

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,437.00	1000sqft	32.99	1,437,000.00	0
Enclosed Parking with Elevator	1,020.00	Space	9.18	408,000.00	0
Parking Lot	400.00	Space	3.60	160,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2024
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project specific construction schedule.

Off-road Equipment - Assumed construction equipment.

Off-road Equipment - Assumed construction equipment

Off-road Equipment - no demolition phase

Off-road Equipment - Project specific construction equipment

Off-road Equipment - Project specific construction equipment

Off-road Equipment -

Trips and VMT - Project specific construction trips

Grading -

Architectural Coating - Assumed half of the exerior of the building will need to be painted.

Vehicle Trips - VMT estimates include mid-day employee travel, visitor travel, and service/delivery travel so all were calculated as Non Res C-W trip length

Area Coating - According to the project engineer, about half of the exterior portion of the building will be painted.

Energy Use - Assumed Title 24 2019 standards would use 30 percent less energy than those under the 2016 standards.

Construction Off-road Equipment Mitigation - Tier 4 Interim engines as mitigation

Stationary Sources - Emergency Generators and Fire Pumps - Two emergency generators will be installed in the the CUP.

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	718,500.00	359,250.00
tblAreaCoating	Area_Nonresidential_Exterior	718500	359250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	30.00	202.00
tblConstructionPhase	NumDays	75.00	41.00
tblConstructionPhase	NumDays	740.00	769.00
tblConstructionPhase	NumDays	55.00	21.00
tblConstructionPhase	NumDays	55.00	10.00
tblEnergyUse	T24E	3.92	2.74

tblEnergyUse	T24E	4.98	3.49
tblEnergyUse	T24NG	12.42	8.69
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,564.00
tblTripsAndVMT	VendorTripNumber	329.00	200.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	40.00
tblTripsAndVMT	WorkerTripNumber	140.00	20.00

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					
2020	0.1000	0.8621	1.0444	1.6100e-003	0.0371	0.0540	0.0911	9.8500e-003	0.0497	0.0596	0.0000	142.4719	142.4719	0.0365	0.0000	143.3845
2021	1.4882	11.7124	11.6846	0.0343	1.9451	0.4051	2.3502	0.5806	0.3846	0.9651	0.0000	3,098.9771	3,098.9771	0.2936	0.0000	3,106.3179
2022	1.4390	9.7671	11.8218	0.0332	1.8167	0.3488	2.1656	0.4865	0.3330	0.8195	0.0000	2,978.4020	2,978.4020	0.2548	0.0000	2,984.7713
2023	1.3305	8.8145	11.3175	0.0325	1.8167	0.3048	2.1215	0.4865	0.2908	0.7773	0.0000	2,916.6015	2,916.6015	0.2456	0.0000	2,922.7405
2024	6.0638	1.0348	1.3921	3.8500e-003	0.2074	0.0353	0.2427	0.0555	0.0335	0.0890	0.0000	345.1438	345.1438	0.0337	0.0000	345.9874
Maximum	**6.0638**	**11.7124**	**11.8218**	**0.0343**	**1.9451**	**0.4051**	**2.3502**	**0.5806**	**0.3846**	**0.9651**	**0.0000**	**3,098.9771**	**3,098.9771**	**0.2936**	**0.0000**	**3,106.3179**

2.1 Overall Construction

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					
2020	0.0435	0.5589	1.0696	1.6100e-003	0.0371	2.2900e-003	0.0394	9.8500e-003	2.2700e-003	0.0121	0.0000	142.4718	142.4718	0.0365	0.0000	143.3844
2021	0.8706	8.3312	12.5681	0.0343	1.9451	0.0567	2.0018	0.5806	0.0556	0.6361	0.0000	3,098.9759	3,098.9759	0.2936	0.0000	3,106.3167
2022	0.9021	7.4948	12.7275	0.0332	1.8167	0.0572	1.8739	0.4865	0.0561	0.5426	0.0000	2,978.4008	2,978.4008	0.2548	0.0000	2,984.7700
2023	0.8494	7.0619	12.2799	0.0325	1.8167	0.0535	1.8702	0.4865	0.0526	0.5391	0.0000	2,916.6003	2,916.6003	0.2456	0.0000	2,922.7393
2024	6.0078	0.8908	1.5330	3.8500e-003	0.2074	6.3700e-003	0.2137	0.0555	6.2600e-003	0.0618	0.0000	345.1436	345.1436	0.0337	0.0000	345.9873
Maximum	**6.0078**	**8.3312**	**12.7275**	**0.0343**	**1.9451**	**0.0572**	**2.0018**	**0.5806**	**0.0561**	**0.6361**	**0.0000**	**3,098.9759**	**3,098.9759**	**0.2936**	**0.0000**	**3,106.3167**

	ROG	**NOx**	**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	**16.77**	**24.40**	**-7.83**	**0.00**	**0.00**	**84.66**	**13.94**	**0.00**	**84.18**	**33.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**3-1-2021**	**5-31-2021**	3.1051	2.1835
2	**6-1-2021**	**8-31-2021**	3.0907	2.1691
3	**9-1-2021**	**11-30-2021**	3.0854	2.1738
4	**12-1-2021**	**2-28-2022**	2.8911	2.1252
5	**3-1-2022**	**5-31-2022**	2.8362	2.1262
6	**6-1-2022**	**8-31-2022**	2.8232	2.1132

7	**9-1-2022**	**11-30-2022**	2.8181	2.1157
8	**12-1-2022**	**2-28-2023**	2.6260	2.0246
9	**3-1-2023**	**5-31-2023**	2.5696	2.0051
10	**6-1-2023**	**8-31-2023**	2.5587	1.9942
11	**9-1-2023**	**11-30-2023**	2.5524	1.9939
12	**12-1-2023**	**2-29-2024**	1.9922	1.6116
13	**3-1-2024**	**5-31-2024**	6.3733	6.3713
		Highest	6.3733	6.3713

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	6,227.5817	6,227.5817	0.2844	0.0692	6,255.3040
Mobile	15.0733	57.8872	138.4374	0.4272	37.9139	0.3526	38.2665	10.1608	0.3284	10.4892	0.0000	39,352.3290	39,352.3290	1.9111	0.0000	39,400.1054
Stationary	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Waste						0.0000	0.0000		0.0000	0.0000	271.2792	0.0000	271.2792	16.0321	0.0000	672.0826
Water						0.0000	0.0000		0.0000	0.0000	101.0011	544.8357	645.8368	0.3744	0.2252	722.3012
Total	**21.4021**	**58.6066**	**139.0619**	**0.4312**	**37.9139**	**0.4049**	**38.3188**	**10.1608**	**0.3806**	**10.5414**	**372.2803**	**46,130.9450**	**46,503.2253**	**18.6031**	**0.2944**	**47,056.0180**

2.2 Overall Operational

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	6,227.5817	6,227.5817	0.2844	0.0692	6,255.3040
Mobile	15.0733	57.8872	138.4374	0.4272	37.9139	0.3526	38.2665	10.1608	0.3284	10.4892	0.0000	39,352.3290	39,352.3290	1.9111	0.0000	39,400.1054
Stationary	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Waste						0.0000	0.0000		0.0000	0.0000	271.2792	0.0000	271.2792	16.0321	0.0000	672.0826
Water						0.0000	0.0000		0.0000	0.0000	101.0011	544.8357	645.8368	0.3744	0.2252	722.3012
Total	**21.4021**	**58.6066**	**139.0619**	**0.4312**	**37.9139**	**0.4049**	**38.3188**	**10.1608**	**0.3806**	**10.5414**	**372.2803**	**46,130.9450**	**46,503.2253**	**18.6031**	**0.2944**	**47,056.0180**

	ROG	**NOx**	**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	GeoTech and Foundation Investigation	Site Preparation	3/25/2020	12/31/2020	5	202	
2	Excavate Foundations and Pile Claps	Grading	1/1/2021	2/28/2021	5	41	
3	Building Construction	Building Construction	3/1/2021	2/8/2024	5	769	
4	Paving	Paving	2/9/2024	3/9/2024	5	21	
5	Architectural Coating	Architectural Coating	3/10/2024	3/24/2024	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 12.78

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,155,500; Non-Residential Outdoor: 359,250; Striped Parking Area: 34,080 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
GeoTech and Foundation Investigation	Rubber Tired Dozers	0	8.00	247	0.40
GeoTech and Foundation Investigation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavate Foundations and Pile Claps	Excavators	4	8.00	158	0.38
Excavate Foundations and Pile Claps	Graders	2	8.00	187	0.41
Excavate Foundations and Pile Claps	Rubber Tired Dozers	2	8.00	247	0.40
Excavate Foundations and Pile Claps	Scrapers	2	8.00	367	0.48
Excavate Foundations and Pile Claps	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	5	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	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
GeoTech and Foundation Investigati	4	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Excavate Foundations and Pile Claps	12	40.00	0.00	9,564.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	24	698.00	200.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 GeoTech and Foundation Investigation - 2020

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0846	0.8505	0.9210	1.2500e-003		0.0538	0.0538		0.0495	0.0495	0.0000	110.2325	110.2325	0.0357	0.0000	111.1237
Total	**0.0846**	**0.8505**	**0.9210**	**1.2500e-003**	**0.0000**	**0.0538**	**0.0538**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**110.2325**	**110.2325**	**0.0357**	**0.0000**	**111.1237**

3.2 GeoTech and Foundation Investigation - 2020

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	0.0154	0.0116	0.1234	3.6000e-004	0.0371	2.5000e-004	0.0373	9.8500e-003	2.3000e-004	0.0101	0.0000	32.2395	32.2395	8.5000e-004	0.0000	32.2608
Total	**0.0154**	**0.0116**	**0.1234**	**3.6000e-004**	**0.0371**	**2.5000e-004**	**0.0373**	**9.8500e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.2395**	**32.2395**	**8.5000e-004**	**0.0000**	**32.2608**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0281	0.5473	0.9462	1.2500e-003		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	110.2323	110.2323	0.0357	0.0000	111.1236
Total	**0.0281**	**0.5473**	**0.9462**	**1.2500e-003**	**0.0000**	**2.0500e-003**	**2.0500e-003**	**0.0000**	**2.0500e-003**	**2.0500e-003**	**0.0000**	**110.2323**	**110.2323**	**0.0357**	**0.0000**	**111.1236**

3.2 GeoTech and Foundation Investigation - 2020

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	0.0154	0.0116	0.1234	3.6000e-004	0.0371	2.5000e-004	0.0373	9.8500e-003	2.3000e-004	0.0101	0.0000	32.2395	32.2395	8.5000e-004	0.0000	32.2608
Total	**0.0154**	**0.0116**	**0.1234**	**3.6000e-004**	**0.0371**	**2.5000e-004**	**0.0373**	**9.8500e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.2395**	**32.2395**	**8.5000e-004**	**0.0000**	**32.2608**

3.3 Excavate Foundations and Pile Claps - 2021

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					0.3121	0.0000	0.3121	0.1428	0.0000	0.1428	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1261	1.3859	0.8862	1.7900e-003		0.0597	0.0597		0.0550	0.0550	0.0000	157.6392	157.6392	0.0510	0.0000	158.9138
Total	**0.1261**	**1.3859**	**0.8862**	**1.7900e-003**	**0.3121**	**0.0597**	**0.3719**	**0.1428**	**0.0550**	**0.1977**	**0.0000**	**157.6392**	**157.6392**	**0.0510**	**0.0000**	**158.9138**

3.3 Excavate Foundations and Pile Claps - 2021

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	0.0341	1.2619	0.2884	3.7200e-003	0.0807	4.3200e-003	0.0850	0.0221	4.1400e-003	0.0263	0.0000	361.6316	361.6316	0.0209	0.0000	362.1532
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	5.8300e-003	4.2400e-003	0.0459	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.6407	12.6407	3.1000e-004	0.0000	12.6485
Total	**0.0399**	**1.2661**	**0.3343**	**3.8600e-003**	**0.0957**	**4.4200e-003**	**0.1001**	**0.0261**	**4.2300e-003**	**0.0304**	**0.0000**	**374.2723**	**374.2723**	**0.0212**	**0.0000**	**374.8017**

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					0.3121	0.0000	0.3121	0.1428	0.0000	0.1428	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.5702	1.0784	1.7900e-003		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	157.6390	157.6390	0.0510	0.0000	158.9136
Total	**0.0284**	**0.5702**	**1.0784**	**1.7900e-003**	**0.3121**	**2.9400e-003**	**0.3151**	**0.1428**	**2.9400e-003**	**0.1457**	**0.0000**	**157.6390**	**157.6390**	**0.0510**	**0.0000**	**158.9136**

3.3 Excavate Foundations and Pile Claps - 2021

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	0.0341	1.2619	0.2884	3.7200e-003	0.0807	4.3200e-003	0.0850	0.0221	4.1400e-003	0.0263	0.0000	361.6316	361.6316	0.0209	0.0000	362.1532
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	5.8300e-003	4.2400e-003	0.0459	1.4000e-004	0.0150	1.0000e-004	0.0151	4.0000e-003	9.0000e-005	4.0900e-003	0.0000	12.6407	12.6407	3.1000e-004	0.0000	12.6485
Total	**0.0399**	**1.2661**	**0.3343**	**3.8600e-003**	**0.0957**	**4.4200e-003**	**0.1001**	**0.0261**	**4.2300e-003**	**0.0304**	**0.0000**	**374.2723**	**374.2723**	**0.0212**	**0.0000**	**374.8017**

3.4 Building Construction - 2021

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	0.7072	6.4130	5.5659	0.0102		0.3256	0.3256		0.3110	0.3110	0.0000	867.2426	867.2426	0.1629	0.0000	871.3144
Total	**0.7072**	**6.4130**	**5.5659**	**0.0102**		**0.3256**	**0.3256**		**0.3110**	**0.3110**	**0.0000**	**867.2426**	**867.2426**	**0.1629**	**0.0000**	**871.3144**

3.4 Building Construction - 2021

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	0.0692	2.2505	0.6015	5.3700e-003	0.1286	6.2200e-003	0.1348	0.0372	5.9500e-003	0.0431	0.0000	516.2181	516.2181	0.0295	0.0000	516.9560
Worker	0.5459	0.3970	4.2968	0.0131	1.4086	9.1300e-003	1.4178	0.3745	8.4200e-003	0.3829	0.0000	1,183.6049	1,183.6049	0.0291	0.0000	1,184.3320
Total	**0.6151**	**2.6475**	**4.8983**	**0.0185**	**1.5372**	**0.0154**	**1.5526**	**0.4117**	**0.0144**	**0.4260**	**0.0000**	**1,699.8230**	**1,699.8230**	**0.0586**	**0.0000**	**1,701.2880**

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	0.1873	3.8474	6.2571	0.0102		0.0340	0.0340		0.0340	0.0340	0.0000	867.2415	867.2415	0.1629	0.0000	871.3133
Total	**0.1873**	**3.8474**	**6.2571**	**0.0102**		**0.0340**	**0.0340**		**0.0340**	**0.0340**	**0.0000**	**867.2415**	**867.2415**	**0.1629**	**0.0000**	**871.3133**

3.4 Building Construction - 2021

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	0.0692	2.2505	0.6015	5.3700e-003	0.1286	6.2200e-003	0.1348	0.0372	5.9500e-003	0.0431	0.0000	516.2181	516.2181	0.0295	0.0000	516.9560
Worker	0.5459	0.3970	4.2968	0.0131	1.4086	9.1300e-003	1.4178	0.3745	8.4200e-003	0.3829	0.0000	1,183.6049	1,183.6049	0.0291	0.0000	1,184.3320
Total	**0.6151**	**2.6475**	**4.8983**	**0.0185**	**1.5372**	**0.0154**	**1.5526**	**0.4117**	**0.0144**	**0.4260**	**0.0000**	**1,699.8230**	**1,699.8230**	**0.0586**	**0.0000**	**1,701.2880**

3.4 Building Construction - 2022

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	0.7582	6.8192	6.4890	0.0120		0.3319	0.3319		0.3172	0.3172	0.0000	1,025.0752	1,025.0752	0.1900	0.0000	1,029.8239
Total	**0.7582**	**6.8192**	**6.4890**	**0.0120**		**0.3319**	**0.3319**		**0.3172**	**0.3172**	**0.0000**	**1,025.0752**	**1,025.0752**	**0.1900**	**0.0000**	**1,029.8239**

3.4 Building Construction - 2022

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	0.0759	2.5254	0.6555	6.2900e-003	0.1520	6.4500e-003	0.1584	0.0439	6.1700e-003	0.0501	0.0000	604.7133	604.7133	0.0339	0.0000	605.5605
Worker	0.6049	0.4225	4.6774	0.0149	1.6647	0.0105	1.6752	0.4426	9.6800e-003	0.4523	0.0000	1,348.6135	1,348.6135	0.0309	0.0000	1,349.3869
Total	**0.6808**	**2.9479**	**5.3328**	**0.0212**	**1.8167**	**0.0170**	**1.8337**	**0.4865**	**0.0159**	**0.5024**	**0.0000**	**1,953.3268**	**1,953.3268**	**0.0648**	**0.0000**	**1,954.9474**

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	0.2213	4.5469	7.3947	0.0120		0.0402	0.0402		0.0402	0.0402	0.0000	1,025.0740	1,025.0740	0.1900	0.0000	1,029.8227
Total	**0.2213**	**4.5469**	**7.3947**	**0.0120**		**0.0402**	**0.0402**		**0.0402**	**0.0402**	**0.0000**	**1,025.0740**	**1,025.0740**	**0.1900**	**0.0000**	**1,029.8227**

3.4 Building Construction - 2022

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	0.0759	2.5254	0.6555	6.2900e-003	0.1520	6.4500e-003	0.1584	0.0439	6.1700e-003	0.0501	0.0000	604.7133	604.7133	0.0339	0.0000	605.5605
Worker	0.6049	0.4225	4.6774	0.0149	1.6647	0.0105	1.6752	0.4426	9.6800e-003	0.4523	0.0000	1,348.6135	1,348.6135	0.0309	0.0000	1,349.3869
Total	**0.6808**	**2.9479**	**5.3328**	**0.0212**	**1.8167**	**0.0170**	**1.8337**	**0.4865**	**0.0159**	**0.5024**	**0.0000**	**1,953.3268**	**1,953.3268**	**0.0648**	**0.0000**	**1,954.9474**

3.4 Building Construction - 2023

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	0.7024	6.2995	6.4323	0.0120		0.2915	0.2915		0.2785	0.2785	0.0000	1,025.1740	1,025.1740	0.1874	0.0000	1,029.8589
Total	**0.7024**	**6.2995**	**6.4323**	**0.0120**		**0.2915**	**0.2915**		**0.2785**	**0.2785**	**0.0000**	**1,025.1740**	**1,025.1740**	**0.1874**	**0.0000**	**1,029.8589**

3.4 Building Construction - 2023

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	0.0600	2.1344	0.5799	6.1700e-003	0.1520	3.0700e-003	0.1550	0.0439	2.9300e-003	0.0469	0.0000	593.5361	593.5361	0.0304	0.0000	594.2961
Worker	0.5681	0.3806	4.3053	0.0144	1.6647	0.0102	1.6750	0.4426	9.4400e-003	0.4520	0.0000	1,297.8914	1,297.8914	0.0278	0.0000	1,298.5856
Total	**0.6281**	**2.5150**	**4.8852**	**0.0205**	**1.8167**	**0.0133**	**1.8300**	**0.4865**	**0.0124**	**0.4989**	**0.0000**	**1,891.4275**	**1,891.4275**	**0.0582**	**0.0000**	**1,892.8817**

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	tons/yr										MT/yr					
Off-Road	0.2213	4.5469	7.3947	0.0120		0.0402	0.0402		0.0402	0.0402	0.0000	1,025.1727	1,025.1727	0.1874	0.0000	1,029.8576
Total	**0.2213**	**4.5469**	**7.3947**	**0.0120**		**0.0402**	**0.0402**		**0.0402**	**0.0402**	**0.0000**	**1,025.1727**	**1,025.1727**	**0.1874**	**0.0000**	**1,029.8576**

3.4 Building Construction - 2023

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	0.0600	2.1344	0.5799	6.1700e-003	0.1520	3.0700e-003	0.1550	0.0439	2.9300e-003	0.0469	0.0000	593.5361	593.5361	0.0304	0.0000	594.2961
Worker	0.5681	0.3806	4.3053	0.0144	1.6647	0.0102	1.6750	0.4426	9.4400e-003	0.4520	0.0000	1,297.8914	1,297.8914	0.0278	0.0000	1,298.5856
Total	**0.6281**	**2.5150**	**4.8852**	**0.0205**	**1.8167**	**0.0133**	**1.8300**	**0.4865**	**0.0124**	**0.4989**	**0.0000**	**1,891.4275**	**1,891.4275**	**0.0582**	**0.0000**	**1,892.8817**

3.4 Building Construction - 2024

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	0.0732	0.6558	0.7121	1.3400e-003		0.0286	0.0286		0.0273	0.0273	0.0000	114.3522	114.3522	0.0207	0.0000	114.8686
Total	**0.0732**	**0.6558**	**0.7121**	**1.3400e-003**		**0.0286**	**0.0286**		**0.0273**	**0.0273**	**0.0000**	**114.3522**	**114.3522**	**0.0207**	**0.0000**	**114.8686**

3.4 Building Construction - 2024

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	6.3800e-003	0.2335	0.0605	6.8000e-004	0.0170	3.2000e-004	0.0173	4.9000e-003	3.1000e-004	5.2100e-003	0.0000	65.8178	65.8178	3.3500e-003	0.0000	65.9015
Worker	0.0598	0.0384	0.4456	1.5400e-003	0.1857	1.1200e-003	0.1868	0.0494	1.0300e-003	0.0504	0.0000	139.1296	139.1296	2.8000e-003	0.0000	139.1995
Total	**0.0662**	**0.2720**	**0.5061**	**2.2200e-003**	**0.2026**	**1.4400e-003**	**0.2041**	**0.0543**	**1.3400e-003**	**0.0556**	**0.0000**	**204.9474**	**204.9474**	**6.1500e-003**	**0.0000**	**205.1010**

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	0.0247	0.5072	0.8248	1.3400e-003		4.4800e-003	4.4800e-003		4.4800e-003	4.4800e-003	0.0000	114.3521	114.3521	0.0207	0.0000	114.8684
Total	**0.0247**	**0.5072**	**0.8248**	**1.3400e-003**		**4.4800e-003**	**4.4800e-003**		**4.4800e-003**	**4.4800e-003**	**0.0000**	**114.3521**	**114.3521**	**0.0207**	**0.0000**	**114.8684**

3.4 Building Construction - 2024

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	6.3800e-003	0.2335	0.0605	6.8000e-004	0.0170	3.2000e-004	0.0173	4.9000e-003	3.1000e-004	5.2100e-003	0.0000	65.8178	65.8178	3.3500e-003	0.0000	65.9015
Worker	0.0598	0.0384	0.4456	1.5400e-003	0.1857	1.1200e-003	0.1868	0.0494	1.0300e-003	0.0504	0.0000	139.1296	139.1296	2.8000e-003	0.0000	139.1995
Total	**0.0662**	**0.2720**	**0.5061**	**2.2200e-003**	**0.2026**	**1.4400e-003**	**0.2041**	**0.0543**	**1.3400e-003**	**0.0556**	**0.0000**	**204.9474**	**204.9474**	**6.1500e-003**	**0.0000**	**205.1010**

3.5 Paving - 2024

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	0.0104	0.1000	0.1536	2.4000e-004		4.9200e-003	4.9200e-003		4.5300e-003	4.5300e-003	0.0000	21.0279	21.0279	6.8000e-003	0.0000	21.1979
Paving	4.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.1000**	**0.1536**	**2.4000e-004**		**4.9200e-003**	**4.9200e-003**		**4.5300e-003**	**4.5300e-003**	**0.0000**	**21.0279**	**21.0279**	**6.8000e-003**	**0.0000**	**21.1979**

3.5 Paving - 2024

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	9.3000e-004	6.0000e-004	6.9300e-003	2.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.8000e-004	0.0000	2.1651	2.1651	4.0000e-005	0.0000	2.1662
Total	**9.3000e-004**	**6.0000e-004**	**6.9300e-003**	**2.0000e-005**	**2.8900e-003**	**2.0000e-005**	**2.9100e-003**	**7.7000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.1651**	**2.1651**	**4.0000e-005**	**0.0000**	**2.1662**

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	3.5100e-003	0.1054	0.1816	2.4000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	21.0278	21.0278	6.8000e-003	0.0000	21.1979
Paving	4.7200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2300e-003**	**0.1054**	**0.1816**	**2.4000e-004**		**3.9000e-004**	**3.9000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**21.0278**	**21.0278**	**6.8000e-003**	**0.0000**	**21.1979**

3.5 Paving - 2024

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	9.3000e-004	6.0000e-004	6.9300e-003	2.0000e-005	2.8900e-003	2.0000e-005	2.9100e-003	7.7000e-004	2.0000e-005	7.8000e-004	0.0000	2.1651	2.1651	4.0000e-005	0.0000	2.1662
Total	**9.3000e-004**	**6.0000e-004**	**6.9300e-003**	**2.0000e-005**	**2.8900e-003**	**2.0000e-005**	**2.9100e-003**	**7.7000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.1651**	**2.1651**	**4.0000e-005**	**0.0000**	**2.1662**

3.6 Architectural Coating - 2024

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	5.9069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**5.9078**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2024

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	5.9000e-004	3.8000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3747	1.3747	3.0000e-005	0.0000	1.3754
Total	**5.9000e-004**	**3.8000e-004**	**4.4000e-003**	**2.0000e-005**	**1.8300e-003**	**1.0000e-005**	**1.8500e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3747**	**1.3747**	**3.0000e-005**	**0.0000**	**1.3754**

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	5.9069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	5.3000e-003	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**5.9072**	**5.3000e-003**	**9.1600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2024

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	5.9000e-004	3.8000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.3747	1.3747	3.0000e-005	0.0000	1.3754
Total	**5.9000e-004**	**3.8000e-004**	**4.4000e-003**	**2.0000e-005**	**1.8300e-003**	**1.0000e-005**	**1.8500e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.3747**	**1.3747**	**3.0000e-005**	**0.0000**	**1.3754**

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	15.0733	57.8872	138.4374	0.4272	37.9139	0.3526	38.2665	10.1608	0.3284	10.4892	0.0000	39,352.3290	39,352.3290	1.9111	0.0000	39,400.1054
Unmitigated	15.0733	57.8872	138.4374	0.4272	37.9139	0.3526	38.2665	10.1608	0.3284	10.4892	0.0000	39,352.3290	39,352.3290	1.9111	0.0000	39,400.1054

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Government Office Building	99,052.41	0.00	0.00	101,730,044	101,730,044
Parking Lot	0.00	0.00	0.00		
Total	99,052.41	0.00	0.00	101,730,044	101,730,044

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Government Office Building	10.00	5.00	6.50	33.00	62.00	5.00	50	34	16
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Government Office Building	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Parking Lot	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776

5.0 Energy Detail

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	5,509.0545	5,509.0545	0.2706	0.0560	5,532.5070
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,509.0545	5,509.0545	0.2706	0.0560	5,532.5070
NaturalGas Mitigated	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
NaturalGas Unmitigated	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970

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					
Enclosed Parking with Elevator	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
Government Office Building	1.34647e +007	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
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		**0.0726**	**0.6600**	**0.5544**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**	**0.0000**	**718.5271**	**718.5271**	**0.0138**	**0.0132**	**722.7970**

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					
Enclosed Parking with Elevator	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
Government Office Building	1.34647e +007	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502	0.0000	718.5271	718.5271	0.0138	0.0132	722.7970
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		**0.0726**	**0.6600**	**0.5544**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**	**0.0000**	**718.5271**	**718.5271**	**0.0138**	**0.0132**	**722.7970**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.90944e +006	511.2719	0.0251	5.2000e-003	513.4484
Government Office Building	1.86092e +007	4,982.788 1	0.2448	0.0507	5,004.000 2
Parking Lot	56000	14.9946	7.4000e-004	1.5000e-004	15.0584
Total		**5,509.054 5**	**0.2707**	**0.0560**	**5,532.507 0**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.90944e +006	511.2719	0.0251	5.2000e-003	513.4484
Government Office Building	1.86092e +007	4,982.788 1	0.2448	0.0507	5,004.000 2
Parking Lot	56000	14.9946	7.4000e-004	1.5000e-004	15.0584
Total		**5,509.054 5**	**0.2707**	**0.0560**	**5,532.507 0**

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	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Unmitigated	6.2430	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755

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	0.5907					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6489					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3600e-003	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Total	**6.2430**	**3.3000e-004**	**0.0364**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0709**	**0.0709**	**1.9000e-004**	**0.0000**	**0.0755**

6.2 Area by SubCategory

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	0.5907					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.6489					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3600e-003	3.3000e-004	0.0364	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0709	0.0709	1.9000e-004	0.0000	0.0755
Total	**6.2430**	**3.3000e-004**	**0.0364**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.0709**	**0.0709**	**1.9000e-004**	**0.0000**	**0.0755**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	645.8368	0.3744	0.2252	722.3012
Unmitigated	645.8368	0.3744	0.2252	722.3012

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Government Office Building	285.474 / 174.968	645.8368	0.3744	0.2252	722.3012
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**645.8368**	**0.3744**	**0.2252**	**722.3012**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Government Office Building	285.474 / 174.968	645.8368	0.3744	0.2252	722.3012
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**645.8368**	**0.3744**	**0.2252**	**722.3012**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	271.2792	16.0321	0.0000	672.0826
Unmitigated	271.2792	16.0321	0.0000	672.0826

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Government Office Building	1336.41	271.2792	16.0321	0.0000	672.0826
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**271.2792**	**16.0321**	**0.0000**	**672.0826**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Government Office Building	1336.41	271.2792	16.0321	0.0000	672.0826
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**271.2792**	**16.0321**	**0.0000**	**672.0826**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	6	1341.02	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0132	0.0591	0.0337	6.0000e-005		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	6.1278	6.1278	8.6000e-004	0.0000	6.1493
Total	**0.0132**	**0.0591**	**0.0337**	**6.0000e-005**		**1.9400e-003**	**1.9400e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**6.1278**	**6.1278**	**8.6000e-004**	**0.0000**	**6.1493**

11.0 Vegetation

DGS Richards

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,437.00	1000sqft	32.99	1,437,000.00	0
Enclosed Parking with Elevator	1,020.00	Space	9.18	408,000.00	0
Parking Lot	400.00	Space	3.60	160,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2024
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project specific construction schedule.

Off-road Equipment - Assumed construction equipment.

Off-road Equipment - Assumed construction equipment

Off-road Equipment - no demolition phase

Off-road Equipment - Project specific construction equipment

Off-road Equipment - Project specific construction equipment

Off-road Equipment -

Trips and VMT - Project specific construction trips

Grading -

Architectural Coating - Assumed half of the exerior of the building will need to be painted.

Vehicle Trips - VMT estimates include mid-day employee travel, visitor travel, and service/delivery travel so all were calculated as Non Res C-W trip length

Area Coating - According to the project engineer, about half of the exterior portion of the building will be painted.

Energy Use - Assumed Title 24 2019 standards would use 30 percent less energy than those under the 2016 standards.

Construction Off-road Equipment Mitigation - Tier 4 Interim engines as mitigation

Stationary Sources - Emergency Generators and Fire Pumps - Two emergency generators will be installed in the the CUP.

Stationary Sources - Process Boilers -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	718,500.00	359,250.00
tblAreaCoating	Area_Nonresidential_Exterior	718500	359250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	30.00	202.00
tblConstructionPhase	NumDays	75.00	41.00
tblConstructionPhase	NumDays	740.00	769.00
tblConstructionPhase	NumDays	55.00	21.00
tblConstructionPhase	NumDays	55.00	10.00
tblEnergyUse	T24E	3.92	2.74

tblEnergyUse	T24E	4.98	3.49
tblEnergyUse	T24NG	12.42	8.69
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,564.00
tblTripsAndVMT	VendorTripNumber	329.00	200.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripLength	10.00	25.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	40.00
tblTripsAndVMT	WorkerTripNumber	140.00	20.00

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					
2020	1.0076	8.5495	10.3149	0.0159	0.3801	0.5349	0.9150	0.1008	0.4921	0.5929	0.0000	1,544.7828	1,544.7828	0.3981	0.0000	1,554.7357
2021	12.6066	129.6607	94.7459	0.2738	20.0429	3.1342	23.1771	8.2758	2.9597	11.1672	0.0000	28,406.0313	28,406.0313	3.9087	0.0000	28,503.7476
2022	11.6250	75.4708	90.5285	0.2513	14.4672	2.6851	17.1523	3.8633	2.5633	6.4265	0.0000	24,847.2780	24,847.2780	2.1649	0.0000	24,901.4000
2023	10.7623	68.0970	86.5852	0.2462	14.4670	2.3456	16.8127	3.8632	2.2382	6.1014	0.0000	24,337.4267	24,337.4267	2.0853	0.0000	24,389.5585
2024	1,181.6956	64.2397	83.5349	0.2417	14.4669	2.0732	16.5401	3.8632	1.9766	5.8398	0.0000	23,893.4865	23,893.4865	2.0408	0.0000	23,944.5073
Maximum	**1,181.6956**	**129.6607**	**94.7459**	**0.2738**	**20.0429**	**3.1342**	**23.1771**	**8.2758**	**2.9597**	**11.1672**	**0.0000**	**28,406.0313**	**28,406.0313**	**3.9087**	**0.0000**	**28,503.7476**

2.1 Overall Construction (Maximum Daily Emission)

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					
2020	0.4481	5.5474	10.5644	0.0159	0.3801	0.0227	0.4028	0.1008	0.0225	0.1233	0.0000	1,544.7828	1,544.7828	0.3981	0.0000	1,554.7357
2021	7.8799	89.8745	101.0297	0.2738	20.0429	0.4508	20.4060	8.2758	0.4417	8.6292	0.0000	28,406.0313	28,406.0313	3.9087	0.0000	28,503.7476
2022	7.4947	57.9917	97.4960	0.2513	14.4672	0.4415	14.9087	3.8633	0.4329	4.2962	0.0000	24,847.2780	24,847.2780	2.1649	0.0000	24,901.4000
2023	7.0615	54.6153	93.9883	0.2462	14.4670	0.4128	14.8799	3.8632	0.4055	4.2687	0.0000	24,337.4267	24,337.4267	2.0853	0.0000	24,389.5585
2024	1,181.5693	53.9915	91.3107	0.2417	14.4669	0.4097	14.8766	3.8632	0.4026	4.2658	0.0000	23,893.4865	23,893.4865	2.0408	0.0000	23,944.5073
Maximum	**1,181.5693**	**89.8745**	**101.0297**	**0.2738**	**20.0429**	**0.4508**	**20.4060**	**8.2758**	**0.4417**	**8.6292**	**0.0000**	**28,406.0313**	**28,406.0313**	**3.9087**	**0.0000**	**28,503.7476**

	ROG	**NOx**	**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	**1.09**	**24.28**	**-7.84**	**0.00**	**0.00**	**83.87**	**12.23**	**0.00**	**83.33**	**28.36**	**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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Energy	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
Mobile	107.6652	453.6043	1,131.4849	3.2089	301.9206	2.7406	304.6611	80.6822	2.5528	83.2349		325,719.4021	325,719.4021	16.7202		326,137.4081
Stationary	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	**142.2796**	**457.2236**	**1,134.8141**	**3.2306**	**301.9206**	**3.0165**	**304.9370**	**80.6822**	**2.8287**	**83.5108**		**330,059.9757**	**330,059.9757**	**16.8051**	**0.0796**	**330,503.8128**

2.2 Overall Operational

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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Energy	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
Mobile	107.6652	453.6043	1,131.4849	3.2089	301.9206	2.7406	304.6611	80.6822	2.5528	83.2349		325,719.4021	325,719.4021	16.7202		326,137.4081
Stationary	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	**142.2796**	**457.2236**	**1,134.8141**	**3.2306**	**301.9206**	**3.0165**	**304.9370**	**80.6822**	**2.8287**	**83.5108**		**330,059.9757**	**330,059.9757**	**16.8051**	**0.0796**	**330,503.8128**

	ROG	**NOx**	**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	GeoTech and Foundation Investigation	Site Preparation	3/25/2020	12/31/2020	5	202	
2	Excavate Foundations and Pile Claps	Grading	1/1/2021	2/28/2021	5	41	
3	Building Construction	Building Construction	3/1/2021	2/8/2024	5	769	
4	Paving	Paving	2/9/2024	3/9/2024	5	21	
5	Architectural Coating	Architectural Coating	3/10/2024	3/24/2024	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 12.78

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,155,500; Non-Residential Outdoor: 359,250; Striped Parking Area: 34,080 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
GeoTech and Foundation Investigation	Rubber Tired Dozers	0	8.00	247	0.40
GeoTech and Foundation Investigation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavate Foundations and Pile Claps	Excavators	4	8.00	158	0.38
Excavate Foundations and Pile Claps	Graders	2	8.00	187	0.41
Excavate Foundations and Pile Claps	Rubber Tired Dozers	2	8.00	247	0.40
Excavate Foundations and Pile Claps	Scrapers	2	8.00	367	0.48
Excavate Foundations and Pile Claps	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	5	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	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
GeoTech and Foundation Investigati	4	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Excavate Foundations and Pile Claps	12	40.00	0.00	9,564.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	24	698.00	200.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	25.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 GeoTech and Foundation Investigation - 2020

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8380	8.4206	9.1188	0.0124		0.5325	0.5325		0.4899	0.4899		1,203.0740	1,203.0740	0.3891		1,212.8015
Total	**0.8380**	**8.4206**	**9.1188**	**0.0124**	**0.0000**	**0.5325**	**0.5325**	**0.0000**	**0.4899**	**0.4899**		**1,203.0740**	**1,203.0740**	**0.3891**		**1,212.8015**

3.2 GeoTech and Foundation Investigation - 2020

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	0.1695	0.1290	1.1961	3.4300e-003	0.3801	2.4500e-003	0.3825	0.1008	2.2600e-003	0.1030		341.7088	341.7088	9.0200e-003		341.9342
Total	**0.1695**	**0.1290**	**1.1961**	**3.4300e-003**	**0.3801**	**2.4500e-003**	**0.3825**	**0.1008**	**2.2600e-003**	**0.1030**		**341.7088**	**341.7088**	**9.0200e-003**		**341.9342**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2785	5.4184	9.3683	0.0124		0.0203	0.0203		0.0203	0.0203	0.0000	1,203.0740	1,203.0740	0.3891		1,212.8015
Total	**0.2785**	**5.4184**	**9.3683**	**0.0124**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**0.0203**	**0.0203**	**0.0000**	**1,203.0740**	**1,203.0740**	**0.3891**		**1,212.8015**

3.2 GeoTech and Foundation Investigation - 2020

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	0.1695	0.1290	1.1961	3.4300e-003	0.3801	2.4500e-003	0.3825	0.1008	2.2600e-003	0.1030		341.7088	341.7088	9.0200e-003		341.9342
Total	**0.1695**	**0.1290**	**1.1961**	**3.4300e-003**	**0.3801**	**2.4500e-003**	**0.3825**	**0.1008**	**2.2600e-003**	**0.1030**		**341.7088**	**341.7088**	**9.0200e-003**		**341.9342**

3.3 Excavate Foundations and Pile Claps - 2021

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					15.2257	0.0000	15.2257	6.9640	0.0000	6.9640			0.0000			0.0000
Off-Road	6.1489	67.6025	43.2270	0.0875		2.9144	2.9144		2.6812	2.6812		8,476.4637	8,476.4637	2.7415		8,545.0002
Total	**6.1489**	**67.6025**	**43.2270**	**0.0875**	**15.2257**	**2.9144**	**18.1400**	**6.9640**	**2.6812**	**9.6452**		**8,476.4637**	**8,476.4637**	**2.7415**		**8,545.0002**

3.3 Excavate Foundations and Pile Claps - 2021

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	1.6914	61.8267	14.6406	0.1797	4.0571	0.2151	4.2722	1.1102	0.2058	1.3160		19,269.4671	19,269.4671	1.1510		19,298.2426
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	0.3165	0.2315	2.1890	6.6200e-003	0.7601	4.7600e-003	0.7649	0.2016	4.3800e-003	0.2059		660.1005	660.1005	0.0162		660.5048
Total	**2.0079**	**62.0582**	**16.8296**	**0.1863**	**4.8172**	**0.2199**	**5.0371**	**1.3118**	**0.2102**	**1.5220**		**19,929.5676**	**19,929.5676**	**1.1672**		**19,958.7474**

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					15.2257	0.0000	15.2257	6.9640	0.0000	6.9640			0.0000			0.0000
Off-Road	1.3857	27.8163	52.6050	0.0875		0.1432	0.1432		0.1432	0.1432	0.0000	8,476.4637	8,476.4637	2.7415		8,545.0002
Total	**1.3857**	**27.8163**	**52.6050**	**0.0875**	**15.2257**	**0.1432**	**15.3689**	**6.9640**	**0.1432**	**7.1072**	**0.0000**	**8,476.4637**	**8,476.4637**	**2.7415**		**8,545.0002**

3.3 Excavate Foundations and Pile Claps - 2021

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	1.6914	61.8267	14.6406	0.1797	4.0571	0.2151	4.2722	1.1102	0.2058	1.3160		19,269.4671	19,269.4671	1.1510		19,298.2426
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	0.3165	0.2315	2.1890	6.6200e-003	0.7601	4.7600e-003	0.7649	0.2016	4.3800e-003	0.2059		660.1005	660.1005	0.0162		660.5048
Total	**2.0079**	**62.0582**	**16.8296**	**0.1863**	**4.8172**	**0.2199**	**5.0371**	**1.3118**	**0.2102**	**1.5220**		**19,929.5676**	**19,929.5676**	**1.1672**		**19,958.7474**

3.4 Building Construction - 2021

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	6.4290	58.2996	50.5988	0.0923		2.9598	2.9598		2.8273	2.8273		8,690.6481	8,690.6481	1.6321		8,731.4514
Total	**6.4290**	**58.2996**	**50.5988**	**0.0923**		**2.9598**	**2.9598**		**2.8273**	**2.8273**		**8,690.6481**	**8,690.6481**	**1.6321**		**8,731.4514**

3.4 Building Construction - 2021

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	0.6547	20.4185	5.9491	0.0481	1.2035	0.0585	1.2620	0.3463	0.0560	0.4023		5,095.0413	5,095.0413	0.3095		5,102.7795
Worker	5.5228	4.0396	38.1981	0.1156	13.2639	0.0830	13.3469	3.5170	0.0765	3.5935		11,518.7533	11,518.7533	0.2822		11,525.8079
Total	**6.1776**	**24.4581**	**44.1472**	**0.1637**	**14.4673**	**0.1415**	**14.6089**	**3.8633**	**0.1325**	**3.9958**		**16,613.7946**	**16,613.7946**	**0.5917**		**16,628.5874**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,690.6481	8,690.6481	1.6321		8,731.4514
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,690.6481**	**8,690.6481**	**1.6321**		**8,731.4514**

3.4 Building Construction - 2021

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	0.6547	20.4185	5.9491	0.0481	1.2035	0.0585	1.2620	0.3463	0.0560	0.4023		5,095.0413	5,095.0413	0.3095		5,102.7795
Worker	5.5228	4.0396	38.1981	0.1156	13.2639	0.0830	13.3469	3.5170	0.0765	3.5935		11,518.7533	11,518.7533	0.2822		11,525.8079
Total	**6.1776**	**24.4581**	**44.1472**	**0.1637**	**14.4673**	**0.1415**	**14.6089**	**3.8633**	**0.1325**	**3.9958**		**16,613.7946**	**16,613.7946**	**0.5917**		**16,628.5874**

3.4 Building Construction - 2022

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	5.8326	52.4553	49.9150	0.0923		2.5529	2.5529		2.4396	2.4396		8,691.9383	8,691.9383	1.6106		8,732.2042
Total	**5.8326**	**52.4553**	**49.9150**	**0.0923**		**2.5529**	**2.5529**		**2.4396**	**2.4396**		**8,691.9383**	**8,691.9383**	**1.6106**		**8,732.2042**

3.4 Building Construction - 2022

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	0.6077	19.3782	5.4866	0.0476	1.2033	0.0514	1.2547	0.3463	0.0492	0.3954		5,049.7698	5,049.7698	0.3007		5,057.2883
Worker	5.1847	3.6374	35.1270	0.1114	13.2639	0.0808	13.3447	3.5170	0.0745	3.5915		11,105.5699	11,105.5699	0.2535		11,111.9076
Total	**5.7924**	**23.0155**	**40.6135**	**0.1591**	**14.4672**	**0.1322**	**14.5994**	**3.8633**	**0.1236**	**3.9869**		**16,155.3397**	**16,155.3397**	**0.5543**		**16,169.1958**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,691.9383	8,691.9383	1.6106		8,732.2042
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,691.9383**	**8,691.9383**	**1.6106**		**8,732.2042**

3.4 Building Construction - 2022

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	0.6077	19.3782	5.4866	0.0476	1.2033	0.0514	1.2547	0.3463	0.0492	0.3954		5,049.7698	5,049.7698	0.3007		5,057.2883
Worker	5.1847	3.6374	35.1270	0.1114	13.2639	0.0808	13.3447	3.5170	0.0745	3.5915		11,105.5699	11,105.5699	0.2535		11,111.9076
Total	**5.7924**	**23.0155**	**40.6135**	**0.1591**	**14.4672**	**0.1322**	**14.5994**	**3.8633**	**0.1236**	**3.9869**		**16,155.3397**	**16,155.3397**	**0.5543**		**16,169.1958**

3.4 Building Construction - 2023

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	5.4031	48.4577	49.4795	0.0923		2.2421	2.2421		2.1419	2.1419		8,692.7758	8,692.7758	1.5890		8,732.5005
Total	**5.4031**	**48.4577**	**49.4795**	**0.0923**		**2.2421**	**2.2421**		**2.1419**	**2.1419**		**8,692.7758**	**8,692.7758**	**1.5890**		**8,732.5005**

3.4 Building Construction - 2023

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	0.4816	16.3628	4.8351	0.0467	1.2032	0.0248	1.2279	0.3462	0.0237	0.3699		4,956.6347	4,956.6347	0.2693		4,963.3664
Worker	4.8776	3.2764	32.2706	0.1072	13.2639	0.0788	13.3427	3.5170	0.0726	3.5896		10,688.0162	10,688.0162	0.2270		10,693.6916
Total	**5.3592**	**19.6392**	**37.1057**	**0.1539**	**14.4670**	**0.1036**	**14.5706**	**3.8632**	**0.0963**	**3.9595**		**15,644.6509**	**15,644.6509**	**0.4963**		**15,657.0580**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,692.7758	8,692.7758	1.5890		8,732.5005
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,692.7758**	**8,692.7758**	**1.5890**		**8,732.5005**

3.4 Building Construction - 2023

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	0.4816	16.3628	4.8351	0.0467	1.2032	0.0248	1.2279	0.3462	0.0237	0.3699		4,956.6347	4,956.6347	0.2693		4,963.3664
Worker	4.8776	3.2764	32.2706	0.1072	13.2639	0.0788	13.3427	3.5170	0.0726	3.5896		10,688.0162	10,688.0162	0.2270		10,693.6916
Total	**5.3592**	**19.6392**	**37.1057**	**0.1539**	**14.4670**	**0.1036**	**14.5706**	**3.8632**	**0.0963**	**3.9595**		**15,644.6509**	**15,644.6509**	**0.4963**		**15,657.0580**

3.4 Building Construction - 2024

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	5.0480	45.2243	49.1067	0.0923		1.9727	1.9727		1.8832	1.8832		8,693.2231	8,693.2231	1.5701		8,732.4765
Total	**5.0480**	**45.2243**	**49.1067**	**0.0923**		**1.9727**	**1.9727**		**1.8832**	**1.8832**		**8,693.2231**	**8,693.2231**	**1.5701**		**8,732.4765**

3.4 Building Construction - 2024

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	0.4586	16.0501	4.5186	0.0464	1.2031	0.0234	1.2265	0.3462	0.0224	0.3686		4,928.1461	4,928.1461	0.2660		4,934.7961
Worker	4.6110	2.9653	29.9095	0.1030	13.2639	0.0770	13.3409	3.5170	0.0709	3.5880		10,272.1173	10,272.1173	0.2047		10,277.2348
Total	**5.0696**	**19.0153**	**34.4281**	**0.1494**	**14.4669**	**0.1005**	**14.5674**	**3.8632**	**0.0934**	**3.9565**		**15,200.2634**	**15,200.2634**	**0.4707**		**15,212.0308**

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	1.7023	34.9761	56.8825	0.0923		0.3093	0.3093		0.3093	0.3093	0.0000	8,693.2231	8,693.2231	1.5701		8,732.4765
Total	**1.7023**	**34.9761**	**56.8825**	**0.0923**		**0.3093**	**0.3093**		**0.3093**	**0.3093**	**0.0000**	**8,693.2231**	**8,693.2231**	**1.5701**		**8,732.4765**

3.4 Building Construction - 2024

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	0.4586	16.0501	4.5186	0.0464	1.2031	0.0234	1.2265	0.3462	0.0224	0.3686		4,928.1461	4,928.1461	0.2660		4,934.7961
Worker	4.6110	2.9653	29.9095	0.1030	13.2639	0.0770	13.3409	3.5170	0.0709	3.5880		10,272.1173	10,272.1173	0.2047		10,277.2348
Total	**5.0696**	**19.0153**	**34.4281**	**0.1494**	**14.4669**	**0.1005**	**14.5674**	**3.8632**	**0.0934**	**3.9565**		**15,200.2634**	**15,200.2634**	**0.4707**		**15,212.0308**

3.5 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.4491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4373**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

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	0.0991	0.0637	0.6428	2.2100e-003	0.2850	1.6600e-003	0.2867	0.0756	1.5200e-003	0.0771		220.7475	220.7475	4.4000e-003		220.8575
Total	**0.0991**	**0.0637**	**0.6428**	**2.2100e-003**	**0.2850**	**1.6600e-003**	**0.2867**	**0.0756**	**1.5200e-003**	**0.0771**		**220.7475**	**220.7475**	**4.4000e-003**		**220.8575**

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	0.3341	10.0395	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.4491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7832**	**10.0395**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.5 Paving - 2024

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	0.0991	0.0637	0.6428	2.2100e-003	0.2850	1.6600e-003	0.2867	0.0756	1.5200e-003	0.0771		220.7475	220.7475	4.4000e-003		220.8575
Total	**0.0991**	**0.0637**	**0.6428**	**2.2100e-003**	**0.2850**	**1.6600e-003**	**0.2867**	**0.0756**	**1.5200e-003**	**0.0771**		**220.7475**	**220.7475**	**4.4000e-003**		**220.8575**

3.6 Architectural Coating - 2024

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	1,181.3827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**1,181.5635**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

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	0.1321	0.0850	0.8570	2.9500e-003	0.3801	2.2100e-003	0.3823	0.1008	2.0300e-003	0.1028		294.3300	294.3300	5.8700e-003		294.4766
Total	**0.1321**	**0.0850**	**0.8570**	**2.9500e-003**	**0.3801**	**2.2100e-003**	**0.3823**	**0.1008**	**2.0300e-003**	**0.1028**		**294.3300**	**294.3300**	**5.8700e-003**		**294.4766**

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	1,181.3827					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0545	1.0598	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**1,181.4372**	**1.0598**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

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	0.1321	0.0850	0.8570	2.9500e-003	0.3801	2.2100e-003	0.3823	0.1008	2.0300e-003	0.1028		294.3300	294.3300	5.8700e-003		294.4766
Total	**0.1321**	**0.0850**	**0.8570**	**2.9500e-003**	**0.3801**	**2.2100e-003**	**0.3823**	**0.1008**	**2.0300e-003**	**0.1028**		**294.3300**	**294.3300**	**5.8700e-003**		**294.4766**

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	107.6652	453.6043	1,131.4849	3.2089	301.9206	2.7406	304.6611	80.6822	2.5528	83.2349		325,719.4021	325,719.4021	16.7202		326,137.4081
Unmitigated	107.6652	453.6043	1,131.4849	3.2089	301.9206	2.7406	304.6611	80.6822	2.5528	83.2349		325,719.4021	325,719.4021	16.7202		326,137.4081

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Government Office Building	99,052.41	0.00	0.00	101,730,044	101,730,044
Parking Lot	0.00	0.00	0.00		
Total	99,052.41	0.00	0.00	101,730,044	101,730,044

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Government Office Building	10.00	5.00	6.50	33.00	62.00	5.00	50	34	16
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Government Office Building	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776
Parking Lot	0.566033	0.037143	0.208217	0.113428	0.016713	0.004955	0.018463	0.024036	0.001978	0.001883	0.005758	0.000618	0.000776

5.0 Energy Detail

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	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
NaturalGas Unmitigated	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386

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					
Enclosed Parking with Elevator	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
Government Office Building	36889.6	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
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		**0.3978**	**3.6166**	**3.0380**	**0.0217**		**0.2749**	**0.2749**		**0.2749**	**0.2749**		**4,339.9484**	**4,339.9484**	**0.0832**	**0.0796**	**4,365.7386**

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					
Enclosed Parking with Elevator	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
Government Office Building	36.8896	0.3978	3.6166	3.0380	0.0217		0.2749	0.2749		0.2749	0.2749		4,339.9484	4,339.9484	0.0832	0.0796	4,365.7386
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		**0.3978**	**3.6166**	**3.0380**	**0.0217**		**0.2749**	**0.2749**		**0.2749**	**0.2749**		**4,339.9484**	**4,339.9484**	**0.0832**	**0.0796**	**4,365.7386**

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	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Unmitigated	34.2165	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661

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	3.2367					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	30.9530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0269	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Total	**34.2165**	**2.6400e-003**	**0.2912**	**2.0000e-005**		**1.0400e-003**	**1.0400e-003**		**1.0400e-003**	**1.0400e-003**		**0.6253**	**0.6253**	**1.6300e-003**		**0.6661**

6.2 Area by SubCategory

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	3.2367					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	30.9530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0269	2.6400e-003	0.2912	2.0000e-005		1.0400e-003	1.0400e-003		1.0400e-003	1.0400e-003		0.6253	0.6253	1.6300e-003		0.6661
Total	**34.2165**	**2.6400e-003**	**0.2912**	**2.0000e-005**		**1.0400e-003**	**1.0400e-003**		**1.0400e-003**	**1.0400e-003**		**0.6253**	**0.6253**	**1.6300e-003**		**0.6661**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0	6	1341.02	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Sacramento
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

average emission factor 3.99 g/mile

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOx_RUNE	CO2_RUNE	PM10_RUN	PM2_5_RUNEX
Sacrament	2024	All Other B	Aggregate	5	DSL	175.8536	0.278479	0.317027	1.46582	10.89769	2223.387	0.007007	0.006704
Sacrament	2024	LDA	Aggregate	5	GAS	861.5494	0.062015	0.090492	1.051957	0.083774	815.4769	0.011904	0.010945
Sacrament	2024	LDA	Aggregate	5	DSL	10.23876	0.172077	0.195898	3.210384	0.127724	600.4381	0.025558	0.024453
Sacrament	2024	LDT1	Aggregate	5	GAS	61.10202	0.128594	0.187613	2.217426	0.201388	958.6843	0.014621	0.013444
Sacrament	2024	LDT1	Aggregate	5	DSL	0.113033	0.609498	0.693873	3.810104	0.735664	902.2707	0.355815	0.340423
Sacrament	2024	LDT2	Aggregate	5	GAS	342.7627	0.084786	0.123717	1.36463	0.129862	1083.561	0.011725	0.010781
Sacrament	2024	LDT2	Aggregate	5	DSL	0.676862	0.262585	0.298935	2.466324	0.159845	767.3249	0.014345	0.013725
Sacrament	2024	LHD1	Aggregate	5	GAS	8583.096	0.232845	0.339767	2.582836	0.53725	1377.797	0.008764	0.008058
Sacrament	2024	LHD1	Aggregate	5	DSL	6202.035	0.80543	0.916929	3.435949	2.462462	1237.007	0.09496	0.090852
Sacrament	2024	LHD2	Aggregate	5	GAS	1690.111	0.09208	0.134363	0.991779	0.250282	1433.988	0.006755	0.006211
Sacrament	2024	LHD2	Aggregate	5	DSL	2368.119	0.754083	0.858473	3.185027	1.357901	1269.929	0.053003	0.05071
Sacrament	2024	MCY	Aggregate	5	GAS	9.498009	12.9026	15.9214	52.17788	1.579508	555.5031	0.01109	0.010365
Sacrament	2024	MDV	Aggregate	5	GAS	183.1306	0.156082	0.227665	2.121025	0.241206	1475.83	0.01166	0.010721
Sacrament	2024	MDV	Aggregate	5	DSL	3.961758	0.168366	0.191674	3.439724	0.114922	942.3723	0.01359	0.013002
Sacrament	2024	MH	Aggregate	5	GAS	206.2826	0.400871	0.58495	5.67743	0.742874	3837.458	0.009644	0.008867
Sacrament	2024	MH	Aggregate	5	DSL	52.83614	1.060232	1.207004	2.419869	14.38413	2067.418	0.286385	0.273997
Sacrament	2024	Motor Coa	Aggregate	5	DSL	128.7678	0.560818	0.638449	3.311503	18.81208	3105.433	0.010764	0.010298
Sacrament	2024	OBUS	Aggregate	5	GAS	316.2373	0.225142	0.328526	1.707838	0.510173	3761.984	0.006271	0.005766
Sacrament	2024	SBUS	Aggregate	5	GAS	77.86874	0.20122	0.29362	1.479703	0.496191	1796.682	0.005433	0.004995
Sacrament	2024	SBUS	Aggregate	5	DSL	161.831	0.634006	0.721767	1.353795	14.843	2260.579	0.090232	0.086329
Sacrament	2024	T6 Ag	Aggregate	5	DSL	141.5869	0.296005	0.33698	1.558075	10.22605	2284.121	0.007459	0.007136
Sacrament	2024	T6 CAIRP h	Aggregate	5	DSL	23.38639	0.23519	0.267746	1.237964	9.210301	2135.451	0.00566	0.005415
Sacrament	2024	T6 CAIRP s	Aggregate	5	DSL	71.79044	0.215521	0.245354	1.134429	8.579019	2132.596	0.005056	0.004837
Sacrament	2024	T6 instate	Aggregate	5	DSL	86.79238	0.26003	0.296024	1.351061	9.839792	2204.627	0.006948	0.006647
Sacrament	2024	T6 instate	Aggregate	5	DSL	654.0021	0.234016	0.266409	1.224486	9.355664	2157.573	0.005844	0.005591
Sacrament	2024	T6 instate	Aggregate	5	DSL	1014.492	0.269416	0.306709	1.418116	10.02092	2187.661	0.006689	0.006399
Sacrament	2024	T6 instate	Aggregate	5	DSL	2561.959	0.236625	0.269379	1.245514	9.510061	2166.167	0.005723	0.005475
Sacrament	2024	T6 OOS he	Aggregate	5	DSL	13.39952	0.236133	0.26882	1.242929	9.227226	2135.976	0.005688	0.005442
Sacrament	2024	T6 OOS sm	Aggregate	5	DSL	41.13322	0.215521	0.245354	1.134429	8.579019	2132.596	0.005056	0.004837
Sacrament	2024	T6 Public	Aggregate	5	DSL	539.8532	0.343539	0.391093	1.001442	10.67815	2227.345	0.048845	0.046732
Sacrament	2024	T6 utility	Aggregate	5	DSL	23.13477	0.182442	0.207696	0.960313	6.115636	2177.947	0.003953	0.003782
Sacrament	2024	T6TS	Aggregate	5	GAS	698.2438	0.352099	0.513782	2.981682	0.738264	3801.82	0.006211	0.005711
Sacrament	2024	T7 Ag	Aggregate	5	DSL	16.92745	0.6656	0.757735	3.930212	17.80415	3193.475	0.012966	0.012405
Sacrament	2024	T7 CAIRP	Aggregate	5	DSL	574.9843	0.628426	0.715416	3.710712	21.21639	2864.996	0.012385	0.011849
Sacrament	2024	T7 CAIRP c	Aggregate	5	DSL	27.75722	0.601651	0.684934	3.537546	21.15512	2855.772	0.012027	0.011507
Sacrament	2024	T7 NNOOS	Aggregate	5	DSL	712.9813	0.509006	0.579465	3.005564	17.29099	2784.126	0.009531	0.009119
Sacrament	2024	T7 NOOS	Aggregate	5	DSL	227.1186	0.630887	0.718217	3.725243	21.26576	2866.665	0.012442	0.011903
Sacrament	2024	T7 other p	Aggregate	5	DSL	7.07803	0.630775	0.71809	3.724582	21.17585	2921.457	0.012422	0.011884
Sacrament	2024	T7 POAK	Aggregate	5	DSL	15.76995	0.65915	0.750392	3.892126	21.86282	2952.864	0.013078	0.012512
Sacrament	2024	T7 Public	Aggregate	5	DSL	376.9001	0.697355	0.793885	2.181705	19.3913	3224.521	0.090218	0.086315
Sacrament	2024	T7 Single	Aggregate	5	DSL	655.1247	0.454667	0.517603	2.684701	13.76289	2897.151	0.008114	0.007763
Sacrament	2024	T7 single c	Aggregate	5	DSL	71.80428	0.475952	0.541835	2.751616	14.1236	2931.254	0.010191	0.00975
Sacrament	2024	T7 SWCV	Aggregate	5	DSL	1802.545	0.40834	6.22565	15.89236	10.78468	6374.358	0.015295	0.014633
Sacrament	2024	T7 tractor	Aggregate	5	DSL	388.2487	0.636416	0.724511	3.757888	20.91833	2893.418	0.012531	0.011989
Sacrament	2024	T7 tractor	Aggregate	5	DSL	53.5354	0.64114	0.729889	3.744226	21.08014	2939.673	0.013376	0.012798
Sacrament	2024	T7 utility	Aggregate	5	DSL	1.910107	0.3767	0.428845	2.224328	9.542214	3010.109	0.006178	0.00591
Sacrament	2024	T7IS	Aggregate	5	GAS	33.69801	2.427767	3.542591	57.24121	5.626661	4035.381	0.005618	0.005166
Sacrament	2024	UBUS	Aggregate	5	GAS	491.8898	0.793296	1.157576	5.343345	1.640916	3838.459	0.006255	0.005751
Sacrament	2024	UBUS	Aggregate	5	DSL	590.9657	2.741792	19.25541	39.70457	19.05738	3236.542	0.208318	0.199306

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Sacramento
Calendar Year: 2036
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

average emission factor 3.74 g/mile

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOx_RUNE	CO2_RUNE	PM10_RUN	PM2_5_RUNEX
Sacrament	2036	All Other B	Aggregate	5	DSL	180.5422	0.26279	0.299166	1.383239	11.18135	2143.501	0.006587	0.006302
Sacrament	2036	LDA	Aggregate	5	GAS	916.555	0.029288	0.042738	0.620583	0.044081	642.4019	0.006419	0.005902
Sacrament	2036	LDA	Aggregate	5	DSL	12.55946	0.086437	0.098403	2.656198	0.04855	483.7251	0.002349	0.002247
Sacrament	2036	LDT1	Aggregate	5	GAS	63.52808	0.038829	0.056659	0.737841	0.056832	704.8288	0.006851	0.006299
Sacrament	2036	LDT1	Aggregate	5	DSL	0.042989	0.296997	0.338111	2.823927	0.316205	605.2544	0.054521	0.052162
Sacrament	2036	LDT2	Aggregate	5	GAS	398.5159	0.040184	0.058637	0.826061	0.058696	811.991	0.006583	0.006053
Sacrament	2036	LDT2	Aggregate	5	DSL	0.867292	0.263408	0.299873	2.669769	0.152638	598.6961	0.009277	0.008876
Sacrament	2036	LHD1	Aggregate	5	GAS	4970.476	0.056584	0.082567	0.460471	0.204614	1314.294	0.007545	0.006938
Sacrament	2036	LHD1	Aggregate	5	DSL	5090.355	0.769649	0.876194	3.514226	0.813474	1153.563	0.032255	0.03086
Sacrament	2036	LHD2	Aggregate	5	GAS	1577.918	0.024321	0.035489	0.229768	0.07436	1375.124	0.007601	0.006989
Sacrament	2036	LHD2	Aggregate	5	DSL	2402.367	0.744986	0.848117	3.309252	0.341936	1194.146	0.018821	0.018006
Sacrament	2036	MCY	Aggregate	5	GAS	10.09544	12.64174	15.84218	44.78631	1.656941	565.7358	0.013328	0.012427
Sacrament	2036	MDV	Aggregate	5	GAS	190.477	0.06208	0.090588	1.064363	0.094384	1084.963	0.007015	0.00645
Sacrament	2036	MDV	Aggregate	5	DSL	5.229469	0.102191	0.116338	3.027082	0.056718	741.3973	0.002937	0.00281
Sacrament	2036	MH	Aggregate	5	GAS	168.4167	0.097923	0.142889	0.607948	0.281969	3696.252	0.007603	0.006991
Sacrament	2036	MH	Aggregate	5	DSL	44.19862	0.815677	0.928594	2.17136	11.30494	2008.076	0.08738	0.0836
Sacrament	2036	Motor Coa	Aggregate	5	DSL	150.2893	0.508512	0.578902	3.002645	17.65143	3017.215	0.009555	0.009142
Sacrament	2036	OBUS	Aggregate	5	GAS	326.2972	0.078231	0.114154	0.46906	0.200656	3666.936	0.007657	0.00704
Sacrament	2036	SBUS	Aggregate	5	GAS	102.9903	0.056961	0.083118	0.321239	0.162626	1744.574	0.007191	0.006612
Sacrament	2036	SBUS	Aggregate	5	DSL	159.8242	0.266389	0.303263	1.237297	9.331145	2135.403	0.008637	0.008263
Sacrament	2036	T6 Ag	Aggregate	5	DSL	141.5869	0.289864	0.329988	1.525747	11.88281	2169.359	0.007402	0.007082
Sacrament	2036	T6 CAIRP h	Aggregate	5	DSL	27.29506	0.227306	0.258771	1.196464	9.467961	2092.086	0.005458	0.005222
Sacrament	2036	T6 CAIRP s	Aggregate	5	DSL	83.7891	0.215232	0.245025	1.13291	8.756907	2109.487	0.005062	0.004843
Sacrament	2036	T6 instate	Aggregate	5	DSL	137.4407	0.25855	0.29434	1.360004	11.07863	2126.666	0.006484	0.006203
Sacrament	2036	T6 instate	Aggregate	5	DSL	1035.65	0.236947	0.269746	1.246335	9.986349	2117.94	0.005786	0.005536
Sacrament	2036	T6 instate	Aggregate	5	DSL	1143.476	0.254568	0.289807	1.339964	10.73796	2108.166	0.006322	0.006048
Sacrament	2036	T6 instate	Aggregate	5	DSL	2888.555	0.238374	0.271371	1.254723	10.05533	2120.526	0.005814	0.005563
Sacrament	2036	T6 OOS he	Aggregate	5	DSL	15.63904	0.227456	0.258941	1.197251	9.473282	2092.171	0.005462	0.005226
Sacrament	2036	T6 OOS sm	Aggregate	5	DSL	48.008	0.215232	0.245025	1.13291	8.756907	2109.487	0.005062	0.004843
Sacrament	2036	T6 Public	Aggregate	5	DSL	596.2923	0.214393	0.24407	1.004737	7.544374	2131.057	0.009849	0.009423
Sacrament	2036	T6 utility	Aggregate	5	DSL	25.79941	0.177834	0.202451	0.936062	6.429484	2110.153	0.003828	0.003663
Sacrament	2036	T6TS	Aggregate	5	GAS	616.0765	0.081957	0.119591	0.51001	0.211564	3669.825	0.007539	0.006932
Sacrament	2036	T7 Ag	Aggregate	5	DSL	16.92745	0.676167	0.769764	3.992606	21.39001	2990.091	0.013424	0.012844
Sacrament	2036	T7 CAIRP	Aggregate	5	DSL	671.084	0.567646	0.646222	3.35182	20.59399	2766.852	0.011043	0.010565
Sacrament	2036	T7 CAIRP c	Aggregate	5	DSL	43.95515	0.58181	0.662346	3.43403	21.38594	2789.325	0.011424	0.01093
Sacrament	2036	T7 NNOOS	Aggregate	5	DSL	832.145	0.49725	0.566081	2.936146	17.20513	2760.5	0.009276	0.008874
Sacrament	2036	T7 NOOS	Aggregate	5	DSL	265.078	0.567933	0.646548	3.353512	20.59971	2767.125	0.011049	0.010571
Sacrament	2036	T7 other p	Aggregate	5	DSL	8.762498	0.619155	0.704861	3.655969	23.35417	2784.966	0.012358	0.011824
Sacrament	2036	T7 POAK	Aggregate	5	DSL	26.01536	0.623704	0.710039	3.682825	23.58359	2784.966	0.012473	0.011934
Sacrament	2036	T7 Public	Aggregate	5	DSL	454.0346	0.487268	0.554717	2.282343	13.50877	2913.723	0.024923	0.023844
Sacrament	2036	T7 Single	Aggregate	5	DSL	927.3268	0.471386	0.536637	2.783422	15.50003	2811.584	0.008591	0.008219
Sacrament	2036	T7 single c	Aggregate	5	DSL	113.7062	0.482439	0.54922	2.840487	15.75998	2826.488	0.009021	0.008631
Sacrament	2036	T7 SWCV	Aggregate	5	DSL	2148.866	0.194903	5.886052	19.51346	3.661995	5857.463	0.010145	0.009706
Sacrament	2036	T7 tractor	Aggregate	5	DSL	457.7621	0.585965	0.667077	3.459989	21.17821	2781.679	0.011479	0.010982
Sacrament	2036	T7 tractor	Aggregate	5	DSL	84.77636	0.604941	0.688679	3.569682	22.13679	2810.232	0.011994	0.011475
Sacrament	2036	T7 utility	Aggregate	5	DSL	2.130112	0.367174	0.418	2.168077	10.49847	2801.606	0.00598	0.005721
Sacrament	2036	T7IS	Aggregate	5	GAS	34.03984	2.082832	3.039263	54.22863	5.664663	3800.197	0.007657	0.007041
Sacrament	2036	UBUS	Aggregate	5	GAS	431.0104	0.27506	0.401367	2.043411	0.97712	3711.084	0.007171	0.006593
Sacrament	2036	UBUS	Aggregate	5	DSL	448.9237	1.04488	13.24422	40.6851	6.802761	2964.262	0.041711	0.039906

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 2
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S              Z0= 400. CM             ALT=     7. (M)
       BRG= WORST CASE             VD=  0.0 CM/S
      CLAS=     7 (G)              VS=  0.0 CM/S
      MIXH= 1000. M               AMB=  0.0 PPM
     SIGTH=    5. DEGREES        TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. E->0         *   100     5     0     5 *  AG   1044   4.0    0.0  13.0
B. 0->W         *     0     5   -75     5 *  AG    615   4.0    0.0  16.5
C. W->0         *   -75    -5     0    -5 *  AG    966   4.0    0.0  16.5
D. W->N         *   -75    -4     0     0 *  AG    117   4.0    0.0  10.0
E. 0->E         *     0    -5   100    -5 *  AG   2131   4.0    0.0  20.0
F. S->0         *   -49  -142     0     0 *  AG   1243   4.0    0.0  16.5
G. 0->N         *     0     0     0   150 *  AG    624   4.0    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      6    -13   1.8
3. R_SW-3m  *     -9    -13   1.8
4. R_NW-3m  *     -7     11   1.8
5. R_NE-7m  *     10     14   1.8
6. R_SE-7m  *      8    -15   1.8
7. R_SW-7m  *    -12    -15   1.8
8. R_NW-7m  *    -10     14   1.8
```

```
↑

            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   2

                JOB: Existing plus Project, intersection 2
                RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *              CONC/LINK
              *  BRG  * CONC  *                (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G
 -------------*-------*-------*-----------------------------------
  1. R_NE-3m  *  200. *   1.4 *  0.3  0.0  0.0  0.0  0.3  0.7  0.1
  2. R_SE-3m  *   77. *   1.2 *  0.2  0.0  0.0  0.0  1.0  0.0  0.0
  3. R_SW-3m  *   80. *   1.4 *  0.2  0.0  0.1  0.0  0.9  0.3  0.0
  4. R_NW-3m  *  101. *   1.3 *  0.5  0.1  0.0  0.0  0.5  0.0  0.2
  5. R_NE-7m  *  202. *   1.3 *  0.3  0.0  0.0  0.0  0.3  0.7  0.0
  6. R_SE-7m  *   75. *   1.1 *  0.2  0.0  0.0  0.0  0.9  0.0  0.0
  7. R_SW-7m  *   78. *   1.3 *  0.2  0.0  0.0  0.0  0.8  0.3  0.0
  8. R_NW-7m  *  104. *   1.1 *  0.4  0.1  0.0  0.0  0.5  0.0  0.1


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 4
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*------------------------*----------------------------
A. E->0         *   150     5     0     5 *  AG   1906   4.0    0.0  13.0
B. E->S         *   150     4     0     0 *  AG      3   4.0    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   2022   4.0    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG    971   4.0    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG     29   4.0    0.0  10.0
F. 0->E         *     0    -5   150    -5 *  AG   1002   4.0    0.0  13.0
G. S->0         *     4  -150     4     0 *  AG     11   4.0    0.0  10.0
H. S->W         *     4  -150     0     0 *  AG    101   4.0    0.0  10.0
I. 0->N1        *     4     0     4    10 *  AG     42   4.0    0.0  10.0
J. 0->N2        *     4    10    47   143 *  AG     42   4.0    0.0  11.5
K. N1->N2       *    40   143    -4    10 *  AG     66   4.0    0.0  11.5
L. N2->0        *    -4    10    -4     0 *  AG     66   4.0    0.0  10.0
M. 0->S         *    -4     0    -4  -150 *  AG     21   4.0    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*--------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      7    -11   1.8
3. R_SW-3m  *     -7    -11   1.8
4. R_NW-3m  *     -7     11   1.8
```

```
 5. R_NE-7m  *     10     14   1.8
 6. R_SE-7m  *     10    -14   1.8
 7. R_SW-7m  *    -10    -14   1.8
 8. R_NW-7m  *    -10     14   1.8



           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Existing plus Project, intersection 4
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.8 *  0.3  0.0  1.3  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  279. *   1.3 *  0.0  0.0  0.5  0.6  0.0  0.1  0.0  0.0
 3. R_SW-3m  *   81. *   1.2 *  0.5  0.0  0.0  0.1  0.0  0.6  0.0  0.0
 4. R_NW-3m  *  264. *   1.8 *  0.0  0.0  1.6  0.2  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  260. *   1.3 *  0.0  0.0  0.9  0.2  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.0 *  0.0  0.0  0.5  0.5  0.0  0.0  0.0  0.0
 7. R_SW-7m  *   79. *   1.0 *  0.4  0.0  0.0  0.0  0.0  0.5  0.0  0.0
 8. R_NW-7m  *  100. *   1.2 *  0.9  0.0  0.0  0.0  0.0  0.3  0.0  0.0



             *         CONC/LINK
             *           (PPM)
  RECEPTOR   *   I    J    K    L    M
 ------------*------------------------
 1. R_NE-3m  *  0.0  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.0
 3. R_SW-3m  *  0.0  0.0  0.0  0.0  0.0
 4. R_NW-3m  *  0.0  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  0.0  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.0
 7. R_SW-7m  *  0.0  0.0  0.0  0.0  0.0
 8. R_NW-7m  *  0.0  0.0  0.0  0.0  0.0
```

🡅

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 5
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   150     5     0     5 *  AG   1759   4.0    0.0  13.0
B. E->S         *   150     4     0     0 *  AG     12   4.0    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1909   4.0    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG    991   4.0    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG     11   4.0    0.0  10.0
F. 0->E         *     0    -5   150    -5 *  AG   1030   4.0    0.0  13.0
G. S->0         *     4  -150     4     0 *  AG     40   4.0    0.0  10.0
H. S->W         *     4  -150     0     0 *  AG    101   4.0    0.0  10.0
I. 0->N1        *     4     0     4    10 *  AG     20   4.0    0.0  10.0
J. 0->N2        *     4    10    47   143 *  AG     20   4.0    0.0  11.5
K. N1->N2       *    40   143    -4    10 *  AG     62   4.0    0.0  11.5
L. N2->0        *    -4    10    -4     0 *  AG     62   4.0    0.0  10.0
M. N1->N2       *    40   143    -4    10 *  AG     21   4.0    0.0  12.0
N. N2->0        *    -4    10     0     0 *  AG     21   4.0    0.0  10.0
O. 0->S         *    -4     0    -4  -150 *  AG     38   4.0    0.0  10.0


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Existing plus Project, intersection 5
```

```
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
   RECEPTOR *    X      Y      Z
 ------------*--------------------
 1. R_NE-3m  *      7     11   1.8
 2. R_SE-3m  *      7    -11   1.8
 3. R_SW-3m  *     -7    -11   1.8
 4. R_NW-3m  *     -7     11   1.8
 5. R_NE-7m  *     10     14   1.8
 6. R_SE-7m  *     10    -14   1.8
 7. R_SW-7m  *    -10    -14   1.8
 8. R_NW-7m  *    -10     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.7 *  0.2  0.0  1.2  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  279. *   1.3 *  0.0  0.0  0.5  0.6  0.0  0.1  0.0  0.0
 3. R_SW-3m  *   82. *   1.3 *  0.4  0.0  0.0  0.1  0.0  0.6  0.0  0.0
 4. R_NW-3m  *  264. *   1.7 *  0.0  0.0  1.5  0.2  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  260. *   1.2 *  0.0  0.0  0.9  0.2  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.0 *  0.0  0.0  0.4  0.5  0.0  0.0  0.0  0.0
 7. R_SW-7m  *   79. *   1.0 *  0.4  0.0  0.0  0.0  0.0  0.5  0.0  0.0
 8. R_NW-7m  *  100. *   1.2 *  0.8  0.0  0.0  0.0  0.0  0.3  0.0  0.0


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: Existing plus Project, intersection 5
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)
```

```
            *             CONC/LINK
            *               (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O
------------*-----------------------------------
1. R_NE-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
3. R_SW-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
4. R_NW-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
5. R_NE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
7. R_SW-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
8. R_NW-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 6
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
-----------------*-------------------------*----------------------------
A. E->0          *   150     5     0     5 *  AG   1684   4.0    0.0  13.0
B. E->S          *   150     4     0     0 *  AG      8   4.0    0.0  10.0
C. 0->W          *     0     5  -150     5 *  AG   1771   4.0    0.0  13.0
D. W->0          *  -150    -5     0    -5 *  AG   1010   4.0    0.0  13.0
E. W->N          *  -150    -4     0     0 *  AG     20   4.0    0.0  10.0
F. 0->E          *     0    -5   150    -5 *  AG   1023   4.0    0.0  13.0
G. S->0          *     2  -150     4     0 *  AG     24   4.0    0.0  13.0
H. 0->N          *     4     0     2   150 *  AG     23   4.0    0.0  13.0
I. N->0          *    -2   150    -4     0 *  AG     88   4.0    0.0  13.0
J. 0->S          *    -4     0    -2  -150 *  AG     17   4.0    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      9     11   1.8
2. R_SE-3m  *      9    -11   1.8
3. R_SW-3m  *     -9    -11   1.8
4. R_NW-3m  *     -9     11   1.8
5. R_NE-7m  *     12     14   1.8
6. R_SE-7m  *     12    -14   1.8
7. R_SW-7m  *    -12    -14   1.8
```

```
 8. R_NW-7m  *    -12     14   1.8


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Existing plus Project, intersection 6
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.6 *  0.3  0.0  1.1  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  278. *   1.2 *  0.0  0.0  0.4  0.6  0.0  0.2  0.0  0.0
 3. R_SW-3m  *   82. *   1.2 *  0.4  0.0  0.0  0.2  0.0  0.6  0.0  0.0
 4. R_NW-3m  *  264. *   1.6 *  0.0  0.0  1.4  0.2  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  260. *   1.2 *  0.1  0.0  0.8  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.0 *  0.0  0.0  0.4  0.5  0.0  0.0  0.0  0.0
 7. R_SW-7m  *   79. *   1.0 *  0.4  0.0  0.0  0.0  0.0  0.5  0.0  0.0
 8. R_NW-7m  *  100. *   1.1 *  0.8  0.0  0.1  0.0  0.0  0.3  0.0  0.0



             * CONC/LINK
             *   (PPM)
  RECEPTOR   *   I    J
 ------------*----------
 1. R_NE-3m  *  0.0  0.0
 2. R_SE-3m  *  0.0  0.0
 3. R_SW-3m  *  0.0  0.0
 4. R_NW-3m  *  0.0  0.0
 5. R_NE-7m  *  0.0  0.0
 6. R_SE-7m  *  0.0  0.0
 7. R_SW-7m  *  0.0  0.0
 8. R_NW-7m  *  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 7
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM             ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. E->0         *   150     5     0     5 *  AG   1079   4.0    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    351   4.0    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1410   4.0    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG    979   4.0    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG     10   4.0    0.0  10.0
F. 0->E         *     0    -5   150    -5 *  AG   1452   4.0    0.0  13.0
G. S->0         *     7  -150     9     0 *  AG    578   4.0    0.0  13.0
H. S->W         *     7  -150     0     0 *  AG    231   4.0    0.0  13.0
I. 0->N         *     9     0     5   150 *  AG     42   4.0    0.0  16.5
J. N->0         *    -8   150    -6     0 *  AG    119   4.0    0.0  13.0
K. N->E         *     6   150     0     0 *  AG     89   4.0    0.0  10.0
L. N->W         *   -10   150   -10     0 *  AG    118   4.0    0.0  10.0
M. 0->S         *    -6     0    -6  -150 *  AG    650   4.0    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *     14     11   1.8
2. R_SE-3m  *     14    -11   1.8
3. R_SW-3m  *    -12    -11   1.8
4. R_NW-3m  *    -14     11   1.8
```

```
  5. R_NE-7m  *     17     14   1.8
  6. R_SE-7m  *     17    -14   1.8
  7. R_SW-7m  *    -15    -14   1.8
  8. R_NW-7m  *    -16     14   1.8



           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Existing plus Project, intersection 7
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                 CONC/LINK
              *  BRG  * CONC  *                   (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. R_NE-3m  *   99. *   1.3 *  0.8  0.2  0.0  0.0  0.0  0.3  0.0  0.0
  2. R_SE-3m  *  277. *   1.5 *  0.0  0.0  0.3  0.5  0.0  0.4  0.1  0.0
  3. R_SW-3m  *   83. *   1.7 *  0.3  0.1  0.0  0.2  0.0  0.8  0.1  0.0
  4. R_NW-3m  *   97. *   1.5 *  0.6  0.2  0.4  0.0  0.0  0.3  0.0  0.0
  5. R_NE-7m  *  190. *   1.1 *  0.3  0.1  0.0  0.0  0.0  0.2  0.3  0.1
  6. R_SE-7m  *  281. *   1.2 *  0.0  0.0  0.4  0.4  0.0  0.2  0.1  0.0
  7. R_SW-7m  *   80. *   1.4 *  0.3  0.1  0.0  0.1  0.0  0.7  0.1  0.0
  8. R_NW-7m  *  101. *   1.2 *  0.5  0.1  0.2  0.0  0.0  0.4  0.0  0.0



              *         CONC/LINK
              *           (PPM)
   RECEPTOR   *   I    J    K    L    M
  ------------*------------------------
  1. R_NE-3m  *  0.0  0.0  0.0  0.0  0.0
  2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.1
  3. R_SW-3m  *  0.0  0.0  0.0  0.0  0.2
  4. R_NW-3m  *  0.0  0.0  0.0  0.0  0.0
  5. R_NE-7m  *  0.0  0.0  0.0  0.0  0.1
  6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.1
  7. R_SW-7m  *  0.0  0.0  0.0  0.0  0.2
  8. R_NW-7m  *  0.0  0.0  0.0  0.0  0.0
```

🡅

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: Existing plus Project, intersection 8
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


   I.  SITE VARIABLES

        U=   0.5 M/S              Z0= 400. CM            ALT=     7. (M)
      BRG= WORST CASE             VD=  0.0 CM/S
     CLAS=     7 (G)              VS=  0.0 CM/S
     MIXH= 1000. M               AMB=  0.0 PPM
    SIGTH=    5. DEGREES        TEMP= 16.1 DEGREE (C)


  II.  LINK VARIABLES

     LINK        *  LINK COORDINATES (M)   *               EF     H     W
  DESCRIPTION    *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
-----------------*-------------------------*----------------------------
A. E->0          *   137    66     0     6 *  AG   1198   4.0    0.0  13.0
B. E->S          *   137    64     0     0 *  AG      9   4.0    0.0  10.0
C. 0->W1         *     0     6   -46   -14 *  AG   1389   4.0    0.0  13.0
D. W1->W2        *   -46   -14   -95   -25 *  AG   1389   4.0    0.0  13.0
E. W2->W3        *   -95   -25  -145   -25 *  AG   1389   4.0    0.0  13.0
F. W3->W2        *  -145   -63   -95   -63 *  AG   1483   4.0    0.0  13.0
G. W2->W1        *   -95   -63   -46   -26 *  AG   1483   4.0    0.0  13.0
H. W1->0         *   -46   -26     0    -6 *  AG   1483   4.0    0.0  13.0
I. W3->N         *  -145   -61   -95   -61 *  AG     24   4.0    0.0  10.0
J. W2->N         *   -95   -61   -46   -24 *  AG     24   4.0    0.0  10.0
K. W1->N         *   -46   -24     0     0 *  AG     24   4.0    0.0  10.0
L. 0->E          *     0    -6   137    55 *  AG   1536   4.0    0.0  13.0
M. S->0          *     5  -150     5     0 *  AG     29   4.0    0.0  13.0
N. S->W          *     2  -150     0     0 *  AG     30   4.0    0.0  10.0
O. 0->N          *     5     0     5   150 *  AG     42   4.0    0.0  13.0
P. N->0          *    -5   150    -5     0 *  AG    230   4.0    0.0  13.0
Q. N->E          *    -2   150     0     0 *  AG    101   4.0    0.0  10.0
R. 0->S          *    -5     0    -5  -150 *  AG    137   4.0    0.0  13.0


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
```

```
                  PAGE   2

             JOB: Existing plus Project, intersection 8
             RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT:


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. R_NE-3m  *     11     15   1.8
 2. R_SE-3m  *     11     -8   1.8
 3. R_SW-3m  *    -11    -15   1.8
 4. R_NW-3m  *    -11      8   1.8
 5. R_NE-7m  *     14     18   1.8
 6. R_SE-7m  *     14    -10   1.8
 7. R_SW-7m  *    -14    -18   1.8
 8. R_NW-7m  *    -14     10   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  234. *   1.5 *  0.3  0.0  0.4  0.0  0.0  0.1  0.3  0.2
 2. R_SE-3m  *   59. *   1.4 *  0.2  0.0  0.0  0.0  0.0  0.0  0.0  0.0
 3. R_SW-3m  *   61. *   1.6 *  0.3  0.0  0.0  0.0  0.0  0.0  0.0  0.4
 4. R_NW-3m  *   74. *   1.4 *  0.7  0.0  0.2  0.0  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  234. *   1.4 *  0.4  0.0  0.4  0.0  0.0  0.1  0.3  0.2
 6. R_SE-7m  *  264. *   1.1 *  0.0  0.0  0.1  0.2  0.1  0.0  0.0  0.5
 7. R_SW-7m  *   60. *   1.6 *  0.3  0.0  0.0  0.0  0.0  0.0  0.0  0.4
 8. R_NW-7m  *   77. *   1.0 *  0.5  0.0  0.0  0.0  0.0  0.0  0.0  0.0


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   3

             JOB: Existing plus Project, intersection 8
             RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT:
```

```
 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                      CONC/LINK
            *                        (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R
------------*--------------------------------------------------
1. R_NE-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
2. R_SE-3m  *  0.0  0.0  0.0  1.2  0.0  0.0  0.0  0.0  0.0  0.0
3. R_SW-3m  *  0.0  0.0  0.0  0.9  0.0  0.0  0.0  0.0  0.0  0.0
4. R_NW-3m  *  0.0  0.0  0.0  0.3  0.0  0.0  0.0  0.1  0.0  0.0
5. R_NE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
7. R_SW-7m  *  0.0  0.0  0.0  0.8  0.0  0.0  0.0  0.0  0.0  0.0
8. R_NW-7m  *  0.0  0.0  0.0  0.3  0.0  0.0  0.0  0.1  0.0  0.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 10
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *             EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. N2->N1       *   -53   145   -47    95 *  AG   2908   4.0    0.0  18.0
B. N1->0        *   -47    95   -16     0 *  AG   2908   4.0    0.0  22.0
C. 0->S1        *   -16     0   -16   -50 *  AG   1934   4.0    0.0  22.0
D. S1->S2       *   -16   -50   -35  -148 *  AG   1934   4.0    0.0  22.0
E. S->0         *    68  -142    20     0 *  AG   3671   4.0    0.0  22.0
F. S->W         *    61  -142     0     0 *  AG     55   4.0    0.0  10.0
G. 0->N1        *    20     0     1    72 *  AG   5088   4.0    0.0  18.0
H. N1->N2       *     1    72    -4    97 *  AG   5088   4.0    0.0  18.0
I. N2->N3       *    -4    97    -8   147 *  AG   5088   4.0    0.0  18.0
J. E->0         *    54    -5     0     5 *  AG     15   4.0    0.0  10.0
K. 0->W         *     0     5  -150     5 *  AG   1144   4.0    0.0  14.0
L. W1->N        *  -150    -2     0     0 *  AG    710   4.0    0.0  10.0
M. W2->N        *  -150    -6     0     0 *  AG    710   4.0    0.0  10.0
N. 0->E         *     1     1    55    -9 *  AG      6   4.0    0.0  10.0
O. W->S         *  -150   -10     0   -10 *  AG    103   4.0    0.0  10.0


🡅

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Existing plus Project, intersection 10
```

```
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. R_NE-3m  *     29      4   1.8
 2. R_SE-3m  *     32     -8   1.8
 3. R_SW-3m  *    -26    -14   1.8
 4. R_NW-3m  *    -26      9   1.8
 5. R_NE-7m  *     32      7   1.8
 6. R_SE-7m  *     35    -11   1.8
 7. R_SW-7m  *    -29    -17   1.8
 8. R_NW-7m  *    -29     12   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  267. *   2.7 *  0.0  0.2  0.0  0.0  0.0  0.0  1.1  0.0
 2. R_SE-3m  *  339. *   2.4 *  0.0  0.0  0.0  0.0  0.4  0.0  1.6  0.3
 3. R_SW-3m  *   10. *   1.9 *  0.0  0.6  0.2  0.0  0.0  0.0  0.0  0.2
 4. R_NW-3m  *  141. *   1.8 *  0.0  0.3  0.3  0.0  0.5  0.0  0.0  0.0
 5. R_NE-7m  *  266. *   2.4 *  0.0  0.2  0.0  0.0  0.0  0.0  0.9  0.0
 6. R_SE-7m  *  336. *   2.1 *  0.0  0.0  0.0  0.0  0.4  0.0  1.4  0.2
 7. R_SW-7m  *   12. *   1.7 *  0.0  0.6  0.1  0.0  0.0  0.0  0.0  0.2
 8. R_NW-7m  *  141. *   1.8 *  0.0  0.4  0.3  0.0  0.4  0.0  0.0  0.0


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: Existing plus Project, intersection 10
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)
```

```
             *             CONC/LINK
             *               (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O
------------*-----------------------------------
 1. R_NE-3m  *  0.0  0.0  0.5  0.4  0.4  0.0  0.0
 2. R_SE-3m  *  0.2  0.0  0.0  0.0  0.0  0.0  0.0
 3. R_SW-3m  *  0.3  0.0  0.2  0.1  0.1  0.0  0.0
 4. R_NW-3m  *  0.0  0.0  0.3  0.2  0.2  0.0  0.0
 5. R_NE-7m  *  0.0  0.0  0.5  0.3  0.3  0.0  0.0
 6. R_SE-7m  *  0.1  0.0  0.0  0.0  0.0  0.0  0.0
 7. R_SW-7m  *  0.3  0.0  0.2  0.1  0.1  0.0  0.0
 8. R_NW-7m  *  0.0  0.0  0.4  0.2  0.2  0.0  0.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 11
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*------------------------*----------------------------
A. E->S         *    25     2     0     0 *  AG      4   4.0    0.0  10.0
B. E->N         *    25     2     0     2 *  AG     11   4.0    0.0  10.0
C. 0->W         *     0     2    25     2 *  AG    274   4.0    0.0  10.0
D. W->N         *   -25    -2     0     0 *  AG    281   4.0    0.0  10.0
E. W->S         *   -25    -2     0    -2 *  AG    490   4.0    0.0  10.0
F. 0->E         *     0    -2    25    -2 *  AG      3   4.0    0.0  10.0
G. S->0         *     5  -150     5     0 *  AG    517   4.0    0.0  13.0
H. S->W         *     4  -150     0     0 *  AG    126   4.0    0.0  10.0
I. 0->N         *     5     0     5   150 *  AG    809   4.0    0.0  10.0
J. N->0         *    -4   150    -4     0 *  AG    647   4.0    0.0  10.0
K. N->E         *    -4   150     0     0 *  AG      3   4.0    0.0  10.0
L. 0->S         *    -4     0    -4  -150 *  AG    933   4.0    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *     11      6   1.8
2. R_SE-3m  *     11     -6   1.8
3. R_SW-3m  *     -7     -6   1.8
4. R_NW-3m  *     -7      6   1.8
5. R_NE-7m  *     14      8   1.8
```

```
  6. R_SE-7m  *     14     -8   1.8
  7. R_SW-7m  *    -10     -8   1.8
  8. R_NW-7m  *    -10      8   1.8


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Existing plus Project, intersection 11
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                 CONC/LINK
              *  BRG  * CONC  *                   (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. R_NE-3m  *  188. *   0.8 *  0.0  0.0  0.1  0.0  0.0  0.0  0.4  0.1
  2. R_SE-3m  *  353. *   0.9 *  0.0  0.0  0.1  0.0  0.0  0.0  0.1  0.0
  3. R_SW-3m  *    6. *   1.1 *  0.0  0.0  0.0  0.1  0.1  0.0  0.0  0.0
  4. R_NW-3m  *  175. *   1.3 *  0.0  0.0  0.0  0.1  0.1  0.0  0.2  0.1
  5. R_NE-7m  *  189. *   0.7 *  0.0  0.0  0.1  0.0  0.0  0.0  0.3  0.1
  6. R_SE-7m  *  350. *   0.6 *  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0
  7. R_SW-7m  *    9. *   0.8 *  0.0  0.0  0.0  0.1  0.1  0.0  0.0  0.0
  8. R_NW-7m  *  172. *   1.0 *  0.0  0.0  0.0  0.1  0.1  0.0  0.2  0.1



              *      CONC/LINK
              *        (PPM)
   RECEPTOR   *   I    J    K    L
  ------------*-------------------
  1. R_NE-3m  *  0.0  0.0  0.0  0.3
  2. R_SE-3m  *  0.6  0.2  0.0  0.0
  3. R_SW-3m  *  0.2  0.5  0.0  0.1
  4. R_NW-3m  *  0.0  0.1  0.0  0.8
  5. R_NE-7m  *  0.0  0.0  0.0  0.2
  6. R_SE-7m  *  0.4  0.2  0.0  0.0
  7. R_SW-7m  *  0.2  0.4  0.0  0.0
  8. R_NW-7m  *  0.0  0.0  0.0  0.6


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 12
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-----------------------------
A. E->0         *   150     4     0     4 *  AG    324   4.0    0.0  13.0
B. 0->W         *     0     4  -150     2 *  AG    327   4.0    0.0  10.0
C. W->0         *  -150    -2     0    -2 *  AG    150   4.0    0.0  10.0
D. 0->E         *     0    -2   150    -2 *  AG    550   4.0    0.0  10.0
E. S->0         *     2  -150     2     0 *  AG   1080   4.0    0.0  10.0
F. 0->N         *     2     0     2   150 *  AG    643   4.0    0.0  10.0
G. N->0         *    -4  -150    -4     0 *  AG    890   4.0    0.0  10.0
H. N->E         *    -4  -150     0     0 *  AG    103   4.0    0.0  10.0
I. 0->S         *    -4     0    -2  -150 *  AG   1027   4.0    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      6      9   1.8
2. R_SE-3m  *      6     -6   1.8
3. R_SW-3m  *     -7     -6   1.8
4. R_NW-3m  *     -7      9   1.8
5. R_NE-7m  *      8     12   1.8
6. R_SE-7m  *      8     -8   1.8
7. R_SW-7m  *    -10     -8   1.8
8. R_NW-7m  *    -10     12   1.8
```

```
↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Existing plus Project, intersection 12
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                 CONC/LINK
              *  BRG  * CONC  *                   (PPM)
  RECEPTOR    * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  186. *   2.1 *  0.1  0.0  0.0  0.1  0.8  0.2  0.4  0.1
 2. R_SE-3m  *  186. *   2.0 *  0.0  0.0  0.0  0.0  1.0  0.0  0.4  0.1
 3. R_SW-3m  *  175. *   2.4 *  0.0  0.0  0.0  0.0  0.4  0.0  0.9  0.1
 4. R_NW-3m  *  175. *   2.1 *  0.0  0.1  0.0  0.0  0.4  0.0  0.7  0.1
 5. R_NE-7m  *  188. *   1.6 *  0.1  0.0  0.0  0.1  0.6  0.0  0.3  0.1
 6. R_SE-7m  *  189. *   1.4 *  0.0  0.0  0.0  0.0  0.6  0.0  0.3  0.1
 7. R_SW-7m  *  171. *   1.6 *  0.0  0.0  0.0  0.0  0.4  0.0  0.5  0.1
 8. R_NW-7m  *  173. *   1.7 *  0.0  0.1  0.0  0.0  0.4  0.0  0.5  0.1



              *CONC/LINK
              * (PPM)
  RECEPTOR    *   I
 ------------*-----
 1. R_NE-3m  *  0.5
 2. R_SE-3m  *  0.4
 3. R_SW-3m  *  1.0
 4. R_NW-3m  *  0.8
 5. R_NE-7m  *  0.4
 6. R_SE-7m  *  0.4
 7. R_SW-7m  *  0.6
 8. R_NW-7m  *  0.6


↑
```

```
                            CO_DGS_Intersection14.dat

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing plus Project, intersection 14
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. 0->W         *     0     4  -150     4 *  AG    583   4.0    0.0  13.0
B. W->0         *  -150    -4     0    -4 *  AG    776   4.0    0.0  13.0
C. S->0         *     2  -150     2     0 *  AG    420   4.0    0.0  10.0
D. 0->N         *     2     0     2   150 *  AG   1080   4.0    0.0  10.0
E. N->0         *    -4  -150    -4     0 *  AG   1027   4.0    0.0  10.0
F. 0->S         *    -4     0    -2  -150 *  AG    560   4.0    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      6      9   1.8
2. R_SE-3m  *      6     -9   1.8
3. R_SW-3m  *     -7     -9   1.8
4. R_NW-3m  *     -7      9   1.8
5. R_NE-7m  *      8     12   1.8
6. R_SE-7m  *      8    -12   1.8
7. R_SW-7m  *    -10    -12   1.8
8. R_NW-7m  *    -10     12   1.8


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Existing plus Project, intersection 14
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *           CONC/LINK
              *  BRG  * CONC  *             (PPM)
  RECEPTOR    * (DEG) * (PPM) *   A    B    C    D    E    F
-------------*-------*-------*------------------------------
 1. R_NE-3m  *  186. *   1.3 *  0.0  0.0  0.3  0.3  0.4  0.3
 2. R_SE-3m  *  276. *   1.2 *  0.2  0.6  0.1  0.0  0.2  0.1
 3. R_SW-3m  *  176. *   1.8 *  0.0  0.0  0.2  0.0  1.0  0.6
 4. R_NW-3m  *  176. *   1.7 *  0.1  0.2  0.2  0.0  0.8  0.5
 5. R_NE-7m  *  189. *   0.9 *  0.0  0.0  0.3  0.1  0.4  0.2
 6. R_SE-7m  *  279. *   1.0 *  0.2  0.4  0.1  0.0  0.2  0.1
 7. R_SW-7m  *  172. *   1.1 *  0.0  0.0  0.2  0.0  0.6  0.4
 8. R_NW-7m  *  173. *   1.4 *  0.1  0.1  0.2  0.0  0.6  0.4
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: Existing plus Project, intersection 15
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  I.  SITE VARIABLES

        U=   0.5 M/S            Z0= 400. CM            ALT=     7. (M)
      BRG= WORST CASE           VD=  0.0 CM/S
     CLAS=     7 (G)            VS=  0.0 CM/S
     MIXH= 1000. M             AMB=  0.0 PPM
    SIGTH=    5. DEGREES      TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*----------------------------
A. E->0         *   100     5     0     5 *  AG   1215   4.0    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    185   4.0    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1635   4.0    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG   1325   4.0    0.0  13.0
E. 0->E         *     0    -5   150    -5 *  AG   1085   4.0    0.0  13.0
F. 0->S         *     4     0     4   -25 *  AG    445   4.0    0.0  10.0
G. S->E         *     4   -25     4     0 *  AG    420   4.0    0.0  10.0
H. S->W         *     4   -25     0     0 *  AG     20   4.0    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      7    -11   1.8
3. R_SW-3m  *     -6    -11   1.8
4. R_NW-3m  *     -6     11   1.8
5. R_NE-7m  *     10     14   1.8
6. R_SE-7m  *     10    -14   1.8
7. R_SW-7m  *     -8    -14   1.8
8. R_NW-7m  *     -8     14   1.8
```

```
↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Existing plus Project, intersection 15
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                CONC/LINK
              *  BRG  * CONC  *                  (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. R_NE-3m  *  264. *   1.5 *  0.2  0.0  1.1  0.2  0.0  0.0  0.0  0.0
  2. R_SE-3m  *  277. *   1.6 *  0.0  0.0  0.4  0.9  0.1  0.1  0.1  0.0
  3. R_SW-3m  *   81. *   1.3 *  0.2  0.1  0.0  0.1  0.7  0.1  0.1  0.0
  4. R_NW-3m  *  263. *   1.5 *  0.0  0.0  1.3  0.3  0.0  0.0  0.0  0.0
  5. R_NE-7m  *  260. *   1.1 *  0.0  0.0  0.8  0.3  0.0  0.0  0.0  0.0
  6. R_SE-7m  *  281. *   1.3 *  0.0  0.0  0.4  0.6  0.0  0.1  0.1  0.0
  7. R_SW-7m  *   76. *   1.0 *  0.3  0.1  0.0  0.0  0.5  0.1  0.1  0.0
  8. R_NW-7m  *  259. *   1.1 *  0.0  0.0  0.8  0.3  0.0  0.0  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 1
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   100     7     0     7 *  AG    115   3.7    0.0  10.0
B. E->S         *   100     7     0     0 *  AG    670   3.7    0.0  13.0
C. 0->W         *     0     7   -75    11 *  AG    440   3.7    0.0  10.0
D. W->0         *   -75    -7     0    -7 *  AG    200   3.7    0.0  16.5
E. 0->E         *     0    -7   100    -7 *  AG   1945   3.7    0.0  16.5
F. N->0         *   -24  -148     0     0 *  AG   2165   3.7    0.0  16.5
G. 0->S         *     0     0    30   147 *  AG    765   3.7    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      4    -14   1.8
3. R_SW-3m  *     -9    -14   1.8
4. R_NW-3m  *     -6     11   1.8
5. R_NE-7m  *     10     14   1.8
6. R_SE-7m  *      7    -17   1.8
7. R_SW-7m  *    -12    -17   1.8
8. R_NW-7m  *     -9     14   1.8
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 1
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *              CONC/LINK
              *  BRG  * CONC  *                (PPM)
  RECEPTOR    * (DEG) * (PPM) *   A    B    C    D    E    F    G
-------------*-------*-------*-----------------------------------
 1. R_NE-3m  *  192. *   1.7 *  0.0  0.1  0.0  0.0  0.3  1.1  0.2
 2. R_SE-3m  *    7. *   1.4 *  0.0  0.1  0.0  0.0  0.4  0.4  0.5
 3. R_SW-3m  *   80. *   1.5 *  0.0  0.1  0.0  0.0  0.8  0.5  0.0
 4. R_NW-3m  *  184. *   1.3 *  0.0  0.0  0.1  0.0  0.0  1.1  0.0
 5. R_NE-7m  *  195. *   1.5 *  0.0  0.1  0.0  0.0  0.3  1.0  0.1
 6. R_SE-7m  *  355. *   1.1 *  0.0  0.1  0.0  0.0  0.4  0.3  0.2
 7. R_SW-7m  *   77. *   1.4 *  0.0  0.1  0.0  0.0  0.7  0.5  0.0
 8. R_NW-7m  *  181. *   1.0 *  0.0  0.0  0.1  0.0  0.0  0.9  0.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 2
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   100     5     0     5 *  AG   1635   3.7    0.0  13.0
B. 0->W         *     0     5   -75     5 *  AG    785   3.7    0.0  16.5
C. W->0         *   -75    -5     0    -5 *  AG   1805   3.7    0.0  16.5
D. W->N         *   -75    -4     0     0 *  AG    140   3.7    0.0  10.0
E. 0->E         *     0    -5   100    -5 *  AG   3190   3.7    0.0  20.0
F. S->0         *   -49  -142     0     0 *  AG   1450   3.7    0.0  16.5
G. 0->N         *     0     0     0   150 *  AG   1055   3.7    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      6    -13   1.8
3. R_SW-3m  *     -9    -13   1.8
4. R_NW-3m  *     -7     11   1.8
5. R_NE-7m  *     10     14   1.8
6. R_SE-7m  *      8    -15   1.8
7. R_SW-7m  *    -12    -15   1.8
8. R_NW-7m  *    -10     14   1.8
```

```
↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 2
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *              CONC/LINK
              *  BRG  * CONC  *                (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G
 -------------*-------*-------*-----------------------------------
  1. R_NE-3m  *  201. *   1.8 *  0.4  0.0  0.1  0.0  0.4  0.8  0.2
  2. R_SE-3m  *   77. *   1.6 *  0.3  0.0  0.0  0.0  1.3  0.0  0.0
  3. R_SW-3m  *   80. *   1.9 *  0.3  0.0  0.2  0.0  1.1  0.3  0.0
  4. R_NW-3m  *  101. *   1.8 *  0.8  0.1  0.0  0.0  0.7  0.0  0.3
  5. R_NE-7m  *  202. *   1.6 *  0.4  0.0  0.0  0.0  0.4  0.7  0.1
  6. R_SE-7m  *   75. *   1.5 *  0.3  0.0  0.0  0.0  1.3  0.0  0.0
  7. R_SW-7m  *   76. *   1.7 *  0.3  0.0  0.1  0.0  1.0  0.4  0.0
  8. R_NW-7m  *  104. *   1.6 *  0.6  0.1  0.0  0.0  0.6  0.0  0.2


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 4
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   150     5     0     5 *  AG   1540   3.7    0.0  13.0
B. E->S         *   150     4     0     0 *  AG      5   3.7    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1940   3.7    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG   1120   3.7    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG    220   3.7    0.0  10.0
F. 0->E         *     0    -5   150    -5 *  AG   1130   3.7    0.0  13.0
G. S->0         *     4  -150     4     0 *  AG     40   3.7    0.0  10.0
H. S->W         *     4  -150     0     0 *  AG    180   3.7    0.0  10.0
I. 0->N1        *     4     0     4    10 *  AG    250   3.7    0.0  10.0
J. 0->N2        *     4    10    47   143 *  AG    250   3.7    0.0  11.5
K. N1->N2       *    40   143    -4    10 *  AG    285   3.7    0.0  11.5
L. N2->0        *    -4    10    -4     0 *  AG    285   3.7    0.0  10.0
M. 0->S         *    -4     0    -4  -150 *  AG     70   3.7    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      7    -11   1.8
3. R_SW-3m  *     -7    -11   1.8
4. R_NW-3m  *     -7     11   1.8
```

```
 5. R_NE-7m  *     10     14   1.8
 6. R_SE-7m  *     10    -14   1.8
 7. R_SW-7m  *    -10    -14   1.8
 8. R_NW-7m  *    -10     14   1.8



          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Cumulative plus Project, intersection 4
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  263. *   1.8 *  0.2  0.0  1.1  0.2  0.1  0.0  0.0  0.0
 2. R_SE-3m  *  278. *   1.4 *  0.0  0.0  0.4  0.6  0.1  0.1  0.0  0.0
 3. R_SW-3m  *  279. *   1.3 *  0.0  0.0  0.4  0.8  0.1  0.0  0.0  0.0
 4. R_NW-3m  *  263. *   1.7 *  0.0  0.0  1.4  0.2  0.1  0.0  0.0  0.0
 5. R_NE-7m  *  260. *   1.3 *  0.0  0.0  0.9  0.3  0.1  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.1 *  0.0  0.0  0.4  0.5  0.1  0.0  0.0  0.0
 7. R_SW-7m  *   79. *   1.0 *  0.4  0.0  0.0  0.0  0.0  0.5  0.0  0.0
 8. R_NW-7m  *  259. *   1.2 *  0.0  0.0  0.9  0.2  0.1  0.0  0.0  0.0



             *         CONC/LINK
             *           (PPM)
  RECEPTOR   *  I    J    K    L    M
------------*------------------------
 1. R_NE-3m  *  0.0  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.0
 3. R_SW-3m  *  0.0  0.0  0.0  0.0  0.0
 4. R_NW-3m  *  0.0  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  0.0  0.1  0.0  0.0  0.0
 6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.0
 7. R_SW-7m  *  0.0  0.0  0.0  0.0  0.0
 8. R_NW-7m  *  0.0  0.0  0.0  0.0  0.0
```

🡅

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: Cumulative plus Project, intersection 5
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


   I.  SITE VARIABLES

          U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
        BRG= WORST CASE            VD=  0.0 CM/S
       CLAS=     7 (G)             VS=  0.0 CM/S
       MIXH= 1000. M              AMB=  0.0 PPM
      SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
 A. E->0         *   150     5     0     5 *  AG   1445   3.7    0.0  13.0
 B. E->S         *   150     4     0     0 *  AG     10   3.7    0.0  10.0
 C. 0->W         *     0     5  -150     5 *  AG   1545   3.7    0.0  13.0
 D. W->0         *  -150    -5     0    -5 *  AG   1085   3.7    0.0  13.0
 E. W->N         *  -150    -4     0     0 *  AG     45   3.7    0.0  10.0
 F. 0->E         *     0    -5   150    -5 *  AG   1205   3.7    0.0  13.0
 G. S->0         *     4  -150     4     0 *  AG    435   3.7    0.0  10.0
 H. S->W         *     4  -150     0     0 *  AG    230   3.7    0.0  10.0
 I. 0->N1        *     4     0     4    10 *  AG    665   3.7    0.0  10.0
 J. 0->N2        *     4    10    47   143 *  AG    665   3.7    0.0  11.5
 K. N1->N2       *    40   143    -4    10 *  AG    455   3.7    0.0  11.5
 L. N2->0        *    -4    10    -4     0 *  AG    455   3.7    0.0  10.0
 M. N1->N2       *    40   143    -4    10 *  AG    240   3.7    0.0  12.0
 N. N2->0        *    -4    10     0     0 *  AG    240   3.7    0.0  10.0
 O. 0->S         *    -4     0    -4  -150 *  AG    530   3.7    0.0  10.0


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 5
```

```
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
   RECEPTOR *    X      Y      Z
 ------------*--------------------
 1. R_NE-3m  *      7     11   1.8
 2. R_SE-3m  *      7    -11   1.8
 3. R_SW-3m  *     -7    -11   1.8
 4. R_NW-3m  *     -7     11   1.8
 5. R_NE-7m  *     10     14   1.8
 6. R_SE-7m  *     10    -14   1.8
 7. R_SW-7m  *    -10    -14   1.8
 8. R_NW-7m  *    -10     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  263. *   1.6 *  0.2  0.0  0.9  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  278. *   1.4 *  0.0  0.0  0.4  0.6  0.0  0.2  0.1  0.1
 3. R_SW-3m  *   19. *   1.6 *  0.0  0.0  0.2  0.3  0.0  0.0  0.0  0.0
 4. R_NW-3m  *   97. *   1.6 *  0.9  0.0  0.2  0.0  0.0  0.3  0.0  0.0
 5. R_NE-7m  *  260. *   1.3 *  0.0  0.0  0.7  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.1 *  0.0  0.0  0.4  0.5  0.0  0.0  0.1  0.0
 7. R_SW-7m  *   20. *   1.4 *  0.0  0.0  0.2  0.3  0.0  0.0  0.0  0.0
 8. R_NW-7m  *  101. *   1.3 *  0.6  0.0  0.0  0.0  0.0  0.3  0.0  0.0


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: Cumulative plus Project, intersection 5
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)
```

```
            *              CONC/LINK
            *                (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O
-----------*-----------------------------------
1. R_NE-3m  *  0.0  0.1  0.0  0.1  0.0  0.0  0.0
2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.1
3. R_SW-3m  *  0.0  0.4  0.2  0.1  0.1  0.0  0.1
4. R_NW-3m  *  0.1  0.0  0.1  0.0  0.0  0.0  0.0
5. R_NE-7m  *  0.0  0.2  0.1  0.0  0.0  0.0  0.0
6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.1
7. R_SW-7m  *  0.0  0.3  0.2  0.1  0.1  0.0  0.1
8. R_NW-7m  *  0.0  0.1  0.1  0.0  0.1  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 6
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=      7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. E->0         *   150     5     0     5 *  AG   1355   3.7    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    280   3.7    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1675   3.7    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG   1185   3.7    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG     20   3.7    0.0  10.0
F. 0->E         *     0    -5   150    -5 *  AG   1105   3.7    0.0  13.0
G. S->0         *     2  -150     4     0 *  AG    380   3.7    0.0  13.0
H. 0->N         *     4     0     2   150 *  AG    195   3.7    0.0  13.0
I. N->0         *    -2   150    -4     0 *  AG    290   3.7    0.0  13.0
J. 0->S         *    -4     0    -2  -150 *  AG    535   3.7    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      9     11   1.8
2. R_SE-3m  *      9    -11   1.8
3. R_SW-3m  *     -9    -11   1.8
4. R_NW-3m  *     -9     11   1.8
5. R_NE-7m  *     12     14   1.8
6. R_SE-7m  *     12    -14   1.8
7. R_SW-7m  *    -12    -14   1.8
```

```
 8. R_NW-7m  *    -12     14   1.8


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 6
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.5 *  0.2  0.0  1.0  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  278. *   1.4 *  0.0  0.0  0.4  0.6  0.0  0.2  0.1  0.0
 3. R_SW-3m  *   82. *   1.4 *  0.3  0.1  0.0  0.2  0.0  0.6  0.1  0.0
 4. R_NW-3m  *   96. *   1.5 *  0.8  0.1  0.3  0.0  0.0  0.2  0.0  0.0
 5. R_NE-7m  *  260. *   1.2 *  0.0  0.0  0.7  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.1 *  0.0  0.0  0.4  0.5  0.0  0.0  0.1  0.0
 7. R_SW-7m  *   79. *   1.2 *  0.3  0.1  0.0  0.1  0.0  0.5  0.1  0.0
 8. R_NW-7m  *  100. *   1.1 *  0.6  0.1  0.1  0.0  0.0  0.3  0.0  0.0



             * CONC/LINK
             *   (PPM)
  RECEPTOR   *   I    J
 ------------*----------
 1. R_NE-3m  *  0.1  0.0
 2. R_SE-3m  *  0.0  0.1
 3. R_SW-3m  *  0.0  0.1
 4. R_NW-3m  *  0.1  0.0
 5. R_NE-7m  *  0.1  0.0
 6. R_SE-7m  *  0.0  0.1
 7. R_SW-7m  *  0.0  0.1
 8. R_NW-7m  *  0.1  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 7
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

       U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
     BRG= WORST CASE            VD=  0.0 CM/S
    CLAS=     7 (G)             VS=  0.0 CM/S
    MIXH= 1000. M              AMB=  0.0 PPM
   SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*----------------------------
A. E->0        *   150     5     0     5 *  AG   1135   3.7    0.0  13.0
B. E->S        *   150     4     0     0 *  AG    495   3.7    0.0  10.0
C. 0->W        *     0     5  -150     5 *  AG   1400   3.7    0.0  13.0
D. W->0        *  -150    -5     0    -5 *  AG   1080   3.7    0.0  13.0
E. W->N        *  -150    -4     0     0 *  AG      5   3.7    0.0  10.0
F. 0->E        *     0    -5   150    -5 *  AG   1070   3.7    0.0  13.0
G. S->0        *     7  -150     9     0 *  AG    495   3.7    0.0  13.0
H. S->W        *     7  -150     0     0 *  AG    230   3.7    0.0  13.0
I. 0->N        *     9     0     5   150 *  AG    235   3.7    0.0  16.5
J. N->0        *    -8   150    -6     0 *  AG    405   3.7    0.0  13.0
K. N->E        *     6   150     0     0 *  AG     80   3.7    0.0  10.0
L. N->W        *   -10   150   -10     0 *  AG     50   3.7    0.0  10.0
M. 0->S        *    -6     0    -6  -150 *  AG   1270   3.7    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *     14     11   1.8
2. R_SE-3m  *     14    -11   1.8
3. R_SW-3m  *    -12    -11   1.8
4. R_NW-3m  *    -14     11   1.8
```

```
 5. R_NE-7m  *     17     14   1.8
 6. R_SE-7m  *     17    -14   1.8
 7. R_SW-7m  *    -15    -14   1.8
 8. R_NW-7m  *    -16     14   1.8



           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 7
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: 


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.4 *  0.3  0.0  0.7  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  277. *   1.5 *  0.0  0.0  0.3  0.6  0.0  0.3  0.1  0.0
 3. R_SW-3m  *   82. *   1.7 *  0.3  0.2  0.0  0.2  0.0  0.5  0.1  0.0
 4. R_NW-3m  *   97. *   1.5 *  0.6  0.2  0.3  0.0  0.0  0.2  0.0  0.0
 5. R_NE-7m  *  260. *   1.1 *  0.1  0.0  0.6  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.2 *  0.0  0.0  0.3  0.4  0.0  0.1  0.1  0.0
 7. R_SW-7m  *   79. *   1.4 *  0.3  0.2  0.0  0.1  0.0  0.4  0.1  0.0
 8. R_NW-7m  *  100. *   1.2 *  0.5  0.2  0.1  0.0  0.0  0.3  0.0  0.0



             *         CONC/LINK
             *           (PPM)
  RECEPTOR   *   I    J    K    L    M
 ------------*--------------------------
 1. R_NE-3m  *  0.0  0.1  0.0  0.0  0.0
 2. R_SE-3m  *  0.0  0.0  0.0  0.0  0.2
 3. R_SW-3m  *  0.0  0.0  0.0  0.0  0.3
 4. R_NW-3m  *  0.0  0.1  0.0  0.0  0.0
 5. R_NE-7m  *  0.1  0.1  0.0  0.0  0.0
 6. R_SE-7m  *  0.0  0.0  0.0  0.0  0.2
 7. R_SW-7m  *  0.0  0.0  0.0  0.0  0.3
 8. R_NW-7m  *  0.0  0.1  0.0  0.0  0.0
```

↑

```
                              CO_DGS_Intersection8.dat

            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
                     PAGE   1

                JOB: Cumulative plus Project, intersection 8
                RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT:


    I.  SITE VARIABLES

           U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
         BRG= WORST CASE            VD=  0.0 CM/S
        CLAS=     7 (G)             VS=  0.0 CM/S
        MIXH= 1000. M              AMB=  0.0 PPM
       SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


   II.  LINK VARIABLES

        LINK      *  LINK COORDINATES (M)   *              EF     H     W
     DESCRIPTION  *    X1    Y1    X2    Y2 * TYPE   VPH  (G/MI)  (M)   (M)
  ----------------*-------------------------*-------------------------------
  A. E->0         *   137    66     0     6 *  AG   1840    3.7    0.0  13.0
  B. E->S         *   137    64     0     0 *  AG    135    3.7    0.0  10.0
  C. 0->W1        *     0     6   -46   -14 *  AG   1710    3.7    0.0  13.0
  D. W1->W2       *   -46   -14   -95   -25 *  AG   1710    3.7    0.0  13.0
  E. W2->W3       *   -95   -25  -145   -25 *  AG   1710    3.7    0.0  13.0
  F. W3->W2       *  -145   -63   -95   -63 *  AG   1055    3.7    0.0  13.0
  G. W2->W1       *   -95   -63   -46   -26 *  AG   1055    3.7    0.0  13.0
  H. W1->0        *   -46   -26     0    -6 *  AG   1055    3.7    0.0  13.0
  I. W3->N        *  -145   -61   -95   -61 *  AG    120    3.7    0.0  10.0
  J. W2->N        *   -95   -61   -46   -24 *  AG    120    3.7    0.0  10.0
  K. W1->N        *   -46   -24     0     0 *  AG    120    3.7    0.0  10.0
  L. 0->E         *     0    -6   137    55 *  AG   1570    3.7    0.0  13.0
  M. S->0         *     5  -150     5     0 *  AG    415    3.7    0.0  13.0
  N. S->W         *     2  -150     0     0 *  AG     15    3.7    0.0  10.0
  O. 0->N         *     5     0     5   150 *  AG    355    3.7    0.0  13.0
  P. N->0         *    -5   150    -5     0 *  AG     65    3.7    0.0  13.0
  Q. N->E         *    -2   150     0     0 *  AG    150    3.7    0.0  10.0
  R. 0->S         *    -5     0    -5  -150 *  AG    160    3.7    0.0  13.0


↑

            CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                     JUNE 1989 VERSION
```

```
                    PAGE   2

               JOB: Cumulative plus Project, intersection 8
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. R_NE-3m  *     11     15   1.8
 2. R_SE-3m  *     11     -8   1.8
 3. R_SW-3m  *    -11    -15   1.8
 4. R_NW-3m  *    -11      8   1.8
 5. R_NE-7m  *     14     18   1.8
 6. R_SE-7m  *     14    -10   1.8
 7. R_SW-7m  *    -14    -18   1.8
 8. R_NW-7m  *    -14     10   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *   73. *   1.7 *  1.3  0.1  0.0  0.0  0.0  0.0  0.0  0.0
 2. R_SE-3m  *   58. *   1.5 *  0.4  0.1  0.0  0.0  0.0  0.0  0.0  0.0
 3. R_SW-3m  *   60. *   1.6 *  0.4  0.1  0.0  0.0  0.0  0.0  0.0  0.3
 4. R_NW-3m  *   73. *   1.8 *  1.0  0.1  0.3  0.0  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  234. *   1.6 *  0.5  0.0  0.5  0.0  0.0  0.1  0.2  0.1
 6. R_SE-7m  *   54. *   1.0 *  0.4  0.1  0.0  0.0  0.0  0.0  0.0  0.0
 7. R_SW-7m  *   59. *   1.6 *  0.4  0.1  0.0  0.0  0.0  0.0  0.0  0.3
 8. R_NW-7m  *   77. *   1.2 *  0.7  0.1  0.0  0.0  0.0  0.0  0.0  0.0


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: Cumulative plus Project, intersection 8
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:
```

```
 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                      CONC/LINK
           *                        (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R
-----------*-----------------------------------------------------
1. R_NE-3m  *  0.0  0.0  0.0  0.3  0.0  0.0  0.0  0.0  0.0  0.0
2. R_SE-3m  *  0.0  0.0  0.0  1.1  0.0  0.0  0.0  0.0  0.0  0.0
3. R_SW-3m  *  0.0  0.0  0.0  0.8  0.1  0.0  0.0  0.0  0.0  0.0
4. R_NW-3m  *  0.0  0.0  0.0  0.3  0.0  0.0  0.1  0.0  0.0  0.0
5. R_NE-7m  *  0.0  0.0  0.0  0.0  0.0  0.0  0.1  0.0  0.0  0.0
6. R_SE-7m  *  0.0  0.0  0.0  0.6  0.0  0.0  0.0  0.0  0.0  0.0
7. R_SW-7m  *  0.0  0.0  0.0  0.7  0.1  0.0  0.0  0.0  0.0  0.0
8. R_NW-7m  *  0.0  0.0  0.0  0.3  0.0  0.0  0.1  0.0  0.0  0.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative + Project, intersection 9F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
-----------------*-------------------------*-----------------------------
A. E->0          *   137    66     0     6 *  AG   1930   3.7    0.0  13.0
B. E->S          *   137    64     0     0 *  AG    120   3.7    0.0  10.0
C. 0->W          *     0     6  -137   -55 *  AG   1975   3.7    0.0  13.0
D. W->0          *  -137   -66     0    -6 *  AG   1490   3.7    0.0  13.0
E. W->N          *  -137   -64     0     0 *  AG     80   3.7    0.0  10.0
F. 0->E          *     0    -6   137    55 *  AG   2005   3.7    0.0  13.0
G. S->0          *     4  -150     4     0 *  AG    465   3.7    0.0  10.0
H. S->W          *     4  -150     0     0 *  AG     35   3.7    0.0  10.0
I. 0->N          *     4     0     4   150 *  AG    170   3.7    0.0  10.0
J. N->0          *    -4   150    -4     0 *  AG     80   3.7    0.0  10.0
K. N->E          *    -4   150     0     0 *  AG    115   3.7    0.0  10.0
L. 0->S          *    -4     0    -4  -150 *  AG    165   3.7    0.0  10.0


III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
-------------*--------------------
1. R_NE-3m   *      7     14   1.8
2. R_SE-3m   *      7     -9   1.8
3. R_SW-3m   *     -7    -14   1.8
4. R_NW-3m   *     -7      9   1.8
5. R_NE-7m   *     10     17   1.8
```

```
 6. R_SE-7m  *     10    -12   1.8
 7. R_SW-7m  *    -10    -17   1.8
 8. R_NW-7m  *    -10     12   1.8


↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative + Project, intersection 9F
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. R_NE-3m  *  241. *   1.9 *  0.3  0.0  1.1  0.3  0.0  0.0  0.0  0.0
 2. R_SE-3m  *   59. *   1.8 *  0.3  0.1  0.0  0.0  0.0  1.4  0.0  0.0
 3. R_SW-3m  *   60. *   2.0 *  0.4  0.1  0.0  0.3  0.0  1.1  0.1  0.0
 4. R_NW-3m  *   74. *   1.9 *  1.1  0.1  0.2  0.0  0.0  0.4  0.0  0.0
 5. R_NE-7m  *  240. *   1.9 *  0.4  0.0  1.0  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  258. *   1.2 *  0.0  0.0  0.4  0.6  0.0  0.0  0.1  0.0
 7. R_SW-7m  *   59. *   1.9 *  0.4  0.1  0.0  0.3  0.0  0.9  0.1  0.0
 8. R_NW-7m  *   78. *   1.3 *  0.8  0.0  0.0  0.0  0.0  0.4  0.0  0.0



             *      CONC/LINK
             *        (PPM)
  RECEPTOR   *   I    J    K    L
 ------------*---------------------
 1. R_NE-3m  *  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  0.0  0.0  0.0  0.0
 3. R_SW-3m  *  0.0  0.0  0.0  0.0
 4. R_NW-3m  *  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  0.0  0.0  0.0  0.0
 7. R_SW-7m  *  0.0  0.0  0.0  0.0
 8. R_NW-7m  *  0.0  0.0  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative + Project, intersection 12F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
      BRG= WORST CASE             VD=  0.0 CM/S
     CLAS=     7 (G)              VS=  0.0 CM/S
     MIXH= 1000. M               AMB=  0.0 PPM
    SIGTH=    5. DEGREES        TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   150     4     0     4 *  AG    655   3.7    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    400   3.7    0.0  10.0
C. 0->W         *     0     4  -150     2 *  AG    730   3.7    0.0  13.0
D. W->0         *  -150    -4     0    -4 *  AG    470   3.7    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG    145   3.7    0.0  10.0
F. 0->E         *     0    -4   150    -4 *  AG   1600   3.7    0.0  13.0
G. S->0         *     5  -150     5     0 *  AG   1160   3.7    0.0  10.0
H. S->W         *     4  -150     0     0 *  AG     85   3.7    0.0  10.0
I. 0->N         *     5     0     5   150 *  AG    545   3.7    0.0  10.0
J. N->0         *    -5   150    -5     0 *  AG   1045   3.7    0.0  10.0
K. N->E         *    -4   150     0     0 *  AG    250   3.7    0.0  10.0
L. 0->S         *    -5     0    -5  -150 *  AG   1335   3.7    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *     11      7   1.8
2. R_SE-3m  *     11     -7   1.8
3. R_SW-3m  *    -11     -7   1.8
4. R_NW-3m  *    -11      7   1.8
5. R_NE-7m  *     14     10   1.8
```

```
 6. R_SE-7m  *     14    -10   1.8
 7. R_SW-7m  *    -14    -10   1.8
 8. R_NW-7m  *    -14     10   1.8


↑

          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Cumulative + Project, intersection 12F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
 1. R_NE-3m  *  188. *   1.6 *  0.1  0.1  0.0  0.0  0.0  0.3  0.7  0.0
 2. R_SE-3m  *   84. *   1.6 *  0.2  0.2  0.0  0.0  0.0  1.2  0.0  0.0
 3. R_SW-3m  *   85. *   2.0 *  0.2  0.2  0.0  0.1  0.0  0.9  0.2  0.0
 4. R_NW-3m  *   97. *   1.7 *  0.4  0.2  0.1  0.0  0.0  0.6  0.0  0.0
 5. R_NE-7m  *  190. *   1.4 *  0.2  0.1  0.0  0.0  0.0  0.3  0.5  0.0
 6. R_SE-7m  *   82. *   1.4 *  0.2  0.2  0.0  0.0  0.0  1.1  0.0  0.0
 7. R_SW-7m  *   83. *   1.7 *  0.2  0.2  0.0  0.1  0.0  0.8  0.2  0.0
 8. R_NW-7m  *   98. *   1.5 *  0.3  0.2  0.1  0.0  0.0  0.5  0.0  0.0



             *      CONC/LINK
             *        (PPM)
  RECEPTOR   *   I    J    K    L
 ------------*--------------------
 1. R_NE-3m  *  0.0  0.0  0.0  0.3
 2. R_SE-3m  *  0.0  0.0  0.0  0.0
 3. R_SW-3m  *  0.0  0.0  0.0  0.3
 4. R_NW-3m  *  0.1  0.3  0.1  0.0
 5. R_NE-7m  *  0.0  0.0  0.0  0.3
 6. R_SE-7m  *  0.0  0.0  0.0  0.0
 7. R_SW-7m  *  0.0  0.0  0.0  0.3
 8. R_NW-7m  *  0.1  0.2  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative + Project, intersection 14F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S              Z0= 400. CM             ALT=     7. (M)
       BRG= WORST CASE             VD=  0.0 CM/S
      CLAS=     7 (G)              VS=  0.0 CM/S
      MIXH= 1000. M               AMB=  0.0 PPM
     SIGTH=    5. DEGREES        TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. E->0         *   150     4     0     4 *  AG    390   3.7    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    380   3.7    0.0  10.0
C. 0->W         *     0     4  -150     4 *  AG    890   3.7    0.0  10.0
D. W->0         *  -150    -5     0    -5 *  AG   1055   3.7    0.0  13.0
E. W->N         *  -150    -4     0     0 *  AG    365   3.7    0.0  10.0
F. 0->E         *     0    -5   150    -4 *  AG    800   3.7    0.0  10.0
G. S->0         *     5  -150     5     0 *  AG   1035   3.7    0.0  13.0
H. S->W         *     4  -150     0     0 *  AG    270   3.7    0.0  10.0
I. 0->N         *     5     0     5   150 *  AG   1170   3.7    0.0  10.0
J. N->0         *    -5   150    -5     0 *  AG    920   3.7    0.0  13.0
K. N->E         *    -4   150     0     0 *  AG     40   3.7    0.0  10.0
L. 0->S         *    -5     0    -5  -150 *  AG   1595   3.7    0.0  13.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. R_NE-3m  *      11      9   1.8
2. R_SE-3m  *      11    -11   1.8
3. R_SW-3m  *     -11    -11   1.8
4. R_NW-3m  *     -11      9   1.8
5. R_NE-7m  *      14     12   1.8
```

```
  6. R_SE-7m  *     14    -14   1.8
  7. R_SW-7m  *    -14    -14   1.8
  8. R_NW-7m  *    -14     12   1.8


          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Cumulative + Project, intersection 14F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                 CONC/LINK
              *  BRG  * CONC  *                   (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*---------------------------------------
  1. R_NE-3m  *  189. *   1.5 *  0.1  0.1  0.0  0.0  0.0  0.1  0.5  0.1
  2. R_SE-3m  *  277. *   1.6 *  0.0  0.0  0.2  0.6  0.2  0.1  0.2  0.1
  3. R_SW-3m  *   83. *   1.6 *  0.1  0.1  0.0  0.2  0.0  0.5  0.2  0.1
  4. R_NW-3m  *  173. *   1.9 *  0.0  0.0  0.2  0.2  0.1  0.0  0.2  0.1
  5. R_NE-7m  *  260. *   1.2 *  0.0  0.0  0.4  0.3  0.1  0.0  0.0  0.0
  6. R_SE-7m  *  279. *   1.4 *  0.0  0.0  0.2  0.5  0.1  0.0  0.2  0.0
  7. R_SW-7m  *   79. *   1.3 *  0.1  0.1  0.0  0.1  0.0  0.4  0.2  0.0
  8. R_NW-7m  *  170. *   1.5 *  0.0  0.0  0.2  0.2  0.1  0.0  0.2  0.1



              *      CONC/LINK
              *        (PPM)
   RECEPTOR   *   I    J    K    L
  ------------*--------------------
  1. R_NE-3m  *  0.1  0.0  0.0  0.4
  2. R_SE-3m  *  0.0  0.0  0.0  0.2
  3. R_SW-3m  *  0.0  0.0  0.0  0.4
  4. R_NW-3m  *  0.0  0.1  0.0  0.9
  5. R_NE-7m  *  0.3  0.1  0.0  0.0
  6. R_SE-7m  *  0.0  0.0  0.0  0.2
  7. R_SW-7m  *  0.0  0.0  0.0  0.4
  8. R_NW-7m  *  0.0  0.0  0.0  0.7
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative plus Project, intersection 15
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   100     5     0     5 *  AG   1215   3.7    0.0  13.0
B. E->S         *   150     4     0     0 *  AG    185   3.7    0.0  10.0
C. 0->W         *     0     5  -150     5 *  AG   1635   3.7    0.0  13.0
D. W->0         *  -150    -5     0    -5 *  AG   1325   3.7    0.0  13.0
E. 0->E         *     0    -5   150    -5 *  AG   1085   3.7    0.0  13.0
F. 0->S         *     4     0     4   -25 *  AG    445   3.7    0.0  10.0
G. S->E         *     4   -25     4     0 *  AG    420   3.7    0.0  10.0
H. S->W         *     4   -25     0     0 *  AG     20   3.7    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     11   1.8
2. R_SE-3m  *      7    -11   1.8
3. R_SW-3m  *     -6    -11   1.8
4. R_NW-3m  *     -6     11   1.8
5. R_NE-7m  *     10     14   1.8
6. R_SE-7m  *     10    -14   1.8
7. R_SW-7m  *     -8    -14   1.8
8. R_NW-7m  *     -8     14   1.8
```

```
↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative plus Project, intersection 15
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  264. *   1.4 *  0.2  0.0  1.0  0.2  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  277. *   1.5 *  0.0  0.0  0.3  0.8  0.1  0.1  0.1  0.0
 3. R_SW-3m  *   81. *   1.2 *  0.2  0.1  0.0  0.1  0.6  0.1  0.1  0.0
 4. R_NW-3m  *  263. *   1.4 *  0.0  0.0  1.2  0.3  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  260. *   1.1 *  0.0  0.0  0.7  0.3  0.0  0.0  0.0  0.0
 6. R_SE-7m  *  281. *   1.2 *  0.0  0.0  0.4  0.6  0.0  0.1  0.1  0.0
 7. R_SW-7m  *   76. *   1.0 *  0.3  0.1  0.0  0.0  0.5  0.1  0.1  0.0
 8. R_NW-7m  *  259. *   1.1 *  0.0  0.0  0.8  0.3  0.0  0.0  0.0  0.0


↑
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative + Project, intersection 16F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. E->0         *   150     4     0     4 *  AG    940   3.7    0.0  13.0
B. E->N         *   150     5     0     5 *  AG    445   3.7    0.0  10.0
C. 0->W         *     0     4  -150     4 *  AG   1015   3.7    0.0  13.0
D. W->0         *  -150   -11     0   -11 *  AG   1090   3.7    0.0  13.0
E. W->N         *  -150    -9     0     0 *  AG    985   3.7    0.0  10.0
F. 0->E         *     0   -11   150   -11 *  AG   1365   3.7    0.0  10.0
G. S->0         *     0  -150     0     0 *  AG   3865   3.7    0.0  16.5
H. S->E         *     5  -150     5     0 *  AG    275   3.7    0.0  10.0
I. 0->N         *     0     0     0   150 *  AG   5220   3.7    0.0  16.5


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      7     13   1.8
2. R_SE-3m  *     11    -16   1.8
3. R_SW-3m  *     -7    -16   1.8
4. R_NW-3m  *     -7      9   1.8
5. R_NE-7m  *     10     15   1.8
6. R_SE-7m  *     14    -19   1.8
7. R_SW-7m  *    -10    -19   1.8
8. R_NW-7m  *    -10     12   1.8
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative + Project, intersection 16F
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. R_NE-3m  *  184. *   3.2 *  0.2  0.1  0.0  0.0  0.0  0.2  1.7  0.2
 2. R_SE-3m  *  351. *   2.4 *  0.1  0.1  0.0  0.0  0.0  0.4  0.1  0.1
 3. R_SW-3m  *    5. *   3.3 *  0.0  0.0  0.1  0.3  0.2  0.0  0.8  0.0
 4. R_NW-3m  *  175. *   3.1 *  0.0  0.0  0.2  0.2  0.2  0.0  1.8  0.1
 5. R_NE-7m  *  189. *   2.2 *  0.2  0.1  0.0  0.0  0.0  0.2  1.4  0.1
 6. R_SE-7m  *  350. *   1.9 *  0.1  0.1  0.0  0.0  0.0  0.3  0.0  0.0
 7. R_SW-7m  *    9. *   2.5 *  0.0  0.0  0.1  0.2  0.1  0.0  0.3  0.0
 8. R_NW-7m  *  170. *   2.2 *  0.0  0.0  0.2  0.1  0.2  0.0  1.4  0.1



             *CONC/LINK
             * (PPM)
  RECEPTOR   *   I
 ------------*-----
 1. R_NE-3m  *  0.8
 2. R_SE-3m  *  1.7
 3. R_SW-3m  *  2.0
 4. R_NW-3m  *  0.6
 5. R_NE-7m  *  0.3
 6. R_SE-7m  *  1.4
 7. R_SW-7m  *  1.7
 8. R_NW-7m  *  0.1
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Cumulative + Project, intersection 17F
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT:


  I.  SITE VARIABLES

         U=   0.5 M/S             Z0= 400. CM            ALT=     7. (M)
       BRG= WORST CASE            VD=  0.0 CM/S
      CLAS=     7 (G)             VS=  0.0 CM/S
      MIXH= 1000. M              AMB=  0.0 PPM
     SIGTH=    5. DEGREES       TEMP= 16.1 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. N->0         *      0   150     0     0 *  AG   3685   3.7    0.0  16.5
B. N->W         *     -4   150    -4     0 *  AG    450   3.7    0.0  10.0
C. N->E         *      4   150     4     0 *  AG    810   3.7    0.0  10.0
D. 0->S         *      0     0     0  -150 *  AG   3780   3.7    0.0  16.5
E. E->0         *    150     4     0     4 *  AG     70   3.7    0.0  10.0
F. E->S         *    150     4     0     0 *  AG     80   3.7    0.0  10.0
G. 0->W         *      0     4  -150     4 *  AG    880   3.7    0.0  10.0
H. W->0         *   -150    -2     0     0 *  AG    405   3.7    0.0  10.0
I. 0->E         *   -150    -6     0     0 *  AG    840   3.7    0.0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. R_NE-3m  *      9      7   1.8
2. R_SE-3m  *      9     -7   1.8
3. R_SW-3m  *     -9     -7   1.8
4. R_NW-3m  *     -9      7   1.8
5. R_NE-7m  *     12     10   1.8
6. R_SE-7m  *     12    -10   1.8
7. R_SW-7m  *    -12    -10   1.8
8. R_NW-7m  *    -12     10   1.8
```

```
↑

           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: Cumulative + Project, intersection 17F
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT:


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-------------------------------------------
 1. R_NE-3m  *  352. *   2.5 *  1.8  0.2  0.6  0.0  0.0  0.0  0.0  0.0
 2. R_SE-3m  *  353. *   2.5 *  1.7  0.2  0.5  0.1  0.0  0.0  0.0  0.0
 3. R_SW-3m  *    8. *   2.8 *  1.6  0.3  0.3  0.1  0.0  0.0  0.2  0.1
 4. R_NW-3m  *    8. *   2.4 *  1.8  0.3  0.2  0.0  0.0  0.0  0.0  0.0
 5. R_NE-7m  *  261. *   1.9 *  0.7  0.1  0.2  0.0  0.0  0.0  0.5  0.2
 6. R_SE-7m  *  350. *   1.7 *  1.2  0.1  0.4  0.0  0.0  0.0  0.0  0.0
 7. R_SW-7m  *   10. *   2.0 *  1.2  0.2  0.2  0.0  0.0  0.0  0.1  0.1
 8. R_NW-7m  *  170. *   1.7 *  0.0  0.0  0.0  1.2  0.0  0.0  0.2  0.1



             *CONC/LINK
             * (PPM)
  RECEPTOR   *   I
 ------------*-----
 1. R_NE-3m  *  0.0
 2. R_SE-3m  *  0.0
 3. R_SW-3m  *  0.2
 4. R_NW-3m  *  0.0
 5. R_NE-7m  *  0.3
 6. R_SE-7m  *  0.0
 7. R_SW-7m  *  0.2
 8. R_NW-7m  *  0.2


↑
```

	1-hour (ppm)	8-hour (ppm)
ambient background	1.539	1.1

Background = second highest of last two years (2017-2018) per SMAQMD CARBON MONOXIDE DISPERSION MODELING GUIDANCE, Sacramento Metropolitan Air Quality Management District. CEQA Guide December 2009, Revised June 2014

Results + Background

		CO Concentrations	
		1-hour (ppm)	8-hour (ppm)
2	I-5 NB Ramps/Richards Boulevard	2.94	2.08
4	N 3rd Street/Richards Boulevard	3.34	2.36
5	Sequoia Pacific Boulevard/Richards Boulevard	3.24	2.29
6	N 5th Street/Richards Boulevard	3.14	2.22
7	N 7th Street/Richards Boulevard	3.24	2.29
8	N 10th Street/Richards Boulevard	3.14	2.22
10	N 12th St-N 16th St/Richard Boulevard	4.24	2.99
11	N 7th Street/Project Driveway	2.84	2.01
12	N 7th Street/N B Street	3.94	2.78
14	N 7th Street/Railyards Boulevard	3.34	2.36
15	North Project Driveway/Richards Boulevard	3.14	2.22

CALINE4 Output

at R=3m from intersection corners				at R=7m from intersection corners			
R_{NE}	R_{SE}	R_{SW}	R_{NW}	R_{NE}	R_{SE}	R_{SW}	R_{NW}
1.4	1.2	1.4	1.3	1.3	1.1	1.3	1.1
1.8	1.3	1.2	1.8	1.3	1	1	1.2
1.7	1.3	1.3	1.7	1.2	1	1	1.2
1.6	1.2	1.2	1.6	1.2	1	1	1.1
1.3	1.5	1.7	1.5	1.1	1.2	1.4	1.2
1.5	1.4	1.6	1.4	1.4	1.1	1.6	1
2.7	2.4	1.9	1.8	2.4	2.1	1.7	1.8
0.8	0.9	1.1	1.3	0.7	0.6	0.8	1
2.1	2	2.4	2.1	1.6	1.4	1.6	1.7
1.3	1.2	1.8	1.7	0.9	1	1.1	1.4
1.5	1.6	1.3	1.5	1.1	1.3	1	1.1

	1-hour (ppm)	8-hour (ppm)
ambient background	1.539	1.1

Background = second highest of last two years (2017-2018) per SMAQMD CARBON MONOXIDE DISPERSION MODELING GUIDANCE, Sacramento Metropolitan Air Quality Management District. CEQA Guide December 2009, Revised June 2014

Results + Background

		CO Concentrations	
Intersection		1-hour (ppm)	8-hour (ppm)
1	I-5 SB Ramps/Richards Boulevard	3.24	2.29
2	I-5 NB Ramps/Richards Boulevard	3.44	2.43
4	N 3rd Street/Richards Boulevard	3.34	2.36
5	Sequoia Pacific Boulevard/Richards Boulevard	3.14	2.22
6	N 5th Street/Richards Boulevard	3.04	2.15
7	N 7th Street/Richards Boulevard	3.24	2.29
8	N 10th Street/Richards Boulevard	3.34	2.36
9	Dos Rios Street/Richards Boulevard	3.54	2.50
12	N 7th Street/N B Street	3.54	2.50
14	N 7th Street/Railyards Boulevard	3.44	2.43
16	N 16th Street/Richards Boulevard	4.84	3.41
17	N 12th St/Vine St	4.34	3.06

CALINE4 Output

at R=3m from intersection corners				at R=7m from intersection corners			
R_{NE}	R_{SE}	R_{SW}	R_{NW}	R_{NE}	R_{SE}	R_{SW}	R_{NW}
1.7	1.4	1.5	1.3	1.5	1.1	1.4	1
1.8	1.6	1.9	1.8	1.6	1.5	1.7	1.6
1.8	1.4	1.3	1.7	1.3	1.1	1	1.2
1.6	1.4	1.6	1.6	1.3	1.1	1.4	1.3
1.5	1.4	1.4	1.5	1.2	1.1	1.2	1.1
1.4	1.5	1.7	1.5	1.1	1.2	1.4	1.2
1.7	1.5	1.6	1.8	1.6	1	1.6	1.2
1.9	1.8	2	1.9	1.9	1.2	1.9	1.3
1.6	1.6	2	1.7	1.4	1.4	1.7	1.5
1.5	1.6	1.6	1.9	1.2	1.4	1.3	1.5
3.2	2.4	3.3	3.1	2.2	1.9	2.5	2.2
2.5	2.5	2.8	2.4	1.9	1.7	2	1.7

```
 Start date and time  01/04/19 11:24:05
                               AERSCREEN 16216


                 DGS_RICHARDS_OFFROAD




           ----------------  DATA ENTRY VALIDATION  ----------------
                           METRIC               ENGLISH
  ** AREADATA **  ---------------     ----------------


  Emission Rate:    0.705E-02 g/s         0.560E-01 lb/hr

  Area Height:           3.89 meters          12.76 feet

  Area Source Length:  379.00 meters        1243.44 feet

  Area Source Width:   197.00 meters         646.33 feet

  Vertical Dimension:    1.40 meters           4.59 feet

  Model Mode:           URBAN

  Population:          501901

  Dist to Ambient Air:           1.0 meters             3. feet




  ** BUILDING DATA **


  No Building Downwash Parameters
```

```
** TERRAIN DATA **


No Terrain Elevations

Source Base Elevation:   0.0 meters        0.0  feet


Probe distance:   5000. meters       16404. feet

Flagpole Receptor Height:      1.5 meters             5. feet


No discrete receptors used




** FUMIGATION DATA **


No fumigation requested




** METEOROLOGY DATA **


Min/Max Temperature:  277.0 / 304.0 K   38.9 /  87.5 Deg F


Minimum Wind Speed:     0.5 m/s
```

```
 Anemometer Height:   10.000 meters



 Dominant Surface Profile: Urban

 Dominant Climate Type:    Average Moisture



 Surface friction velocity (u*): not adjusted



DEBUG OPTION OFF







 AERSCREEN output file:

 DGS_RICHARDS_OFFROAD.OUT





 *** AERSCREEN Run is Ready to Begin






 No terrain used, AERMAP will not be run

**************************************************



SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...
```

```
Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season            Albedo     Bo       zo

Winter              0.35     1.50     1.000

Spring              0.14     1.00     1.000

Summer              0.16     2.00     1.000

Autumn              0.18     2.00     1.000


Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl


Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl


Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl


Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl


Buildings and/or terrain present or rectangular area source, skipping probe


FLOWSECTOR   started 01/04/19 11:24:51
 ********************************************


  Running AERMOD

 Processing Winter
```

```
Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10


    ********   WARNING MESSAGES   ********
```

```
               ***  NONE  ***


 ****************************************************

 Processing wind flow sector   4


  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15


     ********   WARNING MESSAGES   ********

               ***  NONE  ***


 ****************************************************

 Processing wind flow sector   5


  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20


     ********   WARNING MESSAGES   ********

               ***  NONE  ***


 ****************************************************

 Processing wind flow sector   6


  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25


     ********   WARNING MESSAGES   ********
```

```
               ***  NONE  ***


 ****************************************************

 Processing wind flow sector   7


  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30


     ********   WARNING MESSAGES   ********

                ***  NONE  ***

  ********************************************


   Running AERMOD

  Processing Spring


 Processing surface roughness sector  1


 ****************************************************

 Processing wind flow sector   1


  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0


     ********   WARNING MESSAGES   ********

                ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ********************************************
```

```
  Running AERMOD

 Processing Summer


Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


****************************************************

Processing wind flow sector   6
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


****************************************************
Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30


    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 *******************************************


  Running AERMOD
 Processing Autumn


Processing surface roughness sector  1


****************************************************
Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***


************************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


************************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


************************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***


*****************************************************
Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


*****************************************************
Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


*****************************************************
Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


FLOWSECTOR   ended 01/04/19 11:25:19


REFINE       started 01/04/19 11:25:19


 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


REFINE       ended 01/04/19 11:25:22


 **********************************************

 AERSCREEN Finished Successfully

 With no errors or warnings

 Check log file for details

 ***********************************************


 Ending date and time  01/04/19 11:25:23
```

```
                    DGS_Richards_Unmitigated_max_conc_distance
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector       Date
 H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.29303E+01         1.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.30824E+01        25.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.32232E+01        50.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.33498E+01        75.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.34642E+01       100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.35676E+01       125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.36648E+01       150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37525E+01       175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38080E+01       200.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
*  0.38109E+01       201.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.31970E+01       225.00      0.00  25.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24814E+01       250.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21214E+01       275.01      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18716E+01       300.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16955E+01       325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.15467E+01       350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14183E+01       375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13076E+01       400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12114E+01       425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11255E+01       450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10502E+01       475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98320E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.92336E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.86908E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82048E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77594E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73586E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69942E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.66537E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.63424E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.60575E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.57942E+00       750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.55476E+00       775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.53199E+00       800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.51091E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.49130E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47289E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45538E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43902E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42370E+00       950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40933E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39583E+00      1000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38312E+00      1025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37115E+00      1050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.35975E+00      1075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.34886E+00      1100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.33856E+00      1125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.32872E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.31938E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.31050E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.30206E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.29403E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.28637E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.27908E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.27211E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.26545E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.25900E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.25283E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24693E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24127E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23585E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23065E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.22566E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.22086E+00      1550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21626E+00      1575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21182E+00      1600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20753E+00      1625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20339E+00      1650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19942E+00      1675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19558E+00      1700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19189E+00      1725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18834E+00      1750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18491E+00      1775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18160E+00      1800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17839E+00      1825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17527E+00      1850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17226E+00      1875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16935E+00      1900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16654E+00      1925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.16383E+00      1950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16121E+00      1975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15867E+00      2000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15623E+00      2025.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15386E+00      2050.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15157E+00      2075.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14935E+00      2100.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14719E+00      2125.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14510E+00      2150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14308E+00      2175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14113E+00      2200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13923E+00      2225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13740E+00      2250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13562E+00      2275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13389E+00      2300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13222E+00      2325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.13060E+00      2350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12902E+00      2375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12749E+00      2400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12600E+00      2425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12456E+00      2450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12316E+00      2475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12178E+00      2500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12045E+00      2525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11916E+00      2550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11790E+00      2575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11667E+00      2600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11548E+00      2625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11432E+00      2650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11319E+00      2675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11209E+00      2700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11101E+00      2725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.10995E+00      2750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10893E+00      2775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10793E+00      2800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10696E+00      2825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10601E+00      2850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10509E+00      2875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10419E+00      2900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10330E+00      2925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10245E+00      2950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10161E+00      2975.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10080E+00      3000.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.99998E-01      3025.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.99218E-01      3050.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98455E-01      3075.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.97709E-01      3100.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.96980E-01      3125.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.96268E-01      3150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.95571E-01      3175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94889E-01      3200.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94222E-01      3225.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.93569E-01      3250.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.92929E-01      3275.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.92304E-01      3300.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.91693E-01      3325.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.91092E-01      3350.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.90502E-01      3375.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89924E-01      3400.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89358E-01      3425.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.88803E-01      3450.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.88259E-01      3475.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87725E-01      3500.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87201E-01      3525.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.86687E-01      3550.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.86183E-01      3575.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85687E-01      3600.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85981E-01      3625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85491E-01      3650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85010E-01      3675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84537E-01      3700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84071E-01      3725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83614E-01      3750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83164E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82721E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82286E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81857E-01      3850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81435E-01      3875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81020E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.80611E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.80208E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79811E-01      3975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79420E-01      4000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79034E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78655E-01      4050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78280E-01      4075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77911E-01      4100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77547E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77188E-01      4150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.76834E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.76485E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.76140E-01      4225.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.75800E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.75464E-01      4275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.75132E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.74805E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.74482E-01      4350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.74163E-01      4375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73847E-01      4400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73536E-01      4425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73228E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.72924E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.72623E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.72326E-01      4525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.72033E-01      4550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.71742E-01      4575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.71455E-01      4600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.71171E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.70891E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.70613E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.70338E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.70067E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.69798E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69532E-01      4775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69269E-01      4800.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69008E-01      4825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.68750E-01      4850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.68495E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.68242E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67992E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67744E-01      4950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67499E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67256E-01      5000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
                          DGS_Richards_Mitigated_MM-3.2-2b

Start date and time  01/04/19 16:59:41
                             AERSCREEN 16216


            DGS_RICHARDS_OFFROAD




         -----------------  DATA ENTRY VALIDATION  -----------------
                        METRIC              ENGLISH
 ** AREADATA **  ---------------     ----------------


 Emission Rate:    0.388E-02 g/s         0.308E-01 lb/hr
 Area Height:           3.89 meters          12.76 feet
 Area Source Length:  379.00 meters        1243.44 feet
 Area Source Width:   197.00 meters         646.33 feet
 Vertical Dimension:    1.40 meters           4.59 feet
 Model Mode:           URBAN
 Population:          501901
 Dist to Ambient Air:           1.0 meters             3. feet



 ** BUILDING DATA **


 No Building Downwash Parameters
```

```
** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation:   0.0 meters        0.0  feet

Probe distance:   5000. meters       16404. feet

Flagpole Receptor Height:      1.5 meters             5. feet

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature:  277.0 / 304.0 K   38.9 /  87.5 Deg F

Minimum Wind Speed:     0.5 m/s
```

```
 Anemometer Height:   10.000 meters


 Dominant Surface Profile: Urban

 Dominant Climate Type:    Average Moisture


 Surface friction velocity (u*): not adjusted


DEBUG OPTION OFF





 AERSCREEN output file:

 DGS_RICHARDS_OFFROAD.OUT




 *** AERSCREEN Run is Ready to Begin





 No terrain used, AERMAP will not be run

**************************************************


SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...
```

```
Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season            Albedo     Bo       zo

Winter              0.35     1.50     1.000

Spring              0.14     1.00     1.000

Summer              0.16     2.00     1.000

Autumn              0.18     2.00     1.000


Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl


Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl


Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl


Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl


Buildings and/or terrain present or rectangular area source, skipping probe


FLOWSECTOR   started 01/04/19 17:00:16

 ********************************************


  Running AERMOD

 Processing Winter
```

```
Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10


    ********   WARNING MESSAGES   ********
```

```
              ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15


    ********   WARNING MESSAGES   ********

              ***  NONE  ***


*****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20


    ********   WARNING MESSAGES   ********

              ***  NONE  ***


*****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25


    ********   WARNING MESSAGES   ********
```

```
               ***  NONE  ***


*****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ********************************************


  Running AERMOD

 Processing Spring


Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20


    ********   WARNING MESSAGES   ********

              ***  NONE  ***


****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


    ********   WARNING MESSAGES   ********

              ***  NONE  ***


****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


    ********   WARNING MESSAGES   ********

              ***  NONE  ***

 *******************************************
```

```
  Running AERMOD

 Processing Summer


Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   6
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


****************************************************
Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30


    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 *******************************************


  Running AERMOD
 Processing Autumn


Processing surface roughness sector  1


****************************************************
Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


**************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


FLOWSECTOR   ended 01/04/19 17:00:43


REFINE       started 01/04/19 17:00:43


 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


REFINE       ended 01/04/19 17:00:46


 **********************************************

 AERSCREEN Finished Successfully

 With no errors or warnings

 Check log file for details

 ***********************************************


 Ending date and time  01/04/19 17:00:46
```

```
                DGS_Richards_Mitigated_MM-3.2-2b_max_conc_distance
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector      Date
 H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.16129E+01          1.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16966E+01         25.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17741E+01         50.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18438E+01         75.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19068E+01        100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19637E+01        125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20171E+01        150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20654E+01        175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20960E+01        200.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
*  0.20975E+01        201.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17596E+01        225.00      0.00  25.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13658E+01        250.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11676E+01        275.01      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10302E+01        300.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.93324E+00        325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.85133E+00       350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78066E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.71970E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.66677E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.61950E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.57803E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.54117E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.50823E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47835E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45160E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42709E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40503E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38497E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.36623E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.34909E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.33341E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.31892E+00       750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.30535E+00       775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.29282E+00       800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.28121E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.27042E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.26028E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.25065E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24164E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23321E+00       950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.22530E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21787E+00      1000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21088E+00      1025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20428E+00      1050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19801E+00      1075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19202E+00      1100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18635E+00      1125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.18093E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17579E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17090E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16626E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16184E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15762E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15361E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14977E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14611E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14256E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13916E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13591E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13280E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12981E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12695E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12420E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.12157E+00      1550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11903E+00      1575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11659E+00      1600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11423E+00      1625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11195E+00      1650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10976E+00      1675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10765E+00      1700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10562E+00      1725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10366E+00      1750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10178E+00      1775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.99955E-01      1800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98188E-01      1825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.96471E-01      1850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94814E-01      1875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.93214E-01      1900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.91668E-01      1925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.90174E-01      1950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.88731E-01      1975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87335E-01      2000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85992E-01      2025.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84689E-01      2050.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83426E-01      2075.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82202E-01      2100.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81015E-01      2125.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79866E-01      2150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78754E-01      2175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77678E-01      2200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.76636E-01      2225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.75626E-01      2250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.74647E-01      2275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73697E-01      2300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.72775E-01      2325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.71882E-01      2350.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.71014E-01      2375.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.70172E-01      2400.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69355E-01      2425.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.68561E-01      2450.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67786E-01      2475.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.67032E-01      2500.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.66298E-01      2525.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.65585E-01      2550.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.64892E-01      2575.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.64218E-01      2600.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.63562E-01      2625.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.62924E-01      2650.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.62303E-01      2675.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.61694E-01      2700.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.61099E-01      2725.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.60521E-01      2750.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.59957E-01      2775.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.59408E-01      2800.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.58872E-01      2825.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.58350E-01      2850.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.57841E-01      2875.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.57345E-01      2900.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.56860E-01      2925.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.56388E-01      2950.00      0.00   0.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.55927E-01      2975.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.55479E-01      3000.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.55040E-01      3025.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.54611E-01      3050.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.54191E-01      3075.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.53780E-01      3100.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.53379E-01      3125.00      0.00   5.0         Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.52987E-01      3150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.52603E-01      3175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.52228E-01      3200.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.51861E-01      3225.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.51501E-01      3250.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.51149E-01      3275.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.50805E-01      3300.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.50469E-01      3325.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.50138E-01      3350.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.49813E-01      3375.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.49495E-01      3400.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.49184E-01      3425.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.48878E-01      3450.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.48579E-01      3475.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.48285E-01      3500.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47997E-01      3525.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.47714E-01      3550.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47436E-01      3575.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47163E-01      3600.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47325E-01      3625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47056E-01      3650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.46790E-01      3675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.46530E-01      3700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.46274E-01      3725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.46022E-01      3750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45775E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45531E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45291E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45055E-01      3850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.44823E-01      3875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.44594E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.44369E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.44147E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43929E-01      3975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43714E-01      4000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43502E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43293E-01      4050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43086E-01      4075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42883E-01      4100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42683E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42485E-01      4150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42291E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42098E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41908E-01      4225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41721E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41536E-01      4275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41354E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41174E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.40996E-01      4350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40820E-01      4375.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40647E-01      4400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40475E-01      4425.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40306E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40138E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39973E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39809E-01      4525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39648E-01      4550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39488E-01      4575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39330E-01      4600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39174E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39019E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38866E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38715E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38566E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.38418E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38271E-01      4775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38126E-01      4800.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37983E-01      4825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37841E-01      4850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37701E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37561E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37424E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37287E-01      4950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37152E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37019E-01      5000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
                                 DGS_Richards_Mitigated Tier 4

 Start date and time  01/04/19 10:35:48
                                  AERSCREEN 16216


            DGS_RICHARDS_OFFROAD



         -----------------  DATA ENTRY VALIDATION  -----------------
                         METRIC              ENGLISH
  ** AREADATA **  ---------------     ----------------


  Emission Rate:    0.814E-03 g/s         0.646E-02 lb/hr

  Area Height:           3.89 meters          12.76 feet

  Area Source Length:  379.00 meters        1243.44 feet

  Area Source Width:   197.00 meters         646.33 feet

  Vertical Dimension:    1.40 meters           4.59 feet

  Model Mode:           URBAN

  Population:          501901

  Dist to Ambient Air:           1.0 meters             3. feet



  ** BUILDING DATA **


  No Building Downwash Parameters
```

```
** TERRAIN DATA **


No Terrain Elevations

Source Base Elevation:   0.0 meters        0.0  feet


Probe distance:   5000. meters       16404. feet

Flagpole Receptor Height:      1.5 meters             5. feet


No discrete receptors used




** FUMIGATION DATA **


No fumigation requested




** METEOROLOGY DATA **


Min/Max Temperature:  277.0 / 304.0 K   38.9 /  87.5 Deg F


Minimum Wind Speed:     0.5 m/s
```

```
 Anemometer Height:   10.000 meters


 Dominant Surface Profile: Urban

 Dominant Climate Type:    Average Moisture


 Surface friction velocity (u*): not adjusted


DEBUG OPTION OFF




 AERSCREEN output file:

 DGS_RICHARDS_MITIGATED.OUT



 *** AERSCREEN Run is Ready to Begin




 No terrain used, AERMAP will not be run
**************************************************


SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...
```

```
Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season             Albedo     Bo       zo

Winter              0.35     1.50     1.000

Spring              0.14     1.00     1.000

Summer              0.16     2.00     1.000

Autumn              0.18     2.00     1.000


Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl


Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl


Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl


Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl


Buildings and/or terrain present or rectangular area source, skipping probe


FLOWSECTOR   started 01/04/19 10:36:25
 ********************************************


  Running AERMOD
 Processing Winter
```

```
Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10


    ********   WARNING MESSAGES   ********
```

```
              ***  NONE  ***



 ****************************************************

 Processing wind flow sector   4



  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15



     ********   WARNING MESSAGES   ********

               ***  NONE  ***



 ****************************************************

 Processing wind flow sector   5



  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20



     ********   WARNING MESSAGES   ********

               ***  NONE  ***



 ****************************************************

 Processing wind flow sector   6



  AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25



     ********   WARNING MESSAGES   ********
```

```
             ***  NONE  ***


**************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30


    ********   WARNING MESSAGES   ********

             ***  NONE  ***

 ******************************************


  Running AERMOD

 Processing Spring


Processing surface roughness sector  1


**************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0


    ********   WARNING MESSAGES   ********

             ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ********************************************
```

```
  Running AERMOD

 Processing Summer


Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


***************************************************
Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


***************************************************
Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


***************************************************
Processing wind flow sector   6
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


*****************************************************
Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30


    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ********************************************


  Running AERMOD
 Processing Autumn


Processing surface roughness sector  1


*****************************************************
Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15
```

```
    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   5


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   6


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   7


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***


FLOWSECTOR   ended 01/04/19 10:36:53


REFINE       started 01/04/19 10:36:53


 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


REFINE       ended 01/04/19 10:36:56


 **********************************************
 AERSCREEN Finished Successfully
 With no errors or warnings
 Check log file for details
 ***********************************************


 Ending date and time  01/04/19 10:36:56
```

```
                   DGS_Richards_Mitigated_Tier4_max_conc_distance
 Concentration     Distance Elevation  Diag  Season/Month   Zo sector       Date
 H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT
REF TA     HT
   0.33828E+00         1.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.35583E+00        25.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.37209E+00        50.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.38670E+00        75.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39992E+00       100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41185E+00       125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42307E+00       150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43320E+00       175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.43961E+00       200.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
*  0.43993E+00       201.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.36906E+00       225.00      0.00  25.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.28645E+00       250.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24490E+00       275.01      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21606E+00       300.00      0.00  20.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19573E+00       325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.17855E+00       350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16373E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15095E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13985E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12993E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12123E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11350E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10659E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10033E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94718E-01       575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89576E-01       600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84949E-01       625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.80742E-01       650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.76811E-01       675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.73217E-01       700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.69929E-01       725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.66889E-01       750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.64043E-01       775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.61414E-01       800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.58981E-01       825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.56717E-01       850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.54591E-01       875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.52570E-01       900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.50681E-01       925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.48912E-01       950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.47254E-01       975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.45695E-01      1000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.44228E-01      1025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.42846E-01      1050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.41530E-01      1075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.40273E-01      1100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.39084E-01      1125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.37948E-01      1150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.36869E-01      1175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.35845E-01      1200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.34870E-01      1225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.33943E-01      1250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.33060E-01      1275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.32217E-01      1300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.31413E-01      1325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.30644E-01      1350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.29900E-01      1375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.29187E-01      1400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.28506E-01      1425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.27853E-01      1450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.27227E-01      1475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.26626E-01      1500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.26050E-01      1525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.25497E-01      1550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24965E-01      1575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.24453E-01      1600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23958E-01      1625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23480E-01      1650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.23021E-01      1675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.22579E-01      1700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.22153E-01      1725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21742E-01      1750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.21346E-01      1775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20964E-01      1800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20594E-01      1825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.20234E-01      1850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19886E-01      1875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19550E-01      1900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.19226E-01      1925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.18913E-01      1950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18610E-01      1975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18317E-01      2000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.18036E-01      2025.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17762E-01      2050.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17498E-01      2075.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.17241E-01      2100.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16992E-01      2125.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16751E-01      2150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16518E-01      2175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16292E-01      2200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.16073E-01      2225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15862E-01      2250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15656E-01      2275.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15457E-01      2300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.15264E-01      2325.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.15076E-01      2350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14894E-01      2375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14718E-01      2400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14546E-01      2425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14380E-01      2450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14217E-01      2475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.14059E-01      2500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13905E-01      2525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13756E-01      2550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13610E-01      2575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13469E-01      2600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13331E-01      2625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13197E-01      2650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.13067E-01      2675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12939E-01      2700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12815E-01      2725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.12693E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12575E-01      2775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12460E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12348E-01      2825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12238E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12131E-01      2875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.12027E-01      2900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11926E-01      2925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11827E-01      2950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11730E-01      2975.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11636E-01      3000.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11544E-01      3025.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11454E-01      3050.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11366E-01      3075.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11280E-01      3100.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11196E-01      3125.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.11113E-01      3150.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.11033E-01      3175.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10954E-01      3200.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10877E-01      3225.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10802E-01      3250.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10728E-01      3275.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10656E-01      3300.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10585E-01      3325.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10516E-01      3350.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10448E-01      3375.00      0.00  10.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10381E-01      3400.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10316E-01      3425.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10252E-01      3450.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10189E-01      3475.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10127E-01      3500.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.10067E-01      3525.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.10007E-01      3550.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.99491E-02      3575.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98919E-02      3600.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.99258E-02      3625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98692E-02      3650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.98137E-02      3675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.97590E-02      3700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.97053E-02      3725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.96525E-02      3750.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.96006E-02      3775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.95495E-02      3800.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94992E-02      3825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94497E-02      3850.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.94010E-02      3875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.93531E-02      3900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.93058E-02      3925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.92593E-02      3950.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.92135E-02      3975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.91684E-02      4000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.91239E-02      4025.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.90800E-02      4050.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.90368E-02      4075.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89942E-02      4100.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89522E-02      4125.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.89107E-02      4150.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.88699E-02      4175.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.88295E-02      4200.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87897E-02      4225.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87504E-02      4250.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.87117E-02      4275.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.86734E-02      4300.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.86356E-02      4325.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.85983E-02      4350.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85615E-02      4375.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.85251E-02      4400.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84891E-02      4425.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84536E-02      4450.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.84185E-02      4475.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83838E-02      4500.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83495E-02      4525.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.83156E-02      4550.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82821E-02      4575.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82489E-02      4600.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.82162E-02      4625.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81837E-02      4650.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81517E-02      4675.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.81200E-02      4700.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.80886E-02      4725.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
   0.80576E-02      4750.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.80269E-02      4775.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79965E-02      4800.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79664E-02      4825.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79366E-02      4850.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.79072E-02      4875.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78780E-02      4900.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78491E-02      4925.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.78205E-02      4950.00      0.00   5.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77922E-02      4975.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
   0.77641E-02      5000.00      0.00   0.0        Winter       0-360   10011001
-1.28  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
304.0    2.0
```

```
HARP2 - HRACalc (dated 17023) 1/4/2019 4:10:54 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
**********************************
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: Derived

**********************************
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 5

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

**********************************
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments.  The remaining
pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

**********************************
INHALATION

Daily breathing rate: LongTerm24HR
```

```
**Worker Adjustment Factors**
Worker adjustment factors enabled: NO

**Fraction at time at home**
3rd Trimester to 16 years: ON
16 years to 70 years: OFF

**********************************
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment.  Please see the input file for
details.
Tier2 - What was changed: ED or start age changed|DBRs changed|FAH changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS
Richards_HARP2_UnmitigatedCancerRisk.csv
HRA ran successfully
```

*HARP - HRACalc v17023 1/4/2019 4:10:54 PM - Cancer Risk - Input File: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS Richards_HARP2_UnmitigatedHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK	DERMAL_	MMILK_RI	WATER_RI	FISH_RISK	CROP_RIS	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_	EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
1			9901	DieselExhP	0.11255	4.22E-05	5YrCancer	*	4.22E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION		0.00E+00	0.00E+00	0.00E+00

```
HARP2 - HRACalc (dated 17023) 1/4/2019 5:08:07 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
**********************************
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: Derived

**********************************
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 5

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

**********************************
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments.  The remaining
pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

**********************************
INHALATION

Daily breathing rate: LongTerm24HR
```

```
**Worker Adjustment Factors**
Worker adjustment factors enabled: NO

**Fraction at time at home**
3rd Trimester to 16 years: ON
16 years to 70 years: OFF

**********************************
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment.  Please see the input file for
details.
Tier2 - What was changed: ED or start age changed|DBRs changed|FAH changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS
Richards_HARP2_Mitigation_MM-xxCancerRisk.csv
HRA ran successfully
```

*HARP - HRACalc v17023 1/4/2019 5:08:07 PM - Cancer Risk - Input File: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS Richards_HARP2_Mitigation_MM-xxHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK	DERMAL_	MMILK_RI	WATER_RI	FISH_RISK	CROP_RIS	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_	EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
1			9901	DieselExhP	0.062	2.32E-05	5YrCancer	*	2.32E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION		0.00E+00	0.00E+00	0.00E+00

DGS Richards_HARP2_MitigatedOutput

```
HARP2 - HRACalc (dated 17023) 1/4/2019 4:13:47 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
**********************************
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: HighEnd

**********************************
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 5

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

**********************************
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments.  The remaining
pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

**********************************
INHALATION

Daily breathing rate: LongTerm24HR
```

```
**Worker Adjustment Factors**
Worker adjustment factors enabled: NO

**Fraction at time at home**
3rd Trimester to 16 years: ON
16 years to 70 years: OFF

**********************************
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment.  Please see the input file for
details.
Tier2 - What was changed: ED or start age changed|DBRs changed|FAH changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS
Richards_HARP2_MitigatedCancerRisk.csv
HRA ran successfully
```

*HARP - HRACalc v17023 1/4/2019 4:13:47 PM - Cancer Risk - Input File: C:\Users\sda\Desktop\1_PROJECTS\EIRs\DGS Richards\HRA\DGS Richards_HARP2_MitigatedHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK	DERMAL_	MMILK_RI	WATER_RI	FISH_RISK	CROP_RIS	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_	EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
1			9901	DieselExhP	0.013	4.87E-06	5YrCancer	*	4.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00

Off-Road DPM Emissions per Phase (tons)

Year	Phase	Off-road		
		Unmitigated	Mitigation - MM-3.2-2(b)[1]	Mitigated - Tier 4 Engines[2]
2020	GeoTech	0.0538	0.02959	0.00205
2021	Excavated Foundations	0.0597	0.032835	0.00294
2021	Building Construction	0.3256	0.17908	0.034
2022	Building Construction	0.3319	0.182545	0.0402
2023	Building Construction	0.2915	0.160325	0.0402
2024	Building Construction	0.0286	0.01573	0.00448
2024	Paving	0.00492	0.002706	0.00039
2024	Architectural Coating	0.0003	0.000165	0.00005

Notes:

1. Mitigation consisted of the implementation of MM-xx, which require PM exhaust emission to be reduce by 45 percent.

2. Mitigation consists of all off-road construction equipment being equiped with Tier 4 Interim engines. Details can be found in the CalEEMod run.

Annual Off-Road DPM Emissions (tons)

Construction Year	Unmitaged	Mitigation - MM-3.2-2(b)	Mitigated - Tier 4 Engines
2020	5.38E-02	2.96E-02	2.05E-03
2021	3.85E-01	2.12E-01	3.69E-02
2022	3.32E-01	1.83E-01	4.02E-02
2023	2.92E-01	1.60E-01	4.02E-02
2024	3.38E-02	1.86E-02	4.92E-03
All Construction	1.10E+00	6.03E-01	1.24E-01

Time Values for Emission Rates

Total Calendar Days - 2020	281
Total Calendar Days - 2021	366
Total Calendar Days - 2022	365
Total Calendar Days - 2023	366
Total Calendar Days - 2024	83
Total Calendar Days - All construction	1461
Hours per day	24
Pounds to grams	454
Tons to Pounds	2000

Emission Rates - Scaling Factors (g/s)

Year	Unmitaged	Mitigation - MM-3.2-2(b)	Mitigated - Tier 4 Engines
2020	2.01E-03	1.11E-03	7.66E-05
2021	1.11E-02	6.08E-03	1.06E-03
2022	9.55E-03	5.25E-03	1.16E-03
2023	8.36E-03	4.60E-03	1.15E-03
2024	4.28E-03	2.35E-03	6.22E-04
Average	7.05E-03	3.88E-03	8.14E-04

DPM Concentrations (ug/m3)

Category	Unmitaged	Mitigation - MM-3.2-2(b)	Mitigated - Tier 4 Engines
Max Single-Hour Concentration	1.13E+00	6.20E-01	1.30E-01
Annualized Average Concentration	1.13E-01	6.20E-02	1.30E-02

Distance from center project site to nearest residence is 450 meters. Max single-hour concentrations were multiplied by 10 percent to get the annualized average concentration.

Summarize AERSCREEN Concentration Output

Distance (m)	Unmitigated Concentration (ug/m^3)	Mitigated Concentration - 3.2-2(b) (ug/m^3)	Mitigated Concentration - Tier 4 (ug/m^3)
1	2.93E+00	1.61E+00	3.38E-01
25	3.08E+00	1.70E+00	3.56E-01
50	3.22E+00	1.77E+00	3.72E-01
75	3.35E+00	1.84E+00	3.87E-01
100	3.46E+00	1.91E+00	4.00E-01
125	3.57E+00	1.96E+00	4.12E-01
150	3.66E+00	2.02E+00	4.23E-01
175	3.75E+00	2.07E+00	4.33E-01
200	3.81E+00	2.10E+00	4.40E-01
201	3.81E+00	2.10E+00	4.40E-01
225	3.20E+00	1.76E+00	3.69E-01
250	2.48E+00	1.37E+00	2.86E-01
275.01	2.12E+00	1.17E+00	2.45E-01
300	1.87E+00	1.03E+00	2.16E-01
325	1.70E+00	9.33E-01	1.96E-01
350	1.55E+00	8.51E-01	1.79E-01
375	1.42E+00	7.81E-01	1.64E-01
400	1.31E+00	7.20E-01	1.51E-01
425	1.21E+00	6.67E-01	1.40E-01
450	**1.13E+00**	**6.20E-01**	**1.30E-01**
475	1.05E+00	5.78E-01	1.21E-01
500	9.83E-01	5.41E-01	1.14E-01
525	9.23E-01	5.08E-01	1.07E-01
550	8.69E-01	4.78E-01	1.00E-01
575	8.20E-01	4.52E-01	9.47E-02
600	7.76E-01	4.27E-01	8.96E-02

Note: See AERSCREEN Outputs for modeling details.

Summarize HARP2 Health Risk Outputs (one in a Million)

Year	Unmitaged	Mitigation - MM-3.2-2(b)	Mitigated - Tier 4 Engines
All Construction	42.19	23.24	4.87
SMAQMD Threshold	10	10	10
Exceed Threshold (Yes or No)?	Yes	Yes	No

Note: See HARP2 Outputs for details.

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Sacramento
Calendar Year: 2024
Season: Winter
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

NOx_RUNEX 0.200 g/mile

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STREX
Sacrament	2024	HHDT	Aggregate	Aggregate	GAS	78.28161	9250.314	1566.258	3.357623	0	3.928713
Sacrament	2024	HHDT	Aggregate	Aggregate	DSL	10066.78	932983.9	0	2.225097	44.34448	0
Sacrament	2024	LDA	Aggregate	Aggregate	GAS	573542.9	20475544	3615337	0.05054	0	0.070993
Sacrament	2024	LDA	Aggregate	Aggregate	DSL	6552.677	243333.9	41068.4	0.061877	0	0
Sacrament	2024	LDA	Aggregate	Aggregate	ELEC	31601.4	1469835	205344.6	0	0	0
Sacrament	2024	LDT1	Aggregate	Aggregate	GAS	42724.96	1452148	257955	0.116081	0	0.169853
Sacrament	2024	LDT1	Aggregate	Aggregate	DSL	134.3675	2686.345	671.2809	0.97517	0	0
Sacrament	2024	LDT1	Aggregate	Aggregate	ELEC	43.35203	1184.044	253.4961	0	0	0
Sacrament	2024	LDT2	Aggregate	Aggregate	GAS	216977.2	8146084	1362953	0.077711	0	0.13064
Sacrament	2024	LDT2	Aggregate	Aggregate	DSL	394.3375	16086.28	2516.13	0.046184	0	0
Sacrament	2024	LHDT1	Aggregate	Aggregate	GAS	10754.53	302442.5	160226.5	0.410158	0.028648	1.95109
Sacrament	2024	LHDT1	Aggregate	Aggregate	DSL	11060.54	352698.2	139127.6	2.949757	2.264406	0
Sacrament	2024	LHDT2	Aggregate	Aggregate	GAS	1652.349	59554.44	24617.54	0.188842	0.027071	1.399863
Sacrament	2024	LHDT2	Aggregate	Aggregate	DSL	3549.696	134670.5	44650.72	1.406993	2.002064	0
Sacrament	2024	MCY	Aggregate	Aggregate	GAS	33728.07	225729.3	67449.4	1.264064	0	0.348859
Sacrament	2024	MDV	Aggregate	Aggregate	GAS	133927.9	4352275	822282.6	0.143117	0	0.28206
Sacrament	2024	MDV	Aggregate	Aggregate	DSL	2385.677	94154.96	15154.01	0.03514	0	0
Sacrament	2024	MH	Aggregate	Aggregate	GAS	2868.948	23854.15	287.0095	0.544381	0	1.166106
Sacrament	2024	MH	Aggregate	Aggregate	DSL	762.5743	6569.372	76.25743	4.941306	0	0
Sacrament	2024	MHDT	Aggregate	Aggregate	GAS	1756.199	80743.66	35138.02	0.473098	0.062682	1.770441
Sacrament	2024	MHDT	Aggregate	Aggregate	DSL	15569.73	643001.3	0	1.454036	2.444641	0
Sacrament	2024	OBUS	Aggregate	Aggregate	GAS	707.1453	36569.11	14148.56	0.320338	0.049111	1.215114
Sacrament	2024	OBUS	Aggregate	Aggregate	DSL	529.5835	40977.62	0	1.734606	7.38198	0
Sacrament	2024	SBUS	Aggregate	Aggregate	GAS	162.8642	7863.945	651.4567	0.324722	0.701599	1.292249
Sacrament	2024	SBUS	Aggregate	Aggregate	DSL	433.1583	16343.27	0	5.383292	34.55	0
Sacrament	2024	UBUS	Aggregate	Aggregate	GAS	233.6409	33531.06	934.5638	1.252956	0	4.547249
Sacrament	2024	UBUS	Aggregate	Aggregate	DSL	281.2328	40284.85	1124.931	9.406469	0	0

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Sacramento
NOx_RUNEX 0.106 g/mile
Calendar Year: 2036
Season: Winter
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STREX
Sacrament	2036	HHDT	Aggregate	Aggregate	GAS	78.47299	9344.15	1570.088	3.342914	0	3.578028
Sacrament	2036	HHDT	Aggregate	Aggregate	DSL	12577.03	1167735	0	1.475988	29.862	0
Sacrament	2036	LDA	Aggregate	Aggregate	GAS	659784.1	21782806	4157303	0.026823	0	0.023351
Sacrament	2036	LDA	Aggregate	Aggregate	DSL	8872.656	298487.6	56294.66	0.011035	0	0
Sacrament	2036	LDA	Aggregate	Aggregate	ELEC	105729.1	3720412	676297.8	0	0	0
Sacrament	2036	LDT1	Aggregate	Aggregate	GAS	44312.88	1509805	274159.2	0.034214	0	0.039747
Sacrament	2036	LDT1	Aggregate	Aggregate	DSL	38.78393	1021.672	212.3906	0.293695	0	0
Sacrament	2036	LDT1	Aggregate	Aggregate	ELEC	24.80728	749.2541	145.3795	0	0	0
Sacrament	2036	LDT2	Aggregate	Aggregate	GAS	274465.5	9471111	1719640	0.035588	0	0.039424
Sacrament	2036	LDT2	Aggregate	Aggregate	DSL	586.2352	20612.03	3707.569	0.03116	0	0
Sacrament	2036	LHDT1	Aggregate	Aggregate	GAS	6003.125	175144.6	89437.61	0.146954	0.024837	1.359035
Sacrament	2036	LHDT1	Aggregate	Aggregate	DSL	9057.954	289479	113937.7	0.792636	1.397688	0
Sacrament	2036	LHDT2	Aggregate	Aggregate	GAS	1517.63	55601.08	22610.42	0.053405	0.020512	0.682269
Sacrament	2036	LHDT2	Aggregate	Aggregate	DSL	3706.015	136618.2	46617.01	0.179482	1.031838	0
Sacrament	2036	MCY	Aggregate	Aggregate	GAS	39534.96	239927.7	79062.01	1.241886	0	0.344124
Sacrament	2036	MDV	Aggregate	Aggregate	GAS	145271.8	4526867	883945.9	0.056119	0	0.092921
Sacrament	2036	MDV	Aggregate	Aggregate	DSL	3717.704	124283.3	23394.38	0.012118	0	0
Sacrament	2036	MH	Aggregate	Aggregate	GAS	2276.979	19475.4	227.789	0.175996	0	0.824498
Sacrament	2036	MH	Aggregate	Aggregate	DSL	643.1399	5495.428	64.31399	3.004741	0	0
Sacrament	2036	MHDT	Aggregate	Aggregate	GAS	1510.083	71241.97	30213.74	0.132051	0.068588	1.001801
Sacrament	2036	MHDT	Aggregate	Aggregate	DSL	19517.86	763854.9	0	1.173662	1.786943	0
Sacrament	2036	OBUS	Aggregate	Aggregate	GAS	755.6866	37732.42	15119.78	0.125243	0.052751	0.841953
Sacrament	2036	OBUS	Aggregate	Aggregate	DSL	641.4504	44754.99	0	1.477199	7.684005	0
Sacrament	2036	SBUS	Aggregate	Aggregate	GAS	231.586	10400.96	926.3441	0.106427	0.741362	0.96458
Sacrament	2036	SBUS	Aggregate	Aggregate	DSL	440.5753	16140.61	0	1.658329	11.37781	0
Sacrament	2036	UBUS	Aggregate	Aggregate	GAS	220.2617	29381.05	881.0468	0.72928	0	3.549862
Sacrament	2036	UBUS	Aggregate	Aggregate	DSL	229.5186	30602.16	918.0743	3.040889	0	0

Appendix D2

Air Quality Management Plan

Draft

RICHARDS BOULEVARD OFFICE COMPLEX

Air Quality Management Plan

For submittal to
Sacramento Metropolitan Air Quality Management District

February 2019

Draft

RICHARDS BOULEVARD OFFICE COMPLEX

Air Quality Management Plan

Prepared for **February 2019**

Sacramento Metropolitan Air Quality Management District

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
esassoc.com

Bend
Camarillo
Delray Beach
Destin
Irvine
Los Angeles
Oakland
Orlando
Pasadena
Petaluma
Portland
Sacramento
San Diego
San Francisco
Santa Monica
Sarasota
Seattle
Tampa

D180722.00

TABLE OF CONTENTS

Air Quality Management Plan for Richards Boulevard Office Complex

List of Tables

Introduction

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has developed guidance to mitigate operational emissions for projects subject to the California Environmental Quality Act (CEQA).[1] SMAQMD's guidance recommends that project applicants prepare an Air Quality Mitigation Plan (AQMP) for all projects that exceed SMAQMD's operational significance thresholds of 65 pounds per day for oxides of nitrogen (NO_X), 65 pounds per day for reactive organic gases (ROG), 80 pounds per day for particulate matter less than or equal to 10 microns (PM_{10}), and 82 pounds per day for $PM_{2.5}$.

Operational emissions of NO_X and PM_{10} from the Richards Boulevard Office Complex (project) are greater than the applicable SMAQMD significance thresholds identified above. Therefore, an AQMP has been prepared for the project.

Methodology

Total daily emissions of ozone precursors (ROG and NO_X) from the project's mobile sources were estimated, using CalEEMod default settings.

A reduction target is calculated based on the project's consistency with the current State Implementation Plan (SIP). For projects included in the current SIP, the SMAQMD recommends a 15 percent reduction of NO_X and ROG mobile source emissions. For projects not considered in the SIP, the SMAQMD recommends a 35 percent reduction NO_X and ROG mobile source emissions. The Richards Boulevard Office Complex is in the SIP; therefore, a 15 percent reduction applies. The SMAQMD has determined that this reduction in emissions will satisfy the "all feasible measures" mitigation requirement under CEQA. The reduction target is in tons per year.

An AQMP is considered to meet the reduction target when both of the following equations are true:

$$NO_X \text{ Reduction Target} \leq \text{Unmitigated Project } NO_X - \text{Mitigated Project } NO_X$$

$$\text{ROG Reduction Target} \leq \text{Unmitigated Project ROG} - \text{Mitigated Project ROG}$$

The SMAQMD guidance recognizes that site-specific traffic information is more relevant than information generated from a statewide model (identified as prerequisite *TS: Traffic Study* in the SMAQMD guidance). Traffic studies typically include calculation of internal trip capture, mix of uses, distance to job centers, and sometimes walking and cycling information. Rather than use CalEEMod to estimate the impact of these features on a project, the information within the traffic study is used to create a mitigated project run. The quantity of mitigated emissions is compared to the reduction target, as described above.

---

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD), 2017. Recommended Guidance for Land Use Emission Reductions, Version 4 (for Operational Emissions). Accessed February 2019.

Reduction Target

Although the proposed project would be operationally significant for PM_{10}, no specific reduction standards have been determined at this time to be considered feasible mitigation. Therefore, this AQMP will implement all feasible mitigation for the project to reduce PM_{10} emissions.

The unmitigated project was modeled using CalEEMod 2016.3.2, and NO_X and ROG emissions are calculated. The unmitigated emissions have been estimated using CalEEMod default values. A reduction goal of 15 percent below an unmitigated scenario was used. This reduction target is then applied to the NO_X and ROG emissions to determine the reduction target in tons per year. The unmitigated project emissions, target reduction percentage, and reduction target is presented in Table 1.

TABLE 1.
DETERMINATION OF REDUCTION TARGET

Source	Pollutant	Unmitigated Emissions, tons/year	Target Reduction Percentage	Reduction Target, tons/year
Mobile sources	NO_X	57.9	15%	8.7
	ROG	15.1	15%	2.3

Mitigation

The prerequisite *TS: Traffic Study* (as identified in the SMAQMD guidance) was applied to the proposed project. The CalEEMod default estimate of total VMT was revised to be consistent with the project-specific VMT estimates. Within CalEEMod, VMT estimates for each land use type are the product of trip generation rates times trip lengths. CalEEMod's default trip lengths were adjusted so that its VMT matched the project specific estimates.

The VMT estimates for the proposed project were modeled using the Sacramento Area Council of Government's (SACOG) SACMET travel demand model. SACMET accounts for several factors that reduce project VMT. These include:

- job accessibility (within a 30-minute drive or transit travel time);
- proximity to transit (distance to nearest light rail or bus station, in miles);
- availability of Class 1 and 2 bike lanes within and adjacent to the project;
- parameters that effect walking, including sidewalks and pedestrian paths and distances to transit, commercial, and related destinations;
- job and housing density (dwelling units and jobs per acre); and
- jobs and housing mix.

Air Quality Mitigation Plan Effectiveness

As shown in Table 2, the proposed project would result in a reduction of 48 tons per year of NO_X and 12.9 tons per year of ROG emissions after mitigation. As calculated above, the reduction target is 8.7 tons per year of NO_X and 2.3 tons per year of ROG. Therefore, the proposed project's operational emissions would achieve the recommended 15 percent emission reduction guideline for ROG and would achieve the recommended 15 percent emission reduction guideline for NO_X established by the SMAQMD and would be consistent with the SIP.

TABLE 2.
AIR QUALITY MITIGATION PLAN EFFECTIVENESS

Condition	ROG, tons/year	NO_X, tons/year
Unmitigated	15.1	57.9
Mitigated	2.2	9.9
Reduction, Unmitigated minus Mitigated	12.9	48.0
Reduction Target	2.3	8.7
Meet Reduction Target?	Yes	Yes

Appendix E

Biological Resources Data

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Amphibians				
Ambystoma californiense	California tiger salamander	FT/ST/--	Found in vernal pools, ephemeral wetlands, and seasonal ponds, including constructed stock ponds, in grassland and oak savannah plant communities from 3 to 1,054 meters.	**None**. The project site does not provide habitat for this species.
Rana draytonii	California red-legged frog	FT/SSC/--	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 1,500 meters.	**None.** The Project does not provide suitable habitat for this species.
Spea hammondii	western spadefoot	--/SSC/--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**None**. The project site does not provide habitat for this species.
Birds				
Agelaius tricolor	tricolored blackbird	--/SC, SSC/--	Highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	**None**. The project site does not provide habitat for this species.
Aquila chrysaetos	golden eagle	--/FP/--	Nests and forages in a variety of open habitats, including grassland, shrubland, and cropland; most common in foothill habitats; rare foothill breeder; nests in cliffs, rock outcrops, and large trees.	**None.** This species avoids nesting near cities and other urban habitat.
Athene cunicularia	burrowing owl	--/SSC/--	Nests and forages in grasslands, agricultural fields, and low scrub habitats, especially where ground squirrel burrows are present; occasionally inhabits artificial structures and small patches of disturbed habitat.	**Low**. Burrows were identified in several locations on the FMP portion of the project site during the 2017 reconnaissance fieldwork. No burrowing owls or evidence of burrowing owls was observed. The nearest presumed extant CNDDB occurrence of this species located 3.2 miles east-southeast of the project site.
Buteo swainsoni	Swainson's hawk	--/ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Low.** Upon completion of the Demolition Project, no trees will remain on the project site. The project site will not provide nesting habitat for Swainson's hawks. Mature trees adjacent to the site could provide habitat, although more suitable habitat is located within the riparian corridors of the Sacramento and American rivers located over 0.4 mile away. The nearest CNDDB occurrence of this species is located 0.7 mile north of the project site.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Birds (cont.)				
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT/SE/--	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, w/lower story of blackberry, nettles, or wild grape.	**None**. The project site does not provide habitat for this species.
Elanus leucurus	white-tailed kite	--/FP/--	Inhabits rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Low.** Upon completion of the Demolition Project, no trees will remain on the project site. The project site will not provide nesting habitat for white-tailed kite. Mature trees adjacent to the site could provide habitat, although more suitable habitat is located within the riparian corridors of the Sacramento and American rivers located over 0.4 mile away. The nearest CNDDB occurrence of this species is located 1.2 mile east of the project site.
Laterallus jamaicensis coturniculus	California black rail	--/ST, FP/--	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	**None**. The project site does not provide nesting habitat for this species.
Melospiza melodia	Song sparrow “Modesto” population	--/SSC/--	Emergent freshwater marshes dominated by tule (*Scirpus spp.*, *Schoenoplectus spp.*) and cattail (*Typha spp.)* as well as riparian willow (*Salix spp.*) thickets. Also nest in riparian forests of valley oak (*Quercus lobata*) with a sufficient understory of blackberry (*Rubus spp.*), along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites.	**None.** The project site does not provide nesting habitat for this species.
Progne subis	purple martin	--/SSC/--	Inhabits woodlands, low elevation coniferous forest of Douglas-fir (Pseudotsuga menziesii), ponderosa pine (*Pinus ponderosa*), and Monterey pine (*Pinus radiata*).	**None.** The project site does not provide nesting habitat for this species.
Riparia riparia	bank swallow	--/ST/--	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**None**. The project site does not provide nesting habitat for this species.
Vireo bellii pusillus	Least Bell's vireo	FE/SE/--	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis* sp., and mesquite.	**None**. The project site does not provide nesting habitat for this species.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Birds (cont.)				
Xanthocephalus xanthocephalus	yellow-headed blackbird	--/SSC/--	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant; nesting timed with maximum emergence of aquatic insects	**None.** The project site does not provide nesting habitat for this species.
Fish				
Archoplites interruptus	Sacramento perch	--/CSC/--	Historically found in the sloughs, slow moving rivers, and lakes of the central valley. Prefer warm water. Aquatic vegetation is essential for young. (Within native range only)	**None.** The project site does not provide habitat for this species.
Hypomesus transpacificus	Delta smelt	FT/SE/--	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	**None**. The project site does not provide habitat for this species.
Oncorhynchus mykiss irideus pop. 11	Central Valley DPS steelhead	FT/--/--	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	**None**. The project site does not provide habitat for this species.
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	FE/SE/--	Anadromous species using riverine, estuarine, and saltwater habitat. Adult migration potentially occurs from January through May. Juvenile outmigration occurs from November through mid-March.	**None**. The project site does not provide habitat for this species.
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	FT/ST/--	Anadromous species using riverine, estuarine, and saltwater habitat. Adult migration potentially occurs from March through May. Juvenile outmigration occurs from November through April.	**None**. The project site does not provide habitat for this species.
Pogonichthys macrolepidotus	Sacramento splittail	--/SSC/--	Splittail spawn in shallow water over flooded vegetated habitat with a detectable water flow. Splittail larvae and juveniles remain in riparian or annual vegetation along shallow edges on floodplains	**None.** The project site does not provide habitat for this species.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Fish (cont.)				
Spirinchus thaleichthys	longfin smelt	FC/ST,SSC/--	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**None**. The project site does not provide habitat for this species.
Invertebrates				
Branchinecta lynchi	Vernal pool fairy shrimp	FT/--/--	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**None**. The project site does not provide habitat for this species.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Low**. Two large elderberry shrubs located approximately 40 feet west of the western FMP fence line were identified during the 2017 reconnaissance fieldwork. The shrubs are not located in a riparian area and are located over 0.7 mile from known VELB records.
Lepidurus packardi	vernal pool tadpole shrimp	FE/--/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed & highly turbid.	**None**. The project site does not provide habitat for this species.
Mammals				
Taxidea taxus	American badger	--/SSC/--	Drier open shrub, forest, and herbaceous habitats with friable soils	**None.** This species is not found in highly urbanized areas. The project site does not provide habitat for this species.
Reptiles				
Emys marmorata	western pond turtle	--/SSC/--	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 FT elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**None**. The project site does not provide habitat for this species.
Thamnophis gigas	Giant garter snake	FT/ST/--	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals & and irrigation ditches. This is the most aquatic of the garter snakes in California.	**None.** The project site does not provide habitat for this species.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Plants				
Astragalus tener var. ferrisiae	Ferris' milk-vetch	--/--/1B.1	Annual herb found in meadows and seeps that are occasionally vernally mesic and valley and foothill grassland that are occasionally subalkaline flats from 2 to 75 meters. Blooms April through May.	**None.** The project site does not provide habitat for this species.
Carex comosa	bristly sedge	--/--/2B.1	Perennial rhizomatous herb found in coastal prairie, marshes and swamps, occasionally along lake margins, and valley and foothill grassland from 0 to 625 meters. Blooms May through September.	**None.** The project site does not provide habitat for this species.
Centromadia parryi ssp. parryi	pappose tarplant	--/--/1B.2	Annual herb found in grassland, coastal salt marshes, alkaline springs, and seeps from 0 to 400 meters in elevation. Blooms May through November.	**None.** The project site does not provide habitat for this species.
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	--/--/2B.2	Annual parasitic vine found in marshes and swamps, which are occasionally freshwater, from 15 to 280 meters. Blooms July through October.	**None.** The project site does not provide habitat for this species.
Downingia pusilla	dwarf downingia	--/--/2B.2	Annual herb found in valley and foothill grassland, occasionally on mesic soils, and in vernal pools from 1 to 445 meters. Blooms March through May.	**None.** The project site does not provide habitat for this species.
Gratiola heterosepala	Boggs Lake hedge-hyssop	--/SE/1B.2	Annual herb found on clay substrate in marshes and swamps, occasionally along lake margins, and vernal pools from 10 to 2,375 meters. Blooms April through August.	**None**. The project site does not provide habitat for this species.
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	--/--/1B.2	Perennial rhizomatous herb found in marshes and swamps, which are occasionally freshwater, from 1 to 120 meters. Blooms June through September.	**None.** The project site does not provide habitat for this species.
Juglans hindsii	Northern California black walnut	--/--/1B.1	Perennial deciduous tree found in riparian forest and riparian woodland from 0 to 440 meters. Blooms April through May.	**None.** The project site does not provide habitat for this species.
Juncus leiospermus var. ahartii	Ahart's dwarf rush	--/--/1B.2	Annual herb found in vernal pool margins within valley and foothill grasslands. Found at elevations from 30 to 229 meters. Blooms March through May.	**None.** The project site does not provide habitat for this species.
Legenere limosa	Legenere	--/--/1B.1	Bottoms of vernal pools and other wet depressions in grassland communities. Annual herb found in vernal pools from 1 to 880 meters. Blooms April through June.	**None.** The project site does not provide habitat for this species.
Lepidium latipes var. heckardii	Heckard's pepper-grass	--/--/1B.2	Alkaline flats and in alkaline grasslands along the edges of vernal pools. Found at elevations from 2 to 200 meters. Blooms March-May.	**None.** The project site does not provide habitat for this species.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Plants (cont.)				
Lilaeopsis masonii	Mason's lilaeopsis	--/SR/1B.1	Rhizomatous herb found in marshes and swamps, that are occasionally brackish or freshwater, and riparian scrub from 0 to 10 meters. Blooms April through November.	**None**. The project site does not provide habitat for this species.
Orcuttia tenuis	Slender Orcutt grass	FT/SE/1B.1	Annual herb found in vernal pools. Found at elevations from 35 to 1760 meters. Blooms May through September.	**None**. The project site does not provide habitat for this species.
Orcuttia viscida	Sacramento Orcutt grass	FE/SE/1B.1	Annual herb found in vernal pools. Found at elevations from 30 to 100 meters. Blooms April through July.	**None**. The project site does not provide habitat for this species.
Sagittaria sanfordii	Sanford's arrowhead	--/--/1B.2	Perennial rhizomatous herb, which is occasionally emergent, found in marshes and swamps, which are occasionally comprised of assorted shallow freshwater, from 0 to 650 meters. Blooms May through October.	**None.** The project site does not provide habitat for this species.
Symphyotrichum lentum	Suisun Marsh aster	--/--/1B.2	Perennial rhizomatous herb found in marshes and swamps, which are occasionally brackish and freshwater, from 0 to 3 meters. Blooms May through November.	**None.** The project site does not provide habitat for this species.
Trifolium hydrophilum	saline clover	--/--/1B.2	Found in marshes and swamps, valley and foothill grassland, occasionally in mesic or alkaline areas, and vernal pools from 0 to 300 meters. Blooms April through June.	**None.** The project site does not provide habitat for this species
Sensitive Natural Communities				
Northern Claypan Vernal Pool	--	--	Similar to Northern Hardpan Vernal Pools, but with less topographical relief, and usually lower overall cover. Pools range in size from the small (a few square meters) to quite large (covering several hectares).	**None**. The project site does not contain this sensitive natural community.
Northern Hardpan Vernal Pool	--	--	Community is dominated by annual grasses and herbs that grow in and out of the water. Germination and growth begin with winter rains, often continuing even when inundated. These pools gradually evaporate during spring, leaving concentric bands of vegetation that colorfully encircle the drying pools.	**None**. The project site does not contain this sensitive natural community.
Northern Volcanic Mud Flow Vernal Pool	--	--	Vernal pools occur on tertiary volcanic mudflows called lahars. The pools are small, forming in irregular depressions in gently sloping surfaces.	**None**. The project site does not contain this sensitive natural community.

SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR AT THE PROJECT SITE

Scientific Name	Common Name	Listing Status: Federal/State/Other	Habitat Description	Potential for Occurrence within the Project Site
Sensitive Natural Communities (cont.)				
Elderberry savanna	--	--	Open to moderately closed stands characterized by *Sambucus Mexicana*. Understory typically dominated by grasses. Occurs in association with remnant riparian forest vegetation.	**None**. The project site does not contain this sensitive natural community.
Great Valley Cottonwood Riparian Forest	--	--	A dense, broadleafed, winter deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and Goodding's black willow (*Salix gooddingii*). The understory is usually dense, with abundant vegetative reproduction of canopy dominants and California wild grape is the most conspicuous vine. Habitat experiences frequent flooding.	**None**. The project site does not contain this sensitive natural community.
Great Valley Oak Riparian Forest	--	--	A medium to tall (rarely to 100 feet), broadleafed, winter-deciduous, closed-canopy riparian forest dominated by valley oak (*Quercus lobata*). Canopy is open to continuous. Shrub layer is open to intermittent. Herbaceous layer may be grassy. Soils are alluvial or residual.	**None**. The project site does not contain this sensitive natural community.

KEY:

Federal: (USFWS)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government
(PD) = Proposed for Delisting

State: (CDFW)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
SC = Candidate for listing by the State of California
SSC = California Species of Special Concern
FP = CDFW Fully Protected Species

CRPR: (California Rare Plant Rank)
Rank 1A = Plants presumed extinct in California
Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
Rank 2A = Plants presumed extirpated in California but common elsewhere
Rank 2B = Plants rare, threatened, or endangered in California but more common elsewhere

Note: Ranks at each level also includes a threat rank (e.g., CRPR 2B.2) and are determined as follows:
0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Present: Species known to occur within the Site based on CNDDB records and/or observed within the Site during the biological surveys.

High: Species known to occur on or near the Site (based on CNDDB records within five miles and/or based on professional expertise specific to the Site or species) and there is suitable habitat for the species on the Site.

Low: Species known to occur in the vicinity of the Site and there is marginal habitat within the Site -OR- Species is not known to occur in the vicinity of the site, however, there is suitable habitat for the species on the site.

None: Species is not known to occur on or in the vicinity of the Site and there is no suitable habitat within the Site -OR- Species was surveyed for during the appropriate season with negative results -OR- The Site does not provide suitable soils or occurs outside of the known elevation or geographic ranges -OR- Species is not known to occur in Sacramento County.

SOURCES: CDFW 2018; CNPS 2018; and USFWS 2018.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Taylor Monument (3812165) OR Sacramento East (3812154) OR Sacramento West (3812155) OR Clarksburg (3812145) OR Rio Linda (3812164) OR Florin (3812144) OR Citrus Heights (3812163) OR Carmichael (3812153) OR Elk Grove (3812143))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus tener var. ferrisiae Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4T5	SH	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Dumontia oregonensis hairy water flea	ICBRA23010	None	None	G1G3	S1	
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elderberry Savanna Elderberry Savanna	CTT63440CA	None	None	G2	S2.1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Juglans hindsii Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidium latipes var. heckardii Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	G1	S1.1	
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Oncorhynchus tshawytscha pop. 6 chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
Oncorhynchus tshawytscha pop. 7 chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	G5	S1	
Orcuttia tenuis slender Orcutt grass	PMPOA4G050	Threatened	Endangered	G2	S2	1B.1
Orcuttia viscida Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 64

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: December 18, 2018
Consultation Code: 08ESMF00-2019-SLI-0623
Event Code: 08ESMF00-2019-E-01874
Project Name: Richards Boulevard Office Complex

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0623

Event Code: 08ESMF00-2019-E-01874

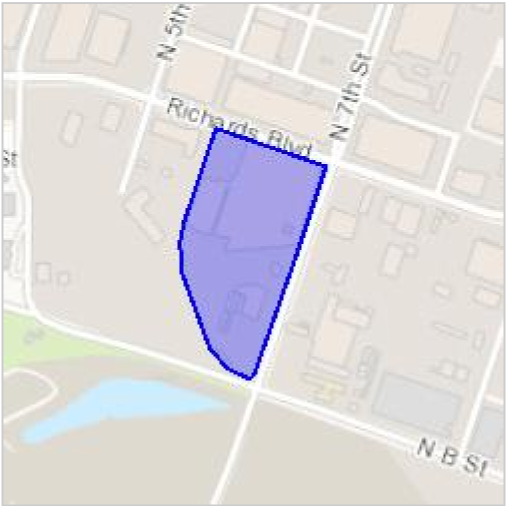
Project Name: Richards Boulevard Office Complex

Project Type: DEVELOPMENT

Project Description: The purpose of the Richards Boulevard Office Complex Project is to consolidate State office space and address State office space deficiencies in downtown Sacramento and to provide a modern, efficient, and safe environment for State employees and the public they serve.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.59446171961495N121.4930618497282W



Counties: Sacramento, CA

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

21 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812165, 3812164, 3812163, 3812155, 3812154, 3812153, 3812145 3812144 and 3812143;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4T5
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Navarretia eriocephala	hoary navarretia	Polemoniaceae	annual herb	May-Jun	4.3	S4?	G4?
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	1B.1	S2	G2
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	1B.1	S1	G1
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous	(Apr)May-	1B.2	S2	G2

			herb	Nov			
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 17 December 2018].

Search the Inventory

Simple Search
Advanced Search
Glossary

Information

About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors

The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments

rareplants@cnps.org

Appendix F

Noise Data

Existing

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)	
Calveno Peak				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT						
	from:	to:		%	Auto	%	MT	%	HT															
7th Street	Richards	Vine	299	95	284.05	3	8.97	2	5.98	25	40	25	40	25	40	54.6	51.3	57.2	59.8	40	55.5	4.5	14.7	7
7th Street	Richards	North B S	615	95	584.25	3	18.45	2	12.3	25	40	25	40	25	40	57.8	54.4	60.3	62.9	40	58.6	9.2	30.3	
7th Street	Water	Railyrds	933	95	886.35	3	27.99	2	18.66	25	40	25	40	25	40	59.6	56.2	62.1	64.7	40	60.4	14.0	45.9	
5th Street	Richards	Riverfrnt	134	95	127.3	3	4.02	2	2.68	25	40	25	40	25	40	51.1	47.8	53.7	56.3	40	52.0	2.0	6.6	
Richards	I-5	Sequoia	1817	95	1726.2	3	54.51	2	36.34	35	56	35	56	35	56	66.7	61.4	66.3	70.1	40	65.9	49.1	161.1	
Richards	Sequoia	7th	1785	95	1695.8	3	53.55	2	35.7	35	56	35	56	35	56	66.6	61.3	66.3	70.1	40	65.8	48.2	158.2	
Richards	Dos Rios	16th	1904	95	1808.8	3	57.12	2	38.08	35	56	35	56	35	56	66.9	61.6	66.6	70.4	40	66.1	51.4	168.8	
Dos rios	Richards	Vine	218	95	207.1	3	6.54	2	4.36	35	56	35	56	35	56	57.5	52.2	57.1	60.9	40	56.7	5.9	19.3	
Dos rios	Richards	North D	84	95	79.8	3	2.52	2	1.68	35	56	35	56	35	56	53.3	48.0	53.0	56.8	40	52.5	2.3	7.4	

Assumptions: AM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Calveno Peak				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT					
	from:	to:		%	Auto	%	MT	%	HT														
7th Street	Richards	Vine	345	95	327.75	3	10.35	2	6.9	25	40	25	40	25	40	55.3	51.9	57.8	60.4	40	56.1	5.2	17.0
7th Street	Richards	North B S	1012	95	961.4	3	30.36	2	20.24	25	40	25	40	25	40	59.9	56.6	62.5	65.1	40	60.8	15.2	49.8
7th Street	Water	Railyrds	1322	95	1255.9	3	39.66	2	26.44	25	40	25	40	25	40	61.1	57.7	63.6	66.2	40	62.0	19.8	65.1
5th Street	Richards	Riverfrnt	134	95	127.3	3	4.02	2	2.68	25	40	25	40	25	40	51.1	47.8	53.7	56.3	40	52.0	2.0	6.6
Richards	I-5	Sequoia	2616	95	2485.2	3	78.48	2	52.32	35	56	35	56	35	56	68.3	63.0	67.9	71.7	40	67.5	70.7	231.9
Richards	Sequoia	7th	2584	95	2454.8	3	77.52	2	51.68	35	56	35	56	35	56	68.2	62.9	67.9	71.7	40	67.4	69.8	229.0
Richards	Dos Rios	16th	2372	95	2253.4	3	71.16	2	47.44	35	56	35	56	35	56	67.8	62.6	67.5	71.3	40	67.0	64.1	210.2
Dos rios	Richards	Vine	218	95	207.1	3	6.54	2	4.36	35	56	35	56	35	56	57.5	52.2	57.1	60.9	40	56.7	5.9	19.3
Dos rios	Richards	North D	90	95	85.5	3	2.7	2	1.8	35	56	35	56	35	56	53.6	48.3	53.3	57.1	40	52.8	2.4	8.0

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Calveno Peak				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT					
	from:	to:		%	Auto	%	MT	%	HT														
7th Street	Richards	Vine	770	95	731.5	3	23.1	2	15.4	25	40	25	40	25	40	58.7	55.4	61.3	63.9	40	59.6	11.6	37.9
7th Street	Richards	North B S	1065	95	1011.8	3	31.95	2	21.3	25	40	25	40	25	40	60.2	56.8	62.7	65.3	40	61.0	16.0	52.4
7th Street	Water	Railyrds	2660	95	2527	3	79.8	2	53.2	25	40	25	40	25	40	64.1	60.8	66.7	69.3	40	65.0	39.9	131.0
5th Street	Richards	Riverfrnt	445	95	422.75	3	13.35	2	8.9	25	40	25	40	25	40	56.4	53.0	58.9	61.5	40	57.2	6.7	21.9
Richards	I-5	Sequoia	2590	95	2460.5	3	77.7	2	51.8	35	56	35	56	35	56	68.2	62.9	67.9	71.7	40	67.4	70.0	229.6
Richards	Sequoia	7th	2430	95	2308.5	3	72.9	2	48.6	35	56	35	56	35	56	67.9	62.7	67.6	71.4	40	67.2	65.6	215.4
Richards	Dos Rios	16th	3905	95	3709.8	3	117.2	2	78.1	35	56	35	56	35	56	70.0	64.7	69.7	73.5	40	69.2	105.5	346.1
Dos rios	Richards	Vine	340	95	323	3	10.2	2	6.8	35	56	35	56	35	56	59.4	54.1	59.1	62.9	40	58.6	9.2	30.1
Dos rios	Richards	North D	655	95	622.25	3	19.65	2	13.1	35	56	35	56	35	56	62.2	57.0	61.9	65.7	40	61.5	17.7	58.1

Assumptions: AM peak hour traffic data from Fehr & Peers

Cumulative + Project

ROAD SEGMENT			TOTAL # VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL (dBA)			CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
				Auto		MT		HT		Auto	k/h	MT	k/h	HT	k/h	Auto	MT	HT					
Calveno Peak	from:	to:		%	Auto	%	MT	%	HT														
7th Street	Richards	Vine	720	95	684	3	21.6	2	14.4	25	40	25	40	25	40	58.5	55.1	61.0	63.6	40	59.3	10.8	35.4
7th Street	Richards	North B S	1455	95	1382.3	3	43.65	2	29.1	25	40	25	40	25	40	61.5	58.2	64.0	66.6	40	62.4	21.8	71.6
7th Street	Water	Railyrds	2710	95	2574.5	3	81.3	2	54.2	25	40	25	40	25	40	64.2	60.9	66.7	69.3	40	65.1	40.7	133.4
5th Street	Richards	Riverfrnt	445	95	422.75	3	13.35	2	8.9	35	56	35	56	35	56	60.6	55.3	60.2	64.0	40	59.8	12.0	39.4
Richards	I-5	Sequoia	2895	95	2750.3	3	86.85	2	57.9	35	56	35	56	35	56	68.7	63.4	68.4	72.2	40	67.9	78.2	256.6
Richards	Sequoia	7th	2860	95	2717	3	85.8	2	57.2	35	56	35	56	35	56	68.6	63.4	68.3	72.1	40	67.9	77.3	253.5
Richards	Dos Rios	16th	4055	95	3852.3	3	121.7	2	81.1	35	56	35	56	35	56	70.2	64.9	69.8	73.6	40	69.4	109.5	359.4
Dos rios	Richards	Vine	365	95	346.75	3	10.95	2	7.3	35	56	35	56	35	56	59.7	54.4	59.4	63.2	40	58.9	9.9	32.4
Dos rios	Richards	North D	665	95	631.75	3	19.95	2	13.3	35	56	35	56	35	56	62.3	57.0	62.0	65.8	40	61.5	18.0	58.9

Assumptions: AM peak hour traffic data from Fehr & Peers

Appendix G
Transportation Data

SURVEY OF DGS EMPLOYEES TO BE RELOCATED TO RICHARDS OFFICE BUILDING

Note: Survey responses aggregated into three distinct groups. Weighting factors applied to account for relative sampling rates for each group to yield weighted sample that is representative of entire population of interest.
Approximatley 32% of all surveyed employees responded.

CURRENT MODE OF TRAVEL TO WORK

	Group A	Group B	Group C	Weighted
Drive alone and park	92.06%	52.18%	88.34%	76.40%
Carpool	5.84%	21.02%	5.48%	11.38%
Vanpool	0.00%	0.71%	0.70%	0.43%
Bus	0.70%	13.81%	2.39%	5.96%
Light Rail	0.47%	9.45%	1.40%	4.02%
Cap Corridor	0.00%	0.12%	0.14%	0.08%
Ridehail	0.23%	0.12%	0.00%	0.14%
Bicycle/Bikeshare	0.47%	1.30%	0.84%	0.86%
Walk	0.23%	1.30%	0.70%	0.74%

MODE OF TRAVEL TO RICHARDS OFFICE BUILDING

	Group A	Group B	Group C	Weighted
Drive alone and park at site	72.42%	58.64%	70.97%	66.97%
Drive alone and park in vicinity and TNC/Bike to site	2.32%	4.29%	4.15%	3.48%
Carpool and park at site	8.25%	17.15%	5.90%	11.00%
Vanpool and park at site	0.52%	0.88%	1.75%	0.94%
Bus	2.58%	5.55%	4.63%	4.16%
Light rail to site	10.57%	10.59%	7.81%	9.93%
Light rail to Downtown and Uber/Lyft/Bike to site	1.55%	0.76%	1.12%	1.15%
Capitol Corridor	0.26%	0.38%	0.80%	0.43%
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.26%	0.25%	0.00%	0.20%
Bicycle/Bikeshare	1.29%	1.26%	2.71%	1.61%
Walk	0.00%	0.25%	0.16%	0.13%

MODE OF TRAVEL TO RICHARDS OFFICE BUILDING IF DRIVE ALONE NOT OPTION

	Group A	Group B	Group C	Weighted
Drive alone and park at site	0.00%	0.00%	0.00%	0.00%
Drive alone and park in vicinity and TNC/Bike to site	24.42%	27.62%	29.24%	26.74%
Carpool and park at site	26.27%	23.76%	23.98%	24.80%
Vanpool and park at site	8.29%	3.59%	6.14%	6.04%
Bus	10.60%	17.40%	9.65%	12.90%
Light rail to site	21.20%	20.44%	19.59%	20.54%
Light rail to Downtown and Uber/Lyft/Bike to site	0.46%	1.10%	4.09%	1.55%
Capitol Corridor	1.84%	1.38%	0.88%	1.44%
Ridehailing Service (e.g., Uber, Lyft, etc.)	5.53%	1.93%	2.34%	3.45%
Bicycle/Bikeshare	0.92%	2.49%	3.51%	2.11%
Walk	0.46%	0.28%	0.58%	0.42%

AM PEAK HOUR ARRIVAL TIME TO WORK

	Group A	Group B	Group C	Weighted
500	0.00%	0.11%	0.00%	0.04%
515	0.00%	0.23%	0.00%	0.08%
530	0.00%	0.34%	0.14%	0.16%
545	0.00%	1.71%	0.28%	0.70%
600	1.15%	3.31%	0.83%	1.88%
615	1.38%	2.85%	1.25%	1.90%
630	3.69%	6.61%	4.72%	5.02%
645	5.07%	10.60%	3.61%	6.78%
700	11.52%	22.92%	13.89%	16.30%
715	4.38%	7.98%	3.61%	5.53%
730	16.82%	14.82%	13.75%	15.36%
745	11.75%	5.02%	8.33%	8.45%
800	18.43%	11.40%	20.69%	16.36%
815	3.69%	3.19%	3.06%	3.36%
830	13.13%	6.16%	13.06%	10.53%
845	1.15%	0.57%	1.25%	0.96%
900	6.68%	1.60%	9.31%	5.41%
915	0.46%	0.34%	0.69%	0.47%
930	0.69%	0.00%	0.69%	0.44%
945	0.00%	0.00%	0.14%	0.03%
1000	0.00%	0.23%	0.69%	0.25%

PM PEAK HOUR DEPARTURE TIME TO WORK

	Group A	Group B	Group C	Weighted
200	0.00%	0.00%	0.29%	0.07%
215	0.00%	0.00%	0.14%	0.03%
230	0.48%	1.80%	0.29%	0.92%
245	0.00%	0.12%	0.14%	0.08%
300	1.43%	2.40%	1.14%	1.72%
315	0.00%	0.84%	0.29%	0.38%
330	5.70%	12.22%	5.15%	7.99%
345	1.90%	2.04%	1.00%	1.74%
400	14.96%	13.89%	16.74%	14.98%
415	1.19%	2.87%	1.29%	1.84%
430	18.76%	27.54%	16.88%	21.58%
500	34.20%	24.91%	28.47%	29.41%
515	3.33%	3.71%	5.01%	3.86%
530	9.03%	3.71%	10.59%	7.42%
545	0.95%	0.48%	1.29%	0.85%
600	6.18%	2.16%	6.87%	4.85%
615	0.00%	0.24%	0.72%	0.26%
630	1.43%	0.24%	1.43%	0.99%
645	0.24%	0.12%	0.72%	0.31%
700	0.24%	0.60%	1.43%	0.65%
715	0.00%	0.12%	0.14%	0.08%

NUMBER OF DAYS PER WEEK TYPICALLY TRAVELING OFF-SITE FOR WORK IN A PRIVATE VEHICLE

	Group A	Group B	Group C	Weighted
Daily	1.39%	2.17%	2.07%	1.84%
2 -4 times per week	5.08%	1.72%	4.70%	3.74%
Once per week	6.24%	1.37%	4.70%	4.07%
Once every two weeks	9.01%	3.66%	5.95%	6.31%
Once a month	35.33%	19.34%	30.01%	28.15%
Never	42.96%	71.74%	52.56%	55.89%

HOW CLOSE PARK TO WORKSITE DURING WORKDAY

	Group A	Group B	Group C	Weighted
On-site	99.24%	62.93%	90.63%	83.75%
1 block away	0.51%	12.13%	4.85%	5.84%
2 blocks away	0.00%	9.15%	0.65%	3.55%
3 blocks away	0.25%	5.26%	0.81%	2.24%
4 blocks away	0.00%	4.12%	0.97%	1.76%
5 or more blocks away	0.00%	6.41%	2.10%	2.87%

HOW MUCH PER MONTH CURRENTLY PAY TO PARK AT WORKSITE

	Group A	Group B	Group C	Weighted
$0	98.98%	14.49%	92.38%	66.11%
$1 to $25	0.26%	1.69%	0.17%	0.77%
$26 to $50	0.26%	5.31%	0.33%	2.15%
$51 to $75	0.00%	49.52%	0.99%	18.59%
$76 to $100	0.00%	4.11%	0.66%	1.68%
$101 to $125	0.26%	7.49%	0.83%	3.07%
$126 to $150	0.26%	7.00%	4.14%	3.67%
$176 to $200	0.00%	6.76%	0.33%	2.59%
Over $200	0.00%	3.62%	0.17%	1.38%

AVERAGE VEHICLE OCCUPANCY OF CARPOOLS

	Group A	Group B	Group C	Weighted
AVO	2.04	2.12	2.06	2.07

RECEIVE A MONTHLY PARKING DISCOUNT FOR CARPOOLING

	Group A	Group B	Group C	Weighted
Yes	4.00%	49.02%	11.76%	22.52%
No	96.00%	50.98%	88.24%	77.48%

HOW LIKELY TO DRIVE ALONE TO WORK IF COST FOR PARKING INCREASED TO $150 PER MONTH

	Group A	Group B	Group C	Weighted
Very likely	36.40%	36.51%	40.19%	37.33%
Somewhat likely	26.05%	24.04%	20.58%	24.02%
Somewhat unlikely	15.71%	17.01%	18.16%	16.77%
Very unlikely	21.84%	22.45%	21.07%	21.88%

HOW LIKELY TO DRIVE ALONE TO WORK IF COST FOR PARKING INCREASED TO $200 PER MONTH

	Group A	Group B	Group C	Weighted
Very likely	28.96%	26.88%	28.29%	28.03%
Somewhat likely	22.39%	17.08%	19.02%	19.63%
Somewhat unlikely	10.42%	14.12%	13.90%	12.61%
Very unlikely	38.22%	41.91%	38.78%	39.72%

HOW LIKELY TO DRIVE ALONE TO WORK IF CLOSEST PARKING SEVERAL BLOCKS AWAY

	Group A	Group B	Group C	Weighted
Very likely	34.24%	35.68%	40.68%	36.29%
Somewhat likely	31.91%	30.00%	31.96%	31.21%
Somewhat unlikely	17.51%	16.59%	12.35%	15.96%
Very unlikely	16.34%	17.73%	15.01%	16.54%

HOW LIKELY TO DRIVE ALONE TO WORK IF HELPED TO FIND CARPOOL/VANPOOL MATCHES

	Group A	Group B	Group C	Weighted
Very likely	25.48%	28.97%	33.25%	28.60%
Somewhat likely	29.34%	25.98%	25.18%	27.12%
Somewhat unlikely	20.46%	20.00%	16.14%	19.27%
Very unlikely	24.71%	25.06%	25.43%	25.01%

HOW LIKELY TO DRIVE ALONE TO WORK IF MONTHLY TRANSIT PASS SUBSIDY INCREASED FROM $65 TO $100

	Group A	Group B	Group C	Weighted
Very likely	34.11%	34.94%	35.63%	34.77%
Somewhat likely	24.03%	19.77%	24.08%	22.46%
Somewhat unlikely	18.99%	17.47%	17.20%	18.01%
Very unlikely	22.87%	27.82%	23.10%	24.76%

HOW LIKELY TO DRIVE ALONE TO WORK IF SAFETY ON TRANSIT WAS IMPROVED

	Group A	Group B	Group C	Weighted
Very likely	35.29%	34.49%	37.35%	35.48%
Somewhat likely	29.02%	24.31%	24.57%	26.23%
Somewhat unlikely	17.25%	19.91%	17.94%	18.40%
Very unlikely	18.43%	21.30%	20.15%	19.90%

HOW LIKELY TO DRIVE ALONE TO WORK IF MORE FREQUENT TRANSIT SERVICE

	Group A	Group B	Group C	Weighted
Very likely	34.51%	34.43%	36.86%	35.03%
Somewhat likely	28.63%	21.70%	21.87%	24.47%
Somewhat unlikely	17.65%	19.10%	18.92%	18.49%
Very unlikely	19.22%	24.76%	22.36%	22.01%

HOW LIKELY TO DRIVE ALONE TO WORK IF TRANSIT SERVICE PROVIDED LATER INTO EVENING

	Group A	Group B	Group C	Weighted
Very likely	33.07%	35.63%	36.23%	34.76%
Somewhat likely	22.96%	17.93%	22.33%	20.95%
Somewhat unlikely	22.96%	17.70%	17.62%	19.75%
Very unlikely	21.01%	28.74%	23.82%	24.54%

HOW LIKELY TO DRIVE ALONE TO WORK IF COMMUTER BUS SERVICE WAS AVAILABLE

	Group A	Group B	Group C	Weighted
Very likely	30.50%	35.55%	35.21%	33.48%
Somewhat likely	27.41%	19.50%	22.25%	23.26%
Somewhat unlikely	18.92%	15.14%	16.38%	16.92%
Very unlikely	23.17%	29.82%	26.16%	26.34%

INITIAL MODE OF TRAVEL TO RICHARDS OFFICE BUILDING

5,853 = Total Employees

	Mode Split	Persons traveling by mode
Drive alone and park at site	66.97%	3920
Drive alone and park in vicinity and TNC/Bike to site	3.48%	204
Carpool and park at site	11.00%	644
Vanpool and park at site	0.94%	55
Bus	4.16%	244
Light rail to site	9.93%	581
Light rail to Downtown and Uber/Lyft/Bike to site	1.15%	67
Capitol Corridor	0.43%	25
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.20%	11
Bicycle/Bikeshare	1.61%	94
Walk	0.13%	8
	TOTAL	5853

Employee total considers percentage of employees that are full (90%) vs. part-time (10%), with an estimated 75% of part time employees being present on site during a mid-week day.

ITERATION 1 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (SHIFT AWAY FROM SOV PARKING AT SITE DUE TO LIMITED SUPPLY)

5,853 = Total Full Time Employee Equivalents
3,310 = SOVs redistributed

	Mode Split	Initial Persons by mode	Redistributed SOV's	Redistributed Person Trips	
Drive alone and park at site	66.97%	3920	0.00%	610	10.42%
Drive alone and park in vicinity and TNC/Bike to site	3.48%	204	26.74%	1089	18.60%
Carpool and park at site	11.00%	644	24.80%	1464	25.02%
Vanpool and park at site	0.94%	55	6.04%	255	4.36%
Bus	4.16%	244	12.90%	670	11.45%
Light rail to site	9.93%	581	20.54%	1261	21.55%
Light rail to Downtown and Uber/Lyft/Bike to site	1.15%	67	1.55%	119	2.03%
Capitol Corridor	0.43%	25	1.44%	73	1.25%
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.20%	11	3.45%	125	2.14%
Bicycle/Bikeshare	1.61%	94	2.11%	164	2.81%
Walk	0.13%	8	0.42%	22	0.37%
	TOTAL	5853		5853	

ITERATION 1 - ON-SITE PARKING DEMAND

SOVs	610		
Carpools	707		
Vanpools	55	Demand based on redistributed modes	
Total	1372	CONTROL TOTAL TO MATCH	1370

ITERATION 1 - OFF-SITE PARKING DEMAND

Peak Parking Demand	1089

ITERATION 2 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (BUS MODE CAPPED AT 4%)

5,853 = Total Full Time Employee Equivalents
436 = Bus riders redistributed

	Iter. 1 - Persons by mode	Redistributed BUS	Redistributed Person Trips
Drive alone and park at site	610	0.00%	610
Drive alone and park in vicinity and TNC/Bike to site	1089	0.00%	1089
Carpool and park at site	1464	0.00%	1464
Vanpool and park at site	255	17.94%	334
Bus	670	-	234
Light rail to site	1261	60.96%	1527
Light rail to Downtown and Uber/Lyft/Bike to site	119	4.61%	139
Capitol Corridor	73	0.00%	73
Ridehailing Service (e.g., Uber, Lyft, etc.)	125	10.23%	170
Bicycle/Bikeshare	164	6.26%	192
Walk	22	0.00%	22
TOTAL	5853		5853

Note: Redistributed bus travel assumed to proportionally be filled by vanpool and park at site, light rail to site, light rail to Downtown, Capitol Corridor, Ridehailing, and Bike. Bus cap of 4% based on current overall level of 6% bus usage for relocated employees, with additional consideration given for lack of commuter bus service to project site. Additionally, 12% of employees reside in zip codes served by three bus routes that serve project site.

ITERATION 2 - ON-SITE PARKING DEMAND

SOVs	610		
Carpools	707		
Vanpools	55	Demand based on redistributed modes	
Total	1372	CONTROL TOTAL TO MATCH	1370

ITERATION 2 - OFF-SITE PARKING DEMAND

Peak Parking Demand	1089

ITERATION 3 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (OFF-SITE PARKING MATCHED TO CONTROL TOTAL)

5,853 = Total Full Time Employee Equivalents
90 = SOV off-site parkers redistributed

	Iter. 2 - Persons by mode	Redistributed Off-Site SOV	Redistributed Person Trips	
Drive alone and park at site	610	0.00%	610	10%
Drive alone and park in vicinity and TNC/Bike to site	1089	-	999	17%
Carpool and park at site	1464	0.00%	1464	25%
Vanpool and park at site	334	17.94%	350	6%
Bus	234	0.00%	234	4%
Light rail to site	1527	60.96%	1582	27%
Light rail to Downtown and Uber/Lyft/Bike to site	139	4.61%	143	2%
Capitol Corridor	73	0.00%	73	1%
Ridehailing Service (e.g., Uber, Lyft, etc.)	170	10.23%	179	3%
Bicycle/Bikeshare	192	6.26%	197	3%
Walk	22	0.00%	22	0%
TOTAL	5853		5853	

Note: Redistributed off-site SOV travel assumed to proportionally be filled by vanpool and park at site, light rail to site, light rail to Downtown, Capitol Corridor, Ridehailing, and Bike.

ITERATION 3 - ON-SITE PARKING DEMAND

SOVs	610		
Carpools	707		
Vanpools	55	Demand based on redistributed modes	
Total	1372	CONTROL TOTAL TO MATCH	1370

ITERATION 3 - OFF-SITE PARKING DEMAND

Peak Parking Demand	999	CONTROL TOTAL TO MATCH	1000

Note: Control total based on 180 on-street spaces within Railyards SP, 600 assumed available spaces in new parking garage on 5th St, and 220 available spaces north of Richards Blvd.

ITERATION 4 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (LIGHT RAIL USE CAPPED AT 20%

ITERATION 4 - ON-SITE PARKING DEMAND

5,853 = Total Full Time Employee Equivalents
411 = SOV off-site parkers redistributed

	Iter. 3 - Persons by mode	Redistributed Light Rail	Redistributed Person Trips	
Drive alone and park at site	610	0.00%	610	10.42%
Drive alone and park in vicinity and TNC/Bike to site	999	0.00%	999	17.06%
Carpool and park at site	1464	0.00%	1464	25.02%
Vanpool and park at site	350	0.00%	350	5.97%
Bus	234	0.00%	234	4.00%
Light rail to site	1582	-	1171	20.00%
Light rail to Downtown and Uber/Lyft/Bike to site	143	0.00%	143	2.45%
Capitol Corridor	73	0.00%	73	1.25%
Ridehailing Service (e.g., Uber, Lyft, etc.)	179	100.00%	591	10.09%
Bicycle/Bikeshare	197	0.00%	197	3.37%
Walk	22	0.00%	22	0.37%
TOTAL	5853		5853	

SOVs	610			
Carpools	707			
Vanpools	62	Demand based on redistributed modes		
Total	1379		CONTROL TOTAL TO MATCH	1370

ITERATION 4 - OFF-SITE PARKING DEMAND

Peak Parking Demand	999	CONTROL TOTAL TO MATCH	1000

Note: Control total based on 180 on-street spaces within Railyards SP, 600 assumed available spaces in new parking garage on 5th St, and 220 available spaces north of Richards Blvd.

AM PEAK HOUR VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	279	45	Outbound trip estimate based on ITE in/out trips (i.e., 14% of every 100 are outbound)
Drive alone and park in vicinity and TNC/Bike to site	456		TNC vehicles likely to already be within study area; hence not new trip, but added to dwys.
Carpool and park at site	323	53	Outbound trip estimate based on ITE in/out trips (i.e., 14% of every 100 are outbound)
Vanpool and park at site	27		Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	33	33	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	270	270	Single occupants. Each TNC creates two trip ends
Customers/Visitors	13	6	Assumes 25% of 50 visitor spaces become occupied during AM peak hour
Service/Utility/Delivery	15	5	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
TOTAL	1416	412	

Employees arrive at work from 7:15 to 8:15 AM	45.70%	Vehicular Trip Generation Rates	Per	AM Peak Hour
Carpool Average Vehicle Occupancy=	2.07		KSF	1.33
Average occupancy of vanpools =	6		Employee	0.30

COMPARABLE DATA STATISTIC

	Downtown Depts.	
Walk	**149**	**3%**
Van	**32**	**1%**
TNC	**5**	**0%**
LRT	**547**	**12%**
Drive Alone	**2336**	**50%**
Carpool	**739**	**16%**
CCJPA	**23**	**0%**
Bus	**632**	**13%**
Bike	**242**	**5%**

455.161882

PM PEAK HOUR VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	78	380	Inbound trip estimate based on ITE in/out trips (i.e., 17% of every 100 are inbound)
Drive alone and park in vicinity and TNC/Bike to site		622	TNC vehicles likely to already be within study area; hence not new trip, but added to dwys.
Carpool and park at site	90	441	Inbound trip estimate based on ITE in/out trips (i.e., 17% of every 100 are inbound)
Vanpool and park at site		36	Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	45	45	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	368	368	Single occupants. Each TNC creates two trip ends
Customers/Visitors	25	50	Assumes 100% of 50 visitor spaces are emptied, and 50% are refilled
Service/Utility/Delivery	5	15	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
TOTAL	611	1957	

Employees leave work from 4:30 to 5:30 PM	62.30%	Vehicular Trip Generation Rates	Per	PM Peak Hour
Carpool Average Vehicle Occupancy=	2.07		KSF	1.87
Average occupancy of vanpools =	6		Employee	0.43

DAILY VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	610	610	
Drive alone and park in vicinity and TNC/Bike to site	999	999	
Carpool and park at site	707	707	
Vanpool and park at site	58	58	Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	143	143	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	1181	1181	Single occupants. Each TNC creates two trip ends
Customers/Visitors	200	200	Based on average number of visitors per day for relocated departments
Service/Utility/Delivery	100	100	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
Mid-Day Employee Work Travel	325	325	Based on survey of frequency of off-site travel during workday
Mid-Day Employee Person Travel	450	450	Assumes one-third of parked vehicles are used for mid-day person errands (e.g., lunch, etc.).
TOTAL	4774	4774	

Carpool Average Vehicle Occupancy=	2.07	Vehicular Trip Generation Rates	Per	Daily
Average occupancy of vanpools =	6		KSF	6.94
			Employee	1.59

INITIAL MODE OF TRAVEL TO RICHARDS OFFICE BUILDING

5,853 = Total Employees

	Mode Split	Persons traveling by mode
Drive alone and park at site	66.97%	3920
Drive alone and park in vicinity and TNC/Bike to site	3.48%	204
Carpool and park at site	11.00%	644
Vanpool and park at site	0.94%	55
Bus	4.16%	244
Light rail to site	9.93%	581
Light rail to Downtown and Uber/Lyft/Bike to site	1.15%	67
Capitol Corridor	0.43%	25
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.20%	11
Bicycle/Bikeshare	1.61%	94
Walk	0.13%	8
	TOTAL	5853

Employee total considers percentage of employees that are full (90%) vs. part-time (10%), with an estimated 75% of part time employees being present on site during a mid-week day.

ITERATION 1 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (SHIFT AWAY FROM SOV PARKING AT SITE DUE TO LIMITED SUPPLY)

5,853 = Total Full Time Employee Equivalents

3,310 = SOVs redistributed

	Mode Split	Initial Persons by mode	Redistributed SOV's	Redistributed Person Trips	
Drive alone and park at site	66.97%	3920	0.00%	610	10.42%
Drive alone and park in vicinity and TNC/Bike to site	3.48%	204	26.74%	1089	18.60%
Carpool and park at site	11.00%	644	24.80%	1464	25.02%
Vanpool and park at site	0.94%	55	6.04%	255	4.36%
Bus	4.16%	244	12.90%	670	11.45%
Light rail to site	9.93%	581	20.54%	1261	21.55%
Light rail to Downtown and Uber/Lyft/Bike to site	1.15%	67	1.55%	119	2.03%
Capitol Corridor	0.43%	25	1.44%	73	1.25%
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.20%	11	3.45%	125	2.14%
Bicycle/Bikeshare	1.61%	94	2.11%	164	2.81%
Walk	0.13%	8	0.42%	22	0.37%
	TOTAL	5853		5853	

ITERATION 1 - ON-SITE PARKING DEMAND

SOVs	610	
Carpools	707	
Vanpools	55	Demand based on redistributed modes
Total	1372	CONTROL TOTAL TO MATCH 1370

ITERATION 1 - OFF-SITE PARKING DEMAND

Peak Parking Demand 1089

ITERATION 2 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (BUS MODE CAPPED AT 4%)

5,853 = Total Full Time Employee Equivalents

436 = Bus riders redistributed

	Iter. 1 - Persons by mode	Redistributed BUS	Redistributed Person Trips
Drive alone and park at site	610	0.00%	610
Drive alone and park in vicinity and TNC/Bike to site	1089	0.00%	1089
Carpool and park at site	1464	0.00%	1464
Vanpool and park at site	255	17.94%	334
Bus	670	-	234
Light rail to site	1261	60.96%	1527
Light rail to Downtown and Uber/Lyft/Bike to site	119	4.61%	139
Capitol Corridor	73	0.00%	73
Ridehailing Service (e.g., Uber, Lyft, etc.)	125	10.23%	170
Bicycle/Bikeshare	164	6.26%	192
Walk	22	0.00%	22
TOTAL	5853		5853

Note: Redistributed bus travel assumed to proportionally be filled by vanpool and park at site, light rail to site, light rail to Downtown, Capitol Corridor, Ridehailing, and Bike. Bus cap of 4% based on current overall level of 6% bus usage for relocated employees, with additional consideration given for lack of commuter bus service to project site. Additionally, 12% of employees reside in zip codes served by three bus routes that serve project site.

ITERATION 2 - ON-SITE PARKING DEMAND

SOVs	610	
Carpools	707	
Vanpools	55	Demand based on redistributed modes
Total	1372	CONTROL TOTAL TO MATCH 1370

ITERATION 2 - OFF-SITE PARKING DEMAND

Peak Parking Demand 1089

ITERATION 3 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (OFF-SITE PARKING MATCHED TO CONTROL TOTAL)

5,853 = Total Full Time Employee Equivalents

90 = SOV off-site parkers redistributed

	Iter. 2 - Persons by mode	Redistributed Off-Site SOV	Redistributed Person Trips	
Drive alone and park at site	610	0.00%	610	10%
Drive alone and park in vicinity and TNC/Bike to site	1089	-	999	17%
Carpool and park at site	1464	0.00%	1464	25%
Vanpool and park at site	334	17.94%	350	6%
Bus	234	0.00%	234	4%
Light rail to site	1527	60.96%	1582	27%
Light rail to Downtown and Uber/Lyft/Bike to site	139	4.61%	143	2%
Capitol Corridor	73	0.00%	73	1%
Ridehailing Service (e.g., Uber, Lyft, etc.)	170	10.23%	179	3%
Bicycle/Bikeshare	192	6.26%	197	3%
Walk	22	0.00%	22	0%
TOTAL	5853		5853	

Note: Redistributed off-site SOV travel assumed to proportionally be filled by vanpool and park at site, light rail to site, light rail to Downtown, Capitol Corridor, Ridehailing, and Bike.

ITERATION 3 - ON-SITE PARKING DEMAND

SOVs	610	0.462944
Carpools	707	0.537056
Vanpools	55	Demand based on redistributed modes
Total	1372	CONTROL TOTAL TO MATCH 1370

ITERATION 3 - OFF-SITE PARKING DEMAND

Peak Parking Demand 999 CONTROL TOTAL TO MATCH 1000

Note: Control total based on 180 on-street spaces within Railyards SP, 600 assumed available spaces in new parking garage on 5th St, and 220 available spaces north of Richards Blvd.

ITERATION 4 - MODIFIED MODE OF TRAVEL TO RICHARDS OFFICE BUILDING (LIGHT RAIL USE CAPPED AT 20% and 0% PRIMARY RIDEHAILING)

5,853 = Total Full Time Employee Equivalents

411 = SOV off-site parkers ı OLD #

		Iter. 3 - Persons by mode	Redistributed Light Rail	Redistributed Person Trips	
Drive alone and park at site	610	610	0.00%	883	15.09%
Drive alone and park in vicinity and TNC/Bike to site	999	999	0.00%	999	17.06%
Carpool and park at site	1464	1464	0.00%	1782	30.44%
Vanpool and park at site	350	350	0.00%	350	5.97%
Bus	234	234	0.00%	234	4.00%
Light rail to site	1171	1582	-	1171	20.00%
Light rail to Downtown and Uber/Lyft/Bike to site	143	143	0.00%	143	2.45%
Capitol Corridor	73	73	0.00%	73	1.25%
Ridehailing Service (e.g., Uber, Lyft, etc.)	591	179	100.00%	0	0.00%
Bicycle/Bikeshare	197	197	0.00%	197	3.37%
Walk	22	22	0.00%	22	0.37%
TOTAL		5853		5853	

ITERATION 4 - ON-SITE PARKING DEMAND

SOVs	883	
Carpools	861	
Vanpools	62	Demand based on redistributed modes
Total	1806	CONTROL TOTAL TO MATCH 1370

NET INCREASE NEEDED TO ELIMINATE RIDEHAIL TRIPS

436

ITERATION 4 - OFF-SITE PARKING DEMAND

Peak Parking Demand 999 CONTROL TOTAL TO MATCH 1000

Note: Control total based on 180 on-street spaces within Railyards SP, 600 assumed available spaces in new parking garage on 5th St, and 220 available spaces north of Richards Blvd.

AM PEAK HOUR VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	404	66	Outbound trip estimate based on ITE in/out trips (i.e., 14% of every 100 are outbound)
Drive alone and park in vicinity and TNC/Bike to site	456		TNC vehicles likely to already be within study area; hence not new trip, but added to dwys.
Carpool and park at site	393	64	Outbound trip estimate based on ITE in/out trips (i.e., 14% of every 100 are outbound)
Vanpool and park at site	27		Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	33	33	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	0	0	Single occupants. Each TNC creates two trip ends
Customers/Visitors	13	6	Assumes 25% of 50 visitor spaces become occupied during AM peak hour
Service/Utility/Delivery	15	5	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
TOTAL	1341	173	

Employees arrive at work from 7:15 to 8:15 AM	45.70%	Vehicular Trip Generation Rates	Per	AM Peak Hour
Carpool Average Vehicle Occupancy=	2.07		KSF	1.10
Average occupancy of vanpools =	6		Employee	0.25

595.9561724

PM PEAK HOUR VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	113	550	Inbound trip estimate based on ITE in/out trips (i.e., 17% of every 100 are inbound)
Drive alone and park in vicinity and TNC/Bike to site		622	TNC vehicles likely to already be within study area; hence not new trip, but added to dwys.
Carpool and park at site	110	536	Inbound trip estimate based on ITE in/out trips (i.e., 17% of every 100 are inbound)
Vanpool and park at site		36	Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	45	45	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	0	0	Single occupants. Each TNC creates two trip ends
Customers/Visitors	25	50	Assumes 100% of 50 visitor spaces are emptied, and 50% are refilled
Service/Utility/Delivery	5	15	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
TOTAL	297	1855	

Employees leave work from 4:30 to 5:30 PM	62.30%	Vehicular Trip Generation Rates	Per	PM Peak Hour
Carpool Average Vehicle Occupancy=	2.07		KSF	1.56
Average occupancy of vanpools =	6		Employee	0.36

PROPOSED PROJECT TOTALS

AM PK HR				
In	OUT			
1415.702412	412	1827.321		
PM PK HR				
In	OUT			
610.6300343	1957	2567.399		

INCREASED PARKING TOTAL

AM PK HR			
In	OUT		
1340.773807	173	1514.226	313.0952407
PM PK HR			
In	OUT		
297	1855	2151.747	415.6521863

DAILY VEHICLE TRIP GENERATION

	Inbound Vehicle Trips	Outbound Vehicle Trips	Notes
Drive alone and park at site	883	883	
Drive alone and park in vicinity and TNC/Bike to site	999	999	
Carpool and park at site	861	861	
Vanpool and park at site	58	58	Vanpools assumed to park on-site
Light rail to Downtown and Uber/Lyft/Bike to site	143	143	50% assumed to use a TNC
Ridehailing Service (e.g., Uber, Lyft, etc.)	0	0	Single occupants. Each TNC creates two trip ends
Customers/Visitors	200	200	Based on average number of visitors per day for relocated departments
Service/Utility/Delivery	100	100	Includes FedEx, UPS, Linen supplies, cleaning, food, shredding, furniture, security, etc.
Mid-Day Employee Work Travel	325	325	Based on survey of frequency of off-site travel during workday
Mid-Day Employee Person Travel	450	450	Assumes one-third of parked vehicles are used for mid-day person errands (e.g., lunch, etc.).
TOTAL	4019	4019	

Carpool Average Vehicle Occupancy=	2.07	Vehicular Trip Generation Rates	Per	Daily
Average occupancy of vanpools =	6		KSF	5.85
			Employee	1.34

FEHR & PEERS

FINAL TECHNICAL MEMORANDUM

Date: January 17, 2019

To: Stephanie Coleman – DGS
Elizabeth Boyd & Christina Erwin - ESA

From: John Gard – Fehr & Peers

Subject: ***Richards Boulevard Office Complex Trip Generation Estimates***

RS18-3723

This memorandum presents the expected trip generation of the proposed Richards Boulevard Office Complex ("proposed project"). The DEIR's transportation chapter will include a more robust discussion of analysis methods. We request that this brief memo be reviewed, and any comments or questions be provided to us no later than close of business on Thursday, January 10, 2019.

Project Description

For analysis purposes, the proposed project would consist of 6,000 employees and 1,375,000 gross square feet of office floor space (including space for employees as well as on-site amenities). The site would provide 1,420 parking spaces, including 50 spaces being designated for visitors/customers.

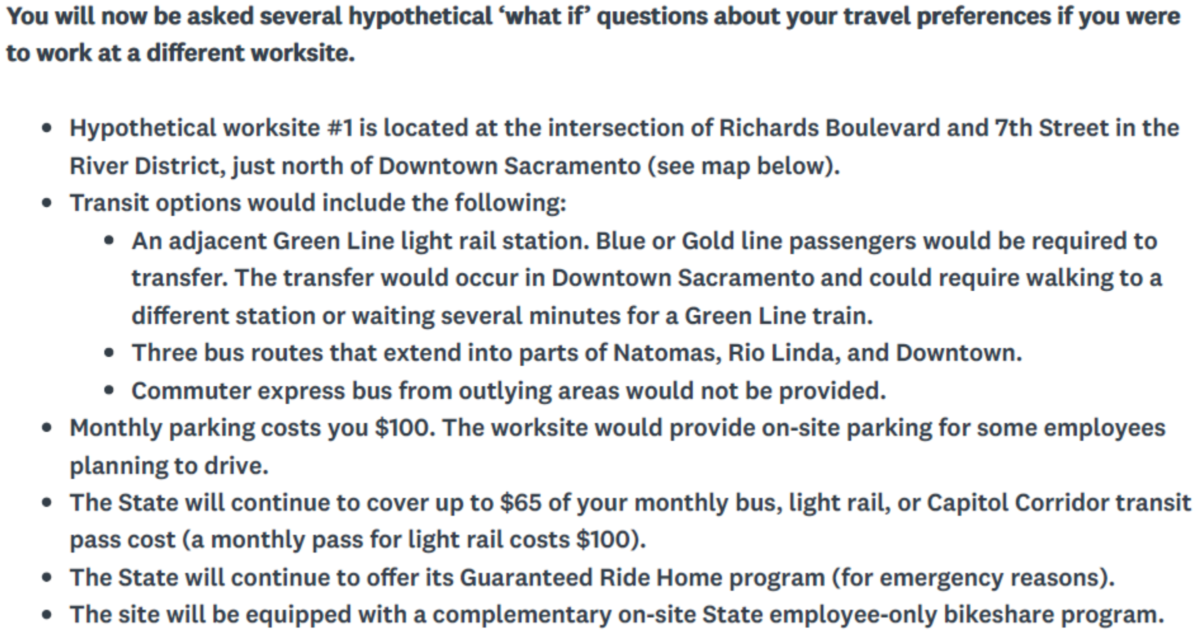
Approach

The project's unique physical characteristics and surrounding transportation conditions necessitated a tailored approach for estimating its trip generation that did not rely upon nationally-developed trip rates from the *Trip Generation Manual* (Institute of Transportation Engineers, 2017). Thus, questions contained in an online employee commute survey formed the basis of the project trip generation estimates, and the resulting vehicle trips and trip rates were compared against applicable trip rates from the *Trip Generation Manual* for general reasonableness.

Overview of Analysis Methodology

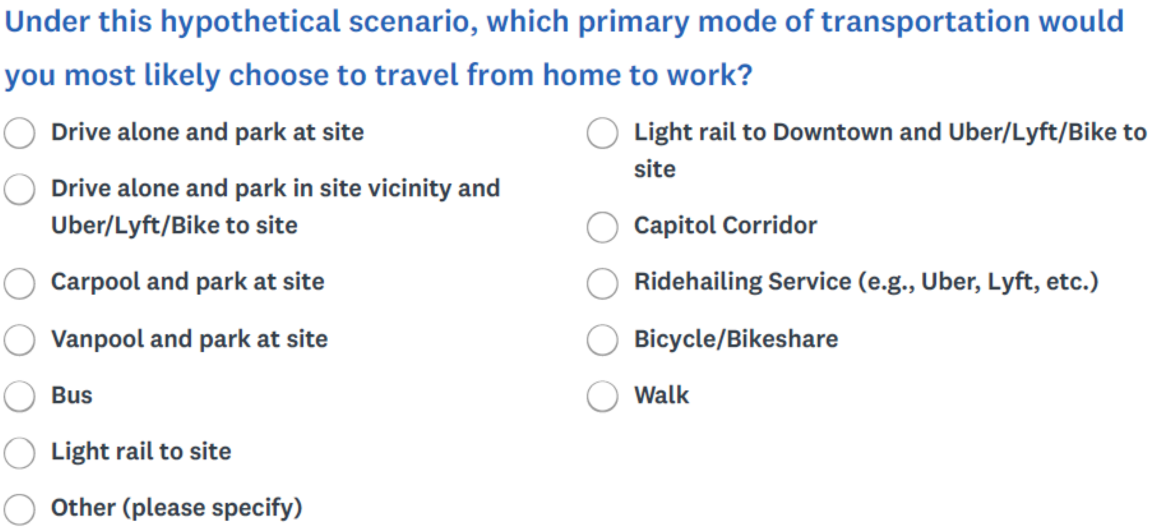
Due to the proposed project's size, employee density, supply of parking, and types of available travel modes in its vicinity, a decision was made to survey existing employees that work at State agencies and departments in the Sacramento region, with a focus on those agencies planned for relocation to the new office complex. This online survey, which was administrated in December 2018 and January 2019, was completed by 2,038 of the approximately 6,400 employees that were surveyed, which represents a 32 percent response rate.

Appendix A summarizes the key survey questions targeted toward understanding travel behavior and responses received in the survey. Employees were asked what travel mode they currently use to get to work, and what mode of travel they would choose if they instead worked at three different hypothetical worksites. As shown below, the first hypothetical worksite was the proposed project site.



You will now be asked several hypothetical 'what if' questions about your travel preferences if you were to work at a different worksite.

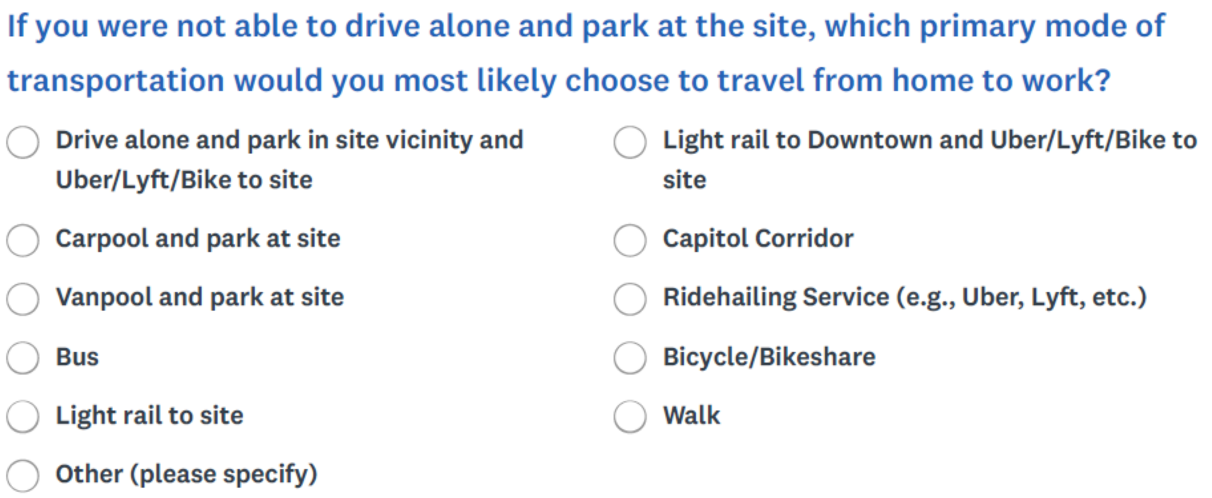
- Hypothetical worksite #1 is located at the intersection of Richards Boulevard and 7th Street in the River District, just north of Downtown Sacramento (see map below).
- Transit options would include the following:
  - An adjacent Green Line light rail station. Blue or Gold line passengers would be required to transfer. The transfer would occur in Downtown Sacramento and could require walking to a different station or waiting several minutes for a Green Line train.
  - Three bus routes that extend into parts of Natomas, Rio Linda, and Downtown.
  - Commuter express bus from outlying areas would not be provided.
- Monthly parking costs you $100. The worksite would provide on-site parking for some employees planning to drive.
- The State will continue to cover up to $65 of your monthly bus, light rail, or Capitol Corridor transit pass cost (a monthly pass for light rail costs $100).
- The State will continue to offer its Guaranteed Ride Home program (for emergency reasons).
- The site will be equipped with a complementary on-site State employee-only bikeshare program.



Under this hypothetical scenario, which primary mode of transportation would you most likely choose to travel from home to work?

○ Drive alone and park at site
○ Drive alone and park in site vicinity and Uber/Lyft/Bike to site
○ Carpool and park at site
○ Vanpool and park at site
○ Bus
○ Light rail to site
○ Other (please specify)
○ Light rail to Downtown and Uber/Lyft/Bike to site
○ Capitol Corridor
○ Ridehailing Service (e.g., Uber, Lyft, etc.)
○ Bicycle/Bikeshare
○ Walk

For those respondents that indicated that they would drive alone and park at the project site, the following question was then posed:



If you were not able to drive alone and park at the site, which primary mode of transportation would you most likely choose to travel from home to work?

- ○ Drive alone and park in site vicinity and Uber/Lyft/Bike to site
- ○ Carpool and park at site
- ○ Vanpool and park at site
- ○ Bus
- ○ Light rail to site
- ○ Other (please specify)
- ○ Light rail to Downtown and Uber/Lyft/Bike to site
- ○ Capitol Corridor
- ○ Ridehailing Service (e.g., Uber, Lyft, etc.)
- ○ Bicycle/Bikeshare
- ○ Walk

The above two questions were complemented by several other travel behavior questions relating to typical work arrival and departure times, carpool vehicle occupancy, and stated preference questions regarding strategies that would discourage/encourage certain modes of travel.

The following specific factors associated with the proposed project and surrounding site vicinity would influence the project's travel characteristics:

- <u>On-Site Parking Supply</u> – The proposed on-site parking supply (one space for every 4.4 employees) suggests that not all employees who may wish to park on-site would be able to do so. The above survey question addresses how the project's proposed parking supply would influence travel mode.
- <u>Off-Site Parking Supply</u> – Field surveys were performed to identify locations where off-site parking by employees could occur. Approximately 1,000 off-site spaces (generally located within ½ to ¾ of a mile of the project) are expected to be available in the near-term to accommodate employee parking demand associated with the project.
- <u>Bus Mode Split</u> – The project site is served by three Sacramento Regional Transit (SacRT) bus routes from parts of Natomas, Del Paso Heights, Rio Linda, and Downtown Sacramento. According to the survey, about 12 percent of relocated employees indicated that their home residence is in one of the eight ZIP codes served by these routes. Unlike Downtown Sacramento, commuter bus service from the greater Sacramento region (e.g., Placer County Transit, e-Tran, Yuba-Sutter Transit, etc.) is not provided to the project site or immediate vicinity. The survey found that 6 percent of employees currently use the bus to commute to

work. The percentage of employees who indicated that they would use the bus for their work commute to and from the proposed project site decreased to 4 percent. However, when the respondents who indicated that they would drive alone and park at the project site were informed (via the survey) that they could not travel to the project site in that manner, the percentage of employees who indicated that they would use the bus for their work commute increased back to 6 percent. Despite the survey responses, due to the limited geographic coverage, frequency, and capacity of bus service available near the site, the bus mode split was capped at 4 percent for analysis of the proposed project.

- Light Rail Mode Split – With on-site parking, off-site parking, and access to the site by bus at capacity or capped, access to the site by light rail became an attractive means for accommodating the remaining employees who could not be served by these other modes. However, initial estimates of light rail mode split exceeded 25 percent, which is twice the level of existing transit use for Downtown State office employees. Therefore, it was concluded that light rail usage should be capped at 20 percent. This level of usage is considered reasonable because SacRT has the flexibility to increase the number of cars per train on the Green Line (which stops at the project site) in response to increased demand. Additionally, a new light rail station is planned along the Blue Line on 16th Street near Richards Boulevard, which would be about ¾ of a mile from the site.

Given the lack of any other available viable travel modes, the initially estimated excess amount of light rail riders would be expected to instead rely on ridehailing (i.e., Transportation Network Companies such as Uber or Lyft) to access the proposed project. Some of the most heavily cited employee home residence ZIP codes are situated in close proximity to the site, which could enable some employees to use Uber or Lyft to travel from home to work. Alternatively, some may choose to drive to/from their residence to an intermediate location (e.g., park-and-ride lot) and then use ridehailing for their "first/last mile" of travel to the project site.

The effect of travel to and from a destination via a TNC is that each pick-up and drop-off generates two trip ends (e.g., the inbound morning peak hour trip to drop-off an employee immediately followed by an empty trip leaving the site).

Table 1 shows the existing (i.e., to their current worksite) mode split of employees likely to relocate. This table also shows the mode split of an iterative process, in which various modal or parking capacity constraints, resulted in changes in employee mode split. Refer to Appendix A for detailed calculations.

TABLE 1
RICHARDS BOULEVARD OFFICE COMPLEX - EMPLOYEE MODE SPLIT

Mode of Travel	Existing Employee Split [1]	Proposed Project		
		Initial Employee Mode Split Preference [2]	Adjusted Employee Mode Split Preference (Based on Proposed On-Site Parking Supply) [3]	Final Employee Mode Splits [4]
Drive alone and park at site	76.4%	67.0%	10.4%	10.4%
Drive alone and park in vicinity and TNC/Bike to site	N / A	3.5%	18.8%	17.1%
Carpool and park at site	11.4%	11.0%	25.0%	25.0%
Vanpool and park at site	0.4%	0.9%	4.4%	6.0%
Bus	6.0%	4.2%	11.5%	4.0%
Light rail to site	4.0%	9.9%	21.6%	20.0%
Light rail to Downtown and Uber/Lyft/Bike to site	N / A	1.2%	2.0%	2.5%
Capitol Corridor	0.1%	0.4%	1.3%	1.3%
Ridehailing Service (e.g., Uber, Lyft, etc.)	0.1%	0.2%	2.1%	10.1%
Bicycle/Bikeshare	0.9%	1.6%	2.8%	3.4%
Walk	0.7%	0.1%	0.4%	0.4%
Number of Vehicle Trips per 100 Person Trips [5]	82	79	50	66

Notes:

[1] Based on online survey of existing travel modes by employees that would relocate to Richards Boulevard Office Complex.

[2] Represents the initial commute travel mode preferences of relocated employees without any limitations.

[3] Represents modified employee commute mode preferences due solely to the proposed on-site parking supply. Resulting on-site parking (both drive alone and carpool) results in effective full utilization of on-site parking facilities and excess demand for parking instead substituted by other modes.

[4] Final mode split builds upon initial mode split adjustments by considering effects of available off-site parking supply and bus and light rail mode split caps (see previous page text).

[5] This is a measure of relative transportation efficiency across different mode split estimates. Fewer vehicle trips per hundred person trips implies a more transportation efficient mode split.

SOURCE: Fehr & Peers, 2019.

Table 1 indicates that relocated employees would have substantially different travel modes than today for the reasons described below.

- The majority of relocated employees currently work in suburban settings. Among the more than three-quarters of relocated employees that currently drive alone and park, the vast majority park on-site for free. In contrast, the proposed project would have paid parking that is highly sought after. In fact, to accommodate the total number of employees willing to carpool (if not permitted to drive alone and park on-site), more than half of the site's on-site parking should be reserved for carpools.

- The number of employees that would choose to park off-site and walk, Uber/Lyft, or take some other form of transportation to the site would also be substantial, creating an off-site parking demand of nearly 1,000 spaces (in areas located within ¾ of a mile from the site).

Trip Generation Estimates

Table 2 displays the project's estimated weekday AM peak hour, PM peak hour, and daily vehicular trip generation. These trips represent the total number of vehicles that would enter/exit the study area (i.e., area generally bounded by Interstate 5 on the west, the American River on the north, SR 160 on the east, and the UPRR railroad tracks on the south). Vehicle trips entering/exiting the project site would be somewhat lower because only a limited number of employees could park on-site.

These estimates apply only to the baseline plus project scenario. A different trip generation estimate will be prepared for cumulative conditions that considers planned transit service expansion as well as new planned parking facilities in the site vicinity.

TABLE 2
RICHARDS BOULEVARD OFFICE COMPLEX – VEHICULAR TRIP GENERATION

Land Use	Employees	Square Feet (ksf)	Trips [1]								
			Daily			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Office Complex	6,000	1,375	4,774	4,774	9,547	1,416	412	1,827	611	1,957	2,567

Notes:

[1] Refer to prior text and Appendix A for detailed calculations. As shown in appendix, these totals comprise trips made by employees (both primary commute and mid-day), visitors/customers, and other ancillary travel purposes.

SOURCE: Fehr & Peers, 2019.

This table indicates the proposed project would generate 1,827 AM peak hour vehicle trips, 2,567 PM peak hour vehicle trips, and 9,547 daily vehicle trips.

Table 3 compares the trip rates for the proposed project (using data from Table 2) against applicable trip rates for office buildings contained in the *Trip Generation Manual*.

TABLE 3
RICHARDS BOULEVARD OFFICE COMPLEX – VEHICULAR TRIP GENERATION RATE COMPARISON

Independent Variable		Vehicular Trip Rates (In/Out Combined) [1]								
		Daily			AM Peak Hour			PM Peak Hour		
		Employee Survey [2]	ITE	% Change	Employee Survey [2]	ITE	% Change	Employee Survey [2]	ITE	% Change
Employees	6,000	1.59	2.28	-30.3%	0.30	0.27	+11.1%	0.43	0.30	+43.3%
KSF	1,375	6.94	6.0	+15.7%	1.33	1.08	+23.1%	1.87	1.09	+71.6%

Notes:

[1] Vehicle trip rates expressed as trips per employee or trips per KSF. Refer to prior text and Appendix A for detailed calculations.

[2] Employee survey results derived from Table 2 by dividing vehicle trips for each time period against independent variable.

[3] Trip rates from ITE's *Trip Generation Manual* (2017) uses filtering (from online webapp) based on General Office Building (LU Code 710) for Urban/Suburban Areas. Data are further filtered to only use data points with higher levels of building size and square footage.

KSF = Thousand Square Feet

SOURCE: Fehr & Peers, 2019.

The following key conclusions are drawn from this table:

1. AM Peak Hour – The project's trip generation rate (when expressed in terms of employees) is 11 percent greater than ITE's corresponding trip rate. A portion of this increase is attributable to the assumed use of TNCs due to full on-site/nearby parking and capped usage of bus and light rail modes. Each employee transported by a TNC generates both an inbound and outbound trip.

2. PM Peak Hour – The project's trip generation rate (when expressed in terms of employees) is 43 percent greater than ITE's corresponding trip rate. In addition to added trips associated with TNCs, this result is also influenced by 62 percent of all employees departing during this peak

hour (based on the survey results). This percentage is much higher than for the office buildings contained in the ITE database.

3. Daily – The project's trip generation rate (when expressed in terms of employees) is 30 percent lower than ITE's corresponding trip rate. This result may seem counterintuitive given the above results, but may be explained by the following:

    a. The greater AM and PM peak hour rates are influenced by peaks in arriving and departing State employees during those periods. In contrast, daily conditions, by definition, incorporate all travel, and not just the AM and PM peaks.
    b. The proposed project would benefit from greater usage of non-auto travel modes when compared to ITE rates.
    c. Surveyed State employees that would relocated indicated relatively infrequent levels of traveling off-site by private vehicle for work purposes during the workday. Hence, off-peak / mid-day travel may be less than ITE rates for a typical office building.

Lastly, the use of employees as the independent variable (to predict trips) is considered more accurate than KSF for this project. This is because the proposed project's relatively high employee density (i.e., 24 percent denser in terms of employees per thousand square feet than the data points in ITE's *Trip Generation Manual*) ensures that comparisons using KSF will lead to the proposed project having much higher trip rates (because its trip generation was derived from its employees, and not square footage).

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Existing Conditions
AM Peak Hour

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	608	598	98.4%	28.2	1.8	C
	Through	11	12	112.7%	26.4	10.0	C
	Right Turn	413	404	97.9%	9.2	1.3	A
	Subtotal	1,032	1,015	98.4%	20.7	1.0	C
EB	Left Turn						
	Through	279	296	106.2%	23.8	4.0	C
	Right Turn	47	55	116.6%	1.3	0.4	A
	Subtotal	326	351	107.7%	20.3	3.8	C
WB	Left Turn	330	301	91.3%	17.7	4.4	B
	Through	163	158	96.7%	7.9	1.5	A
	Right Turn						
	Subtotal	493	459	93.1%	14.4	3.2	B
Total		1,851	1,825	98.6%	19.1	1.4	B

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	36	40	110.0%	24.4	7.9	C
	Through	2	2	120.0%	12.6	20.8	B
	Right Turn	799	765	95.8%	16.8	1.4	B
	Subtotal	837	807	96.4%	17.2	1.3	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	177	181	102.1%	26.5	4.9	C
	Through	710	698	98.4%	9.0	1.9	A
	Right Turn						
	Subtotal	887	879	99.1%	12.7	2.0	B
WB	Left Turn						
	Through	457	412	90.2%	12.2	2.0	B
	Right Turn	410	391	95.4%	2.3	0.1	A
	Subtotal	867	804	92.7%	7.4	1.3	A
Total		2,591	2,490	96.1%	12.4	1.2	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Existing Conditions
AM Peak Hour

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	79	83	104.8%	21.4	4.2	C
	Through	10	8	84.0%	24.5	15.5	C
	Right Turn	6	6	93.3%	3.1	4.2	A
	Subtotal	95	97	101.9%	20.9	4.3	C
SB	Left Turn	32	29	91.3%	28.1	5.2	C
	Through	9	9	102.2%	18.9	10.0	B
	Right Turn	98	95	96.7%	5.4	0.8	A
	Subtotal	139	133	95.8%	11.4	2.0	B
EB	Left Turn	105	104	99.4%	19.3	3.8	B
	Through	1,188	1,156	97.3%	11.4	2.3	B
	Right Turn	216	217	100.6%	2.5	0.2	A
	Subtotal	1,509	1,478	97.9%	10.7	2.0	B
WB	Left Turn	16	14	90.0%	28.2	10.2	C
	Through	690	617	89.4%	14.5	1.6	B
	Right Turn	15	14	90.7%	12.0	8.3	B
	Subtotal	721	645	89.5%	14.8	1.6	B
Total		2,464	2,353	95.5%	12.2	1.7	B

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	28	34	121.4%	36.2	6.5	D
	Through	1	0	40.0%	3.0	9.6	A
	Right Turn	5	6	112.0%	4.0	5.7	A
	Subtotal	34	40	117.6%	31.8	4.5	C
SB	Left Turn	8	7	85.0%	36.4	24.7	D
	Through	1	1	80.0%	14.6	31.1	B
	Right Turn	22	21	96.4%	6.4	3.8	A
	Subtotal	31	29	92.9%	16.9	7.5	B
EB	Left Turn	39	37	94.4%	40.3	12.6	D
	Through	1,077	1,088	101.1%	13.1	2.1	B
	Right Turn	110	104	94.5%	9.8	2.9	A
	Subtotal	1,226	1,229	100.3%	13.6	2.1	B
WB	Left Turn	20	13	64.0%	19.5	9.1	B
	Through	670	583	87.0%	5.4	2.0	A
	Right Turn	37	31	84.3%	5.5	4.5	A
	Subtotal	727	627	86.3%	5.7	1.9	A
Total		2,018	1,925	95.4%	11.5	1.8	B

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	32	25	77.5%	38.0	8.1	D
	Through	7	8	108.6%	38.2	24.9	D
	Right Turn	25	22	89.6%	11.4	7.2	B
	Subtotal	64	55	85.6%	27.6	5.5	C
SB	Left Turn	6	6	106.7%	24.4	20.6	C
	Through	3	4	120.0%	24.8	26.9	C
	Right Turn	7	6	80.0%	3.3	3.3	A
	Subtotal	16	16	97.5%	22.3	17.6	C
EB	Left Turn	52	55	105.4%	34.5	5.5	C
	Through	1,021	996	97.6%	6.8	2.6	A
	Right Turn	17	15	87.1%	6.9	6.9	A
	Subtotal	1,090	1,066	97.8%	8.2	2.7	A
WB	Left Turn	27	26	94.8%	41.0	7.4	D
	Through	688	610	88.7%	9.2	3.1	A
	Right Turn	18	20	108.9%	9.1	6.3	A
	Subtotal	733	655	89.4%	10.5	3.1	B
Total		1,903	1,792	94.1%	9.8	2.7	A

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	5	2	48.0%	18.2	18.6	B
	Through						
	Right Turn	2	2	120.0%	3.6	6.4	A
	Subtotal	7	5	68.6%	9.0	12.7	A
SB	Left Turn	19	16	84.2%	39.3	8.9	D
	Through						
	Right Turn	41	42	101.5%	8.7	5.2	A
	Subtotal	60	58	96.0%	17.0	4.4	B
EB	Left Turn	56	51	91.4%	44.3	7.3	D
	Through	988	967	97.9%	5.9	2.2	A
	Right Turn	8	10	130.0%	4.2	4.9	A
	Subtotal	1,052	1,029	97.8%	7.7	2.1	A
WB	Left Turn	10	8	80.0%	31.6	19.9	C
	Through	687	617	89.8%	8.6	2.5	A
	Right Turn	18	17	93.3%	7.1	2.8	A
	Subtotal	715	642	89.8%	8.9	2.6	A
Total		1,834	1,733	94.5%	8.5	1.9	A

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	41	40	97.6%	46.0	11.7	D
	Through	49	46	94.7%	35.4	8.1	D
	Right Turn	98	86	88.2%	37.5	6.2	D
	Subtotal	188	173	91.9%	38.7	4.5	D
SB	Left Turn	13	10	76.9%	49.2	15.2	D
	Through	17	18	103.5%	59.1	12.8	E
	Right Turn	20	18	88.0%	48.0	13.2	D
	Subtotal	50	45	90.4%	52.2	8.1	D
EB	Left Turn	169	164	96.8%	49.6	6.9	D
	Through	750	776	103.5%	30.1	5.9	C
	Right Turn	90	90	100.0%	28.7	6.5	C
	Subtotal	1,009	1,030	102.1%	33.0	5.5	C
WB	Left Turn	320	283	88.5%	54.3	11.4	D
	Through	654	588	89.8%	26.0	5.9	C
	Right Turn	31	26	85.2%	22.5	13.4	C
	Subtotal	1,005	897	89.3%	35.0	7.3	C
Total		2,252	2,145	95.3%	34.7	4.9	C

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	23	21	92.2%	32.2	14.4	C
	Through	22	24	107.3%	33.3	10.7	C
	Right Turn	13	14	110.8%	5.1	2.5	A
	Subtotal	58	59	102.1%	28.1	7.1	C
SB	Left Turn	8	6	70.0%	36.0	30.0	D
	Through	3	2	80.0%	20.5	22.7	C
	Right Turn	28	35	125.7%	6.5	2.0	A
	Subtotal	39	43	110.8%	12.6	5.9	B
EB	Left Turn	104	117	112.3%	43.6	8.0	D
	Through	709	673	95.0%	10.6	1.2	B
	Right Turn	24	27	111.7%	7.0	0.9	A
	Subtotal	837	817	97.6%	15.3	2.4	B
WB	Left Turn	29	24	81.4%	34.7	12.9	C
	Through	994	833	83.8%	7.6	1.4	A
	Right Turn	49	39	79.2%	7.5	2.9	A
	Subtotal	1,072	896	83.5%	8.3	1.2	A
Total		2,006	1,815	90.5%	12.2	1.4	B

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	11	98.2%	36.5	21.4	D
	Through	6	9	153.3%	22.0	19.8	C
	Right Turn	10	12	120.0%	10.6	10.5	B
	Subtotal	27	32	118.5%	24.7	13.6	C
SB	Left Turn	84	79	93.8%	28.2	4.2	C
	Through	7	8	114.3%	20.6	13.8	C
	Right Turn	24	26	108.3%	18.9	6.5	B
	Subtotal	115	113	98.1%	26.2	3.5	C
EB	Left Turn	30	22	74.7%	41.6	15.4	D
	Through	678	656	96.8%	10.3	2.9	B
	Right Turn	22	20	90.9%	3.7	2.8	A
	Subtotal	730	698	95.7%	11.2	2.8	B
WB	Left Turn	28	22	78.6%	38.0	12.8	D
	Through	1,037	877	84.6%	7.6	1.8	A
	Right Turn	67	58	86.6%	7.0	2.7	A
	Subtotal	1,132	957	84.6%	8.3	1.8	A
Total		2,004	1,800	89.8%	10.9	1.7	B

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	76	74	96.8%	78.2	12.6	E
	Through	984	964	98.0%	23.2	2.9	C
	Right Turn	2	2	80.0%	0.2	0.2	A
	Subtotal	1,062	1,040	97.9%	27.1	2.5	C
SB	Left Turn						
	Through	2,415	2,276	94.2%	141.3	17.4	F
	Right Turn	1,126	1,044	92.7%	149.2	23.2	F
	Subtotal	3,541	3,320	93.8%	144.0	18.4	F
EB	Left Turn	666	630	94.6%	68.4	9.2	E
	Through						
	Right Turn	26	25	95.4%	5.5	1.5	A
	Subtotal	692	655	94.6%	65.9	8.6	E
WB	Left Turn	7	8	114.3%	50.5	45.3	D
	Through	0					
	Right Turn						
	Subtotal	7	8	120.0%			
Total		5,302	5,023	94.7%	109.4	11.5	F

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 11 **N 7th Street/Bannon St/Project Driveway** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		al Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	12	105.5%	5.0	3.0	A
	Through	182	169	93.0%	2.6	0.3	A
	Right Turn						
	Subtotal	193	181	93.7%	2.8	0.3	A
SB	Left Turn	2	2	100.0%	1.1	1.4	A
	Through	408	377	92.4%	2.1	0.4	A
	Right Turn	17	17	101.2%	1.6	0.9	A
	Subtotal	427	396	92.7%	2.1	0.4	A
EB	Left Turn	5	6	112.0%	4.9	4.9	A
	Through						
	Right Turn	3	3	93.3%	1.3	1.8	A
	Subtotal	8	8	105.0%	4.4	4.2	A
WB	Left Turn						
	Through						
	Right Turn	1	0	40.0%	0.2	0.5	A
	Subtotal	1	0	40.0%	0.2	0.5	A
Total		629	586	93.1%	2.3	0.3	A

Intersection 12 **N 7th Street/N B Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	16	15	95.0%	32.0	11.8	C
	Through	159	145	91.3%	32.9	9.0	C
	Right Turn	75	68	90.1%	29.3	9.8	C
	Subtotal	250	228	91.2%	31.9	7.0	C
SB	Left Turn	21	16	78.1%	36.9	17.3	D
	Through	386	364	94.3%	38.5	8.2	D
	Right Turn	4	4	100.0%	16.4	11.8	B
	Subtotal	411	384	93.5%	38.3	7.5	D
EB	Left Turn	6	6	100.0%	19.8	19.1	B
	Through	80	73	91.5%	27.4	4.7	C
	Right Turn	92	92	100.4%	15.7	6.7	B
	Subtotal	178	172	96.4%	21.0	5.5	C
WB	Left Turn	205	193	94.0%	31.6	6.7	C
	Through	33	34	103.0%	40.6	15.8	D
	Right Turn	28	29	104.3%	23.0	10.2	C
	Subtotal	266	256	96.2%	31.8	7.2	C
Total		1,105	1,040	94.1%	32.5	5.2	C

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
WB	Left Turn	31	31	100.6%	42.7	8.7	D
	Through	86	95	110.7%	36.9	7.3	D
	Right Turn	22	25	112.7%	37.0	8.9	D
	Subtotal	139	151	108.8%	38.1	5.9	D
SB	Left Turn	2	3	140.0%	35.5	41.7	D
	Through						
	Right Turn	25	27	108.8%	35.8	6.4	D
	Subtotal	27	30	111.1%	36.8	8.6	D
EB	Left Turn						
	Through	154	137	88.8%	33.1	5.8	C
	Right Turn	22	19	87.3%	21.6	12.4	C
	Subtotal	176	156	88.6%	31.8	6.0	C
SW	Left Turn	18	10	55.6%	9.9	5.7	A
	Through	2,338	2,050	87.7%	14.7	3.5	B
	Right Turn	173	162	93.9%	22.7	6.5	C
	Subtotal	2,529	2,222	87.9%	15.2	3.7	B
Total		2,871	2,559	89.1%	17.8	3.3	B

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	10	100.0%	11.8	6.8	B
	Through	64	64	100.0%	17.6	2.8	B
	Right Turn						
	Subtotal	74	74	100.0%	17.1	2.2	B
SB	Left Turn						
	Through	480	449	93.5%	27.7	5.9	C
	Right Turn	203	199	98.1%	22.0	5.9	C
	Subtotal	683	648	94.9%	26.0	5.9	C
EB	Left Turn	186	164	88.4%	16.1	2.6	B
	Through						
	Right Turn	107	100	93.8%	7.3	2.2	A
	Subtotal	293	265	90.4%	12.8	2.3	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,050	987	94.0%	21.8	4.1	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Existing Conditions
PM Peak Hour

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	339	326	96.3%	32.7	2.2	C
	Through	217	229	105.4%	39.5	4.9	D
	Right Turn	309	316	102.3%	8.9	1.1	A
	Subtotal	865	871	100.7%	25.8	2.3	C
EB	Left Turn						
	Through	675	613	90.8%	88.0	60.1	F
	Right Turn	51	49	95.7%	2.9	1.3	A
	Subtotal	726	662	91.1%	81.1	54.3	F
WB	Left Turn	614	622	101.4%	12.2	1.9	B
	Through	222	204	92.1%	4.9	0.8	A
	Right Turn						
	Subtotal	836	827	98.9%	10.4	1.4	B
Total		2,427	2,360	97.2%	35.3	14.6	D

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	48	50	105.0%	32.3	9.8	C
	Through	15	14	96.0%	34.8	16.9	C
	Right Turn	275	289	105.0%	8.9	1.1	A
	Subtotal	338	354	104.6%	13.5	1.9	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	451	397	88.0%	50.8	13.1	D
	Through	563	557	99.0%	2.3	0.4	A
	Right Turn						
	Subtotal	1,014	954	94.1%	22.3	4.6	C
WB	Left Turn						
	Through	788	761	96.6%	9.0	1.5	A
	Right Turn	969	882	91.0%	3.4	0.3	A
	Subtotal	1,757	1,643	93.5%	5.9	0.8	A
Total		3,109	2,950	94.9%	12.1	1.5	B

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	211	209	99.1%	39.7	8.8	D
	Through	16	14	87.5%	40.6	18.1	D
	Right Turn	22	20	89.1%	4.7	2.8	A
	Subtotal	249	243	97.5%	37.0	8.3	D
SB	Left Turn	31	29	94.2%	39.4	9.2	D
	Through	15	12	82.7%	42.1	18.2	D
	Right Turn	175	190	108.6%	17.6	7.1	B
	Subtotal	221	232	104.8%	21.3	6.0	C
EB	Left Turn	91	82	90.1%	29.0	5.5	C
	Through	633	658	104.0%	11.4	2.4	B
	Right Turn	114	123	108.1%	2.1	0.1	A
	Subtotal	838	864	103.1%	11.8	2.2	B
WB	Left Turn	10	6	64.0%	31.3	25.4	C
	Through	1,371	1,245	90.8%	52.7	5.9	D
	Right Turn	9	8	84.4%	62.6	21.7	E
	Subtotal	1,390	1,259	90.6%	52.6	5.8	D
Total		2,698	2,597	96.3%	34.8	2.8	C

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	101	94	92.7%	50.9	23.2	D
	Through	1	1	80.0%	3.1	6.5	A
	Right Turn	10	13	132.0%	5.3	4.6	A
	Subtotal	112	108	96.1%	46.0	22.6	D
SB	Left Turn	37	26	71.4%	36.1	11.9	D
	Through	2	1	60.0%	9.9	19.5	A
	Right Turn	27	31	115.6%	41.3	23.0	D
	Subtotal	66	59	89.1%	38.1	13.7	D
EB	Left Turn	29	24	81.4%	46.7	15.9	D
	Through	641	635	99.1%	12.5	2.1	B
	Right Turn	16	20	125.0%	9.1	4.6	A
	Subtotal	686	679	99.0%	13.6	2.0	B
WB	Left Turn	3	1	40.0%	4.4	10.6	A
	Through	1,257	1,098	87.4%	54.5	14.5	D
	Right Turn	12	9	73.3%	65.8	39.9	E
	Subtotal	1,272	1,108	87.1%	54.6	14.6	D
Total		2,136	1,953	91.4%	39.3	8.6	D

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	23	76.0%	41.2	9.6	D
	Through	2	2	120.0%	4.8	10.0	A
	Right Turn	38	44	115.8%	6.4	2.8	A
	Subtotal	70	69	98.9%	18.2	3.7	B
SB	Left Turn	21	20	97.1%	33.7	13.0	C
	Through	6	9	146.7%	31.5	21.8	C
	Right Turn	56	56	99.3%	19.7	7.2	B
	Subtotal	83	85	102.2%	25.0	6.6	C
EB	Left Turn	11	9	80.0%	38.9	23.9	D
	Through	657	633	96.3%	7.0	1.1	A
	Right Turn	20	20	102.0%	5.1	1.8	A
	Subtotal	688	662	96.2%	7.4	1.2	A
WB	Left Turn	12	8	66.7%	63.2	39.3	E
	Through	1,186	1,056	89.0%	46.9	29.9	D
	Right Turn	7	6	80.0%	50.5	53.6	D
	Subtotal	1,205	1,069	88.7%	47.1	29.8	D
Total		2,046	1,885	92.1%	30.5	16.0	C

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	13	9	67.7%	36.5	16.5	D
	Through						
	Right Turn	11	15	134.5%	6.3	2.4	A
	Subtotal	24	24	98.3%	17.7	7.4	B
SB	Left Turn	11	10	90.9%	34.9	19.2	C
	Through						
	Right Turn	77	78	101.3%	20.2	10.5	C
	Subtotal	88	88	100.0%	22.1	9.2	C
EB	Left Turn	20	16	78.0%	46.2	20.2	D
	Through	687	670	97.5%	3.7	1.3	A
	Right Turn	9	12	128.9%	3.7	3.0	A
	Subtotal	716	697	97.3%	4.6	1.3	A
WB	Left Turn	8	5	60.0%	52.3	46.3	D
	Through	1,115	1,049	94.1%	36.0	29.8	D
	Right Turn	3	2	66.7%	11.0	5.6	B
	Subtotal	1,126	1,056	93.7%	36.1	29.8	D
Total		1,954	1,864	95.4%	23.3	16.9	C

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	86	80	92.6%	42.1	5.6	D
	Through	14	14	97.1%	39.7	16.2	D
	Right Turn	281	292	104.1%	42.9	5.1	D
	Subtotal	381	386	101.2%	42.8	4.0	D
SB	Left Turn	68	61	90.0%	78.5	16.6	E
	Through	106	102	96.6%	57.0	12.9	E
	Right Turn	90	95	105.8%	62.3	11.0	E
	Subtotal	264	259	98.0%	64.0	10.6	E
EB	Left Turn	10	7	68.0%	107.8	62.5	F
	Through	609	599	98.4%	71.8	9.1	E
	Right Turn	90	83	92.4%	80.1	25.3	F
	Subtotal	709	689	97.2%	73.5	10.0	E
WB	Left Turn	241	229	94.9%	147.0	43.0	F
	Through	950	927	97.6%	64.5	18.1	E
	Right Turn	18	17	95.6%	67.5	19.4	E
	Subtotal	1,209	1,173	97.0%	81.1	22.3	F
Total		2,563	2,506	97.8%	71.1	9.9	E

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	28	93.3%	35.8	6.9	D
	Through	6	7	113.3%	29.0	23.0	C
	Right Turn	23	22	97.4%	9.3	4.0	A
	Subtotal	59	57	96.9%	26.0	3.5	C
SB	Left Turn	71	65	91.8%	33.4	4.4	C
	Through	43	41	94.9%	24.9	6.4	C
	Right Turn	124	132	106.8%	10.3	2.4	B
	Subtotal	238	238	100.2%	19.2	2.2	B
EB	Left Turn	24	28	118.3%	39.8	11.1	D
	Through	918	906	98.7%	11.1	2.4	B
	Right Turn	71	76	106.5%	7.9	1.9	A
	Subtotal	1,013	1,010	99.7%	11.6	2.0	B
WB	Left Turn	9	10	115.6%	35.3	14.5	D
	Through	1,014	975	96.2%	7.2	1.4	A
	Right Turn	12	9	76.7%	6.7	4.9	A
	Subtotal	1,035	995	96.1%	7.5	1.4	A
Total		2,345	2,301	98.1%	11.0	1.2	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Existing Conditions
PM Peak Hour

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	29	29	100.7%	29.3	10.0	C
	Through	10	8	80.0%	37.4	23.4	D
	Right Turn	25	27	107.2%	12.0	8.5	B
	Subtotal	64	64	100.0%	23.1	6.2	C
SB	Left Turn	29	24	81.4%	31.9	16.1	C
	Through	13	16	120.0%	35.1	14.0	D
	Right Turn	35	29	83.4%	19.7	6.6	B
	Subtotal	77	68	88.8%	28.4	7.5	C
EB	Left Turn	17	17	101.2%	47.1	12.0	D
	Through	988	969	98.1%	11.3	3.0	B
	Right Turn	7	4	51.4%	2.2	2.1	A
	Subtotal	1,012	990	97.8%	11.9	2.7	B
WB	Left Turn	15	14	90.7%	35.9	11.7	D
	Through	971	965	99.4%	5.4	2.0	A
	Right Turn	10	12	120.0%	3.3	3.3	A
	Subtotal	996	991	99.5%	5.9	1.9	A
Total		2,149	2,113	98.3%	9.9	1.4	A

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	53	45	85.3%	134.2	35.3	F
	Through	3,635	3,608	99.2%	111.5	26.5	F
	Right Turn	6	4	60.0%	76.3	71.2	E
	Subtotal	3,694	3,656	99.0%	111.8	26.4	F
SB	Left Turn						
	Through	1,825	1,820	99.7%	33.9	2.6	C
	Right Turn	913	919	100.7%	25.1	3.1	C
	Subtotal	2,738	2,740	100.1%	31.0	2.4	C
EB	Left Turn	840	782	93.1%	117.6	36.1	F
	Through						
	Right Turn	92	96	103.9%	8.4	2.7	A
	Subtotal	932	878	94.2%	105.7	32.2	F
WB	Left Turn	6	6	100.0%	57.8	39.2	E
	Through	6	4	66.7%	58.7	38.4	E
	Right Turn	3	3	93.3%	13.6	26.3	B
	Subtotal	15	13	85.3%			
Total		7,379	7,286	98.7%	80.7	13.0	F

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 11 **N 7th Street/Bannon St/Project Driveway** **Side-street Stop**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	1	0	40.0%	1.7	5.3	A
	Through	360	357	99.2%	3.4	0.3	A
	Right Turn						
	Subtotal	361	358	99.1%	3.5	0.3	A
SB	Left Turn	3	1	40.0%	0.8	1.6	A
	Through	429	404	94.2%	10.5	19.2	B
	Right Turn	5	3	64.0%	0.6	0.9	A
	Subtotal	437	408	93.5%	10.4	19.2	B
EB	Left Turn	10	10	96.0%	6.3	7.4	A
	Through						
	Right Turn	17	13	77.6%	8.9	11.9	A
	Subtotal	27	23	84.4%	10.3	11.9	B
WB	Left Turn	4	5	120.0%	14.7	25.8	B
	Through						
	Right Turn	11	16	149.1%	3.7	1.8	A
	Subtotal	15	21	141.3%	7.6	9.0	A
Total		840	810	96.4%	6.8	8.6	A

Intersection 12 **N 7th Street/N B Street** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	86	78	91.2%	54.4	12.8	D
	Through	324	324	100.1%	56.2	11.5	E
	Right Turn	240	236	98.2%	53.7	9.4	D
	Subtotal	650	638	98.2%	55.2	10.7	E
SB	Left Turn	59	52	88.1%	128.4	65.1	F
	Through	379	347	91.5%	122.8	53.2	F
	Right Turn	12	10	86.7%	115.6	65.4	F
	Subtotal	450	409	90.9%	123.4	54.4	F
EB	Left Turn						
	Through	91	93	102.0%	41.3	6.3	D
	Right Turn	59	56	94.2%	24.5	6.1	C
	Subtotal	150	148	98.9%	34.9	5.3	C
WB	Left Turn	179	168	94.1%	114.0	47.2	F
	Through	76	67	87.9%	116.9	40.3	F
	Right Turn	37	34	93.0%	43.2	12.1	D
	Subtotal	292	270	92.3%	105.6	39.3	F
Total		1,542	1,466	95.0%	81.0	16.3	F

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
WB	Left Turn	43	40	92.1%	51.3	7.9	D
	Through	126	130	103.5%	33.2	5.9	C
	Right Turn	22	21	96.4%	32.0	12.6	C
	Subtotal	191	191	100.1%	37.0	5.9	D
SB	Left Turn	5	5	96.0%	43.5	34.8	D
	Through						
	Right Turn	35	30	84.6%	31.1	13.7	C
	Subtotal	40	34	86.0%	36.5	10.2	D
EB	Left Turn						
	Through	329	314	95.4%	33.3	4.9	C
	Right Turn	61	64	104.9%	27.2	6.1	C
	Subtotal	390	378	96.9%	32.2	3.6	C
SW	Left Turn	34	34	100.0%	12.3	1.9	B
	Through	1,681	1,727	102.7%	15.1	1.7	B
	Right Turn	160	151	94.5%	20.5	3.6	C
	Subtotal	1,875	1,912	102.0%	15.5	1.7	B
Total		2,496	2,516	100.8%	20.0	1.1	B

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn	52	54	103.1%	45.8	32.4	D
	Through	313	310	99.0%	44.6	19.6	D
	Right Turn						
	Subtotal	365	364	99.6%	44.9	21.5	D
SB	Left Turn						
	Through	293	272	92.8%	47.4	15.9	D
	Right Turn	324	289	89.1%	38.9	13.4	D
	Subtotal	617	561	90.9%	43.0	14.7	D
EB	Left Turn	337	334	99.0%	32.1	6.5	C
	Through						
	Right Turn	45	45	99.6%	8.0	3.2	A
	Subtotal	382	378	99.1%	29.2	6.1	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,364	1,303	95.5%	39.9	10.0	D

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	852	833	97.7%	52.0	22.0	D
	Through	11	10	94.5%	49.7	25.2	D
	Right Turn	473	482	101.9%	19.1	6.9	B
	Subtotal	1,336	1,325	99.2%	40.3	17.0	D
EB	Left Turn						
	Through	291	298	102.3%	23.6	3.6	C
	Right Turn	47	40	84.3%	1.3	0.2	A
	Subtotal	338	337	99.8%	21.1	3.5	C
WB	Left Turn	406	354	87.2%	30.2	3.9	C
	Through	209	190	90.7%	9.7	2.0	A
	Right Turn						
	Subtotal	615	544	88.4%	23.1	3.7	C
Total		2,289	2,206	96.4%	33.2	10.3	C

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	76	62	81.6%	127.9	46.1	F
	Through	2	3	140.0%	104.4	119.5	F
	Right Turn	1,165	966	83.0%	172.9	38.2	F
	Subtotal	1,243	1,031	83.0%	170.4	38.3	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	177	166	93.6%	31.3	0.8	C
	Through	966	991	102.6%	24.6	7.4	C
	Right Turn						
	Subtotal	1,143	1,157	101.2%	25.6	6.3	C
WB	Left Turn						
	Through	539	468	86.8%	17.5	2.5	B
	Right Turn	505	426	84.3%	2.5	0.2	A
	Subtotal	1,044	893	85.6%	10.4	1.6	B
Total		3,430	3,081	89.8%	69.6	13.9	E

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	79	73	92.7%	20.5	3.5	C
	Through	10	13	132.0%	23.5	6.1	C
	Right Turn	6	5	86.7%	8.0	8.7	A
	Subtotal	95	92	96.4%	20.1	2.7	C
SB	Left Turn	32	31	97.5%	27.4	7.4	C
	Through	9	9	97.8%	17.1	13.4	B
	Right Turn	98	91	93.1%	6.2	1.7	A
	Subtotal	139	131	94.4%	12.1	3.0	B
EB	Left Turn	105	108	103.2%	21.1	3.5	C
	Through	1,810	1,639	90.5%	14.4	1.9	B
	Right Turn	216	208	96.3%	2.5	0.2	A
	Subtotal	2,131	1,955	91.8%	13.5	1.7	B
WB	Left Turn	16	14	85.0%	34.0	18.7	C
	Through	867	720	83.0%	16.2	5.0	B
	Right Turn	15	12	82.7%	13.4	9.4	B
	Subtotal	898	746	83.0%	16.4	5.0	B
Total		3,263	2,924	89.6%	14.4	2.1	B

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	28	29	104.3%	44.2	8.9	D
	Through	1	1	80.0%	7.3	22.5	A
	Right Turn	5	4	80.0%	9.5	9.0	A
	Subtotal	34	34	100.0%	40.8	9.9	D
SB	Left Turn	8	10	125.0%	21.6	15.3	C
	Through	1	1	80.0%	8.5	18.8	A
	Right Turn	22	24	109.1%	7.1	2.8	A
	Subtotal	31	35	112.3%	13.0	4.1	B
EB	Left Turn	39	30	75.9%	41.3	8.6	D
	Through	1,699	1,553	91.4%	19.3	3.6	B
	Right Turn	110	111	100.7%	17.3	1.9	B
	Subtotal	1,848	1,693	91.6%	19.6	3.3	B
WB	Left Turn	20	12	62.0%	22.3	11.1	C
	Through	847	676	79.9%	4.9	1.4	A
	Right Turn	37	26	70.3%	5.0	2.3	A
	Subtotal	904	715	79.1%	5.2	1.4	A
Total		2,817	2,477	87.9%	15.6	2.4	B

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	32	38	117.5%	39.1	8.4	D
	Through	7	7	97.1%	37.4	32.1	D
	Right Turn	25	28	110.4%	16.1	5.3	B
	Subtotal	64	72	112.5%	30.7	4.8	C
SB	Left Turn	6	9	146.7%	36.9	21.1	D
	Through	3	2	66.7%	19.1	30.7	B
	Right Turn	7	6	91.4%	7.1	10.8	A
	Subtotal	16	17	107.5%	28.4	10.7	C
EB	Left Turn	52	48	91.5%	37.6	9.4	D
	Through	1,643	1,473	89.7%	12.2	2.7	B
	Right Turn	17	13	77.6%	7.6	4.7	A
	Subtotal	1,712	1,534	89.6%	12.9	2.9	B
WB	Left Turn	27	22	81.5%	49.1	11.6	D
	Through	865	682	78.9%	8.5	2.5	A
	Right Turn	18	19	104.4%	7.5	2.7	A
	Subtotal	910	723	79.5%	9.7	2.4	A
Total		2,702	2,346	86.8%	12.6	2.4	B

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	5	4	88.0%	14.5	13.7	B
	Through						
	Right Turn	2	2	120.0%	11.1	16.7	B
	Subtotal	7	7	97.1%	16.6	13.2	B
SB	Left Turn	19	24	124.2%	35.7	10.5	D
	Through						
	Right Turn	41	38	92.7%	8.0	2.4	A
	Subtotal	60	62	102.7%	19.3	7.2	B
EB	Left Turn	56	47	83.6%	42.7	10.4	D
	Through	1,610	1,462	90.8%	9.8	3.5	A
	Right Turn	8	5	65.0%	3.7	3.7	A
	Subtotal	1,674	1,514	90.4%	10.8	3.6	B
WB	Left Turn	10	9	88.0%	41.1	20.7	D
	Through	864	679	78.6%	8.8	2.4	A
	Right Turn	18	17	95.6%	7.9	4.4	A
	Subtotal	892	705	79.0%	9.2	2.3	A
Total		2,633	2,287	86.9%	10.6	2.3	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project Conditions
AM Peak Hour

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	81	92	114.1%	49.6	9.8	D
	Through	56	52	93.6%	39.7	10.0	D
	Right Turn	153	148	96.5%	41.3	7.1	D
	Subtotal	290	292	100.8%	43.5	4.1	D
SB	Left Turn	13	14	107.7%	54.7	20.9	D
	Through	17	18	108.2%	51.4	12.0	D
	Right Turn	20	24	120.0%	53.0	13.0	D
	Subtotal	50	56	112.8%	54.3	10.9	D
EB	Left Turn	194	162	83.5%	96.8	27.9	F
	Through	866	785	90.6%	74.6	24.2	E
	Right Turn	203	165	81.2%	79.1	32.6	E
	Subtotal	1,263	1,112	88.0%	78.6	25.7	E
WB	Left Turn	502	357	71.1%	169.8	33.1	F
	Through	772	542	70.2%	71.2	26.3	E
	Right Turn	45	27	60.4%	62.9	28.8	E
	Subtotal	1,319	926	70.2%	109.0	28.1	F
Total		2,922	2,386	81.7%	85.2	20.8	F

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	23	19	83.5%	48.8	16.9	D
	Through	25	26	102.4%	32.4	12.6	C
	Right Turn	13	12	95.4%	4.8	2.4	A
	Subtotal	61	57	93.8%	32.4	9.6	C
SB	Left Turn	8	8	95.0%	31.9	20.2	C
	Through	3	4	133.3%	21.7	26.7	C
	Right Turn	28	28	100.0%	12.5	10.7	B
	Subtotal	39	40	101.5%	21.6	8.2	C
EB	Left Turn	145	141	97.4%	46.3	6.5	D
	Through	839	780	92.9%	12.1	2.2	B
	Right Turn	24	20	83.3%	7.5	1.7	A
	Subtotal	1,008	941	93.3%	17.2	3.1	B
WB	Left Turn	29	22	75.9%	37.8	18.3	D
	Through	1,308	946	72.3%	23.0	18.9	C
	Right Turn	69	44	64.3%	11.7	7.2	B
	Subtotal	1,406	1,012	72.0%	22.9	18.5	C
Total		2,514	2,050	81.5%	20.5	9.8	C

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	12	109.1%	34.4	18.5	C
	Through	6	6	106.7%	28.2	26.4	C
	Right Turn	10	10	104.0%	13.8	16.8	B
	Subtotal	27	29	106.7%	28.7	13.7	C
SB	Left Turn	84	81	96.7%	28.9	5.1	C
	Through	7	6	80.0%	27.3	19.4	C
	Right Turn	24	24	98.3%	19.7	11.9	B
	Subtotal	115	110	96.0%	28.1	4.6	C
EB	Left Turn	30	24	80.0%	43.6	18.7	D
	Through	807	753	93.3%	11.9	2.8	B
	Right Turn	23	24	102.6%	5.0	2.9	A
	Subtotal	860	800	93.1%	12.6	2.8	B
WB	Left Turn	33	23	69.1%	41.6	17.0	D
	Through	1,371	1,076	78.5%	9.1	3.1	A
	Right Turn	67	59	88.4%	7.4	2.6	A
	Subtotal	1,471	1,158	78.7%	9.7	2.7	A
Total		2,473	2,098	84.8%	12.0	2.4	B

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	88	84	95.9%	75.6	10.9	E
	Through	984	950	96.5%	27.2	3.7	C
	Right Turn	2	4	200.0%	0.5	0.6	A
	Subtotal	1,074	1,038	96.6%	31.1	3.0	C
SB	Left Turn						
	Through	2,503	2,048	81.8%	177.9	19.1	F
	Right Turn	1,453	1,127	77.6%	224.2	21.5	F
	Subtotal	3,956	3,175	80.3%	194.4	18.9	F
EB	Left Turn	787	748	95.0%	76.9	8.1	E
	Through						
	Right Turn	34	30	88.2%	5.7	1.3	A
	Subtotal	821	778	94.7%	74.2	7.7	E
WB	Left Turn	7	4	62.9%	67.6	35.9	E
	Through	0					
	Right Turn						
	Subtotal	7	8	114.3%			
Total		5,858	4,998	85.3%	141.5	12.5	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project Conditions
AM Peak Hour

Intersection 11 **N 7th Street/Bannon St/ Project Driveway** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		al Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	159	143	89.8%	15.7	5.9	C
	Through	193	192	99.5%	2.9	0.3	A
	Right Turn						
	Subtotal	352	335	95.1%	8.2	2.3	A
SB	Left Turn	2	1	60.0%	1.5	2.7	A
	Through	456	340	74.6%	8.4	6.1	A
	Right Turn	264	192	72.9%	6.1	5.6	A
	Subtotal	722	534	74.0%	7.6	5.9	A
EB	Left Turn	96	92	96.3%	22.4	6.7	C
	Through						
	Right Turn	108	110	101.5%	7.6	5.8	A
	Subtotal	204	202	99.0%	14.5	5.7	B
WB	Left Turn						
	Through						
	Right Turn	1	0	40.0%	0.2	0.5	A
	Subtotal	1	0	40.0%	0.2	0.5	A
Total		1,279	1,071	83.8%	9.0	3.6	A

Intersection 12 **N 7th Street/N B Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	16	17	107.5%	47.9	22.5	D
	Through	291	289	99.4%	50.6	7.5	D
	Right Turn	78	90	115.9%	49.4	6.5	D
	Subtotal	385	397	103.1%	50.3	7.0	D
SB	Left Turn	27	20	72.6%	111.9	62.4	F
	Through	533	428	80.2%	93.5	23.8	F
	Right Turn	4	3	80.0%	73.5	36.3	E
	Subtotal	564	450	79.9%	94.1	24.1	F
EB	Left Turn	6	6	100.0%	44.7	29.9	D
	Through	80	67	83.5%	45.6	7.6	D
	Right Turn	92	102	110.4%	26.8	7.2	C
	Subtotal	178	174	98.0%	34.7	7.2	C
WB	Left Turn	312	232	74.5%	128.6	74.7	F
	Through	33	20	59.4%	129.4	89.8	F
	Right Turn	55	46	84.4%	39.1	9.4	D
	Subtotal	400	298	74.6%	114.3	63.6	F
Total		1,527	1,320	86.4%	77.6	18.0	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project Conditions
AM Peak Hour

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	31	27	87.7%	36.5	12.1	D
	Through	127	124	97.6%	37.3	8.8	D
	Right Turn	22	23	105.5%	38.5	15.5	D
	Subtotal	180	174	96.9%	38.4	6.9	D
SB	Left Turn	2	1	40.0%	7.2	13.2	A
	Through						
	Right Turn	32	26	82.5%	29.4	11.5	C
	Subtotal	34	27	80.0%	30.2	10.9	C
EB	Left Turn						
	Through	154	144	93.5%	34.6	5.2	C
	Right Turn	28	30	108.6%	20.4	8.8	C
	Subtotal	182	174	95.8%	32.3	5.3	C
SW	Left Turn	18	16	91.1%	10.2	3.5	B
	Through	2,346	1,998	85.2%	15.1	2.9	B
	Right Turn	261	218	83.5%	22.7	3.8	C
	Subtotal	2,625	2,232	85.0%	15.8	3.0	B
Total		3,021	2,608	86.3%	18.6	2.2	B

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	17	18	105.9%	32.4	11.2	C
	Through	118	129	109.2%	28.9	4.2	C
	Right Turn						
	Subtotal	135	147	108.7%	29.1	4.2	C
SB	Left Turn						
	Through	528	412	78.1%	58.7	16.3	E
	Right Turn	409	323	79.0%	55.1	15.5	E
	Subtotal	937	736	78.5%	57.2	15.8	E
EB	Left Turn	267	268	100.2%	28.3	3.8	C
	Through						
	Right Turn	107	118	110.3%	10.0	1.4	B
	Subtotal	374	386	103.1%	22.7	2.8	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,446	1,268	87.7%	43.4	9.1	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project Conditions
AM Peak Hour

Intersection 15 **North Project Driveway/Richards Boulevard** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	137	121	88.5%	229.8	79.5	F
	Through						
	Right Turn	79	75	94.7%	47.9	57.1	E
	Subtotal	216	196	90.7%	156.9	43.4	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,184	1,061	89.6%	15.2	10.8	C
	Right Turn	447	413	92.4%	15.0	10.3	C
	Subtotal	1,631	1,474	90.4%	15.2	10.6	C
WB	Left Turn	118	80	68.1%	54.0	12.5	F
	Through	755	582	77.1%	2.6	0.5	A
	Right Turn						
	Subtotal	873	663	75.9%	9.0	3.0	A
Total		2,720	2,333	85.8%	25.7	7.2	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project
PM Peak Hour

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	464	448	96.6%	37.9	4.5	D
	Through	217	204	94.0%	46.0	5.7	D
	Right Turn	309	318	102.8%	9.9	1.7	A
	Subtotal	990	970	97.9%	30.4	3.0	C
EB	Left Turn						
	Through	706	594	84.2%	142.2	61.6	F
	Right Turn	74	77	104.3%	5.7	4.8	A
	Subtotal	780	672	86.1%	126.2	53.6	F
WB	Left Turn	873	638	73.1%	13.2	2.8	B
	Through	232	171	73.6%	4.4	1.1	A
	Right Turn						
	Subtotal	1,105	809	73.2%	11.3	2.3	B
Total		2,875	2,450	85.2%	50.0	12.5	D

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	48	44	90.8%	23.6	6.4	C
	Through	15	13	88.0%	33.8	14.7	C
	Right Turn	462	419	90.6%	18.1	9.2	B
	Subtotal	525	476	90.6%	18.9	7.6	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	480	398	82.9%	49.6	16.6	D
	Through	690	650	94.1%	8.0	9.1	A
	Right Turn						
	Subtotal	1,170	1,048	89.5%	23.1	6.4	C
WB	Left Turn						
	Through	1,057	734	69.5%	12.1	1.3	B
	Right Turn	1,419	886	62.4%	3.8	0.7	A
	Subtotal	2,476	1,620	65.4%	7.5	0.7	A
Total		4,171	3,143	75.4%	14.4	2.9	B

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Baseline Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	293	287	97.9%	45.8	10.7	D
	Through	16	14	87.5%	54.7	20.3	D
	Right Turn	22	28	125.5%	17.3	23.1	B
	Subtotal	331	328	99.2%	44.1	10.1	D
SB	Left Turn	31	28	90.3%	41.9	11.5	D
	Through	15	18	117.3%	43.1	19.4	D
	Right Turn	175	165	94.2%	16.1	4.2	B
	Subtotal	221	210	95.2%	21.7	4.0	C
EB	Left Turn	91	85	93.2%	29.1	9.0	C
	Through	947	864	91.3%	17.3	7.6	B
	Right Turn	114	108	95.1%	2.1	0.2	A
	Subtotal	1,152	1,058	91.8%	16.7	6.1	B
WB	Left Turn	10	8	80.0%	31.2	28.8	C
	Through	2,008	1,155	57.5%	58.4	3.9	E
	Right Turn	9	6	62.2%	52.9	43.2	D
	Subtotal	2,027	1,169	57.7%	58.3	4.0	E
Total		3,731	2,765	74.1%	37.9	3.6	D

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	101	112	110.9%	60.9	28.9	E
	Through	1	2	200.0%	15.6	28.2	B
	Right Turn	10	11	108.0%	29.2	40.1	C
	Subtotal	112	125	111.4%	57.8	29.1	E
SB	Left Turn	37	36	97.3%	47.9	17.0	D
	Through	2	3	140.0%	19.4	26.8	B
	Right Turn	27	32	117.0%	43.6	21.4	D
	Subtotal	66	70	106.7%	47.2	14.0	D
EB	Left Turn	29	29	100.7%	53.4	12.5	D
	Through	955	761	79.7%	48.0	27.5	D
	Right Turn	16	12	75.0%	44.2	38.3	D
	Subtotal	1,000	802	80.2%	47.8	26.0	D
WB	Left Turn	3	2	80.0%	19.8	20.7	B
	Through	1,894	974	51.4%	75.7	4.6	E
	Right Turn	12	7	60.0%	99.7	49.8	F
	Subtotal	1,909	984	51.5%	75.8	4.6	E
Total		3,087	1,981	64.2%	62.0	12.4	E

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Baseline Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	101	98	96.6%	39.3	14.7	D
	Through	2	3	140.0%	39.2	58.3	D
	Right Turn	38	33	87.4%	58.8	38.2	E
	Subtotal	141	134	94.8%	44.4	13.3	D
SB	Left Turn	21	20	95.2%	135.3	71.0	F
	Through	6	7	113.3%	20.9	17.3	C
	Right Turn	56	59	105.7%	17.7	4.0	B
	Subtotal	83	86	103.6%	41.9	13.4	D
EB	Left Turn	11	7	61.8%	146.1	117.1	F
	Through	971	607	62.5%	118.6	61.6	F
	Right Turn	20	18	88.0%	101.1	60.3	F
	Subtotal	1,002	631	63.0%	117.7	60.8	F
WB	Left Turn	12	6	50.0%	89.3	48.9	F
	Through	1,752	807	46.1%	121.4	13.5	F
	Right Turn	7	4	62.9%	109.4	97.3	F
	Subtotal	1,771	818	46.2%	121.5	13.3	F
Total		2,997	1,668	55.7%	107.5	25.9	F

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	13	10	80.0%	28.6	26.6	C
	Through						
	Right Turn	11	11	98.2%	60.9	42.5	E
	Subtotal	24	21	88.3%	55.1	32.8	E
SB	Left Turn	11	11	98.2%	65.5	38.4	E
	Through						
	Right Turn	77	71	92.5%	46.0	18.9	D
	Subtotal	88	82	93.2%	51.0	20.1	D
EB	Left Turn	20	14	72.0%	148.2	84.0	F
	Through	1,001	506	50.5%	181.3	65.0	F
	Right Turn	9	4	40.0%	181.8	189.1	F
	Subtotal	1,030	524	50.9%	181.2	65.1	F
WB	Left Turn	8	3	35.0%	92.0	67.1	F
	Through	1,681	742	44.1%	135.7	16.4	F
	Right Turn	3	1	26.7%	39.0	82.4	D
	Subtotal	1,692	745	44.0%	135.8	16.3	F
Total		2,834	1,372	48.4%	144.2	29.7	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project
PM Peak Hour

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	231	112	48.5%	82.8	37.4	F
	Through	14	5	34.3%	21.2	31.3	C
	Right Turn	564	313	55.5%	39.8	5.7	D
	Subtotal	809	430	53.1%	50.9	9.6	D
SB	Left Turn	89	70	79.1%	170.9	102.8	F
	Through	119	92	77.6%	202.4	99.2	F
	Right Turn	118	79	67.1%	194.7	94.7	F
	Subtotal	326	242	74.2%	189.1	95.2	F
EB	Left Turn	10	4	36.0%	131.3	113.2	F
	Through	799	478	59.8%	157.1	21.8	F
	Right Turn	180	87	48.4%	270.5	69.1	F
	Subtotal	989	569	57.5%	173.9	25.4	F
WB	Left Turn	351	166	47.3%	418.3	44.5	F
	Through	1,061	566	53.4%	269.1	43.8	F
	Right Turn	18	10	57.8%	248.4	58.5	F
	Subtotal	1,430	743	51.9%	300.4	40.1	F
Total		3,554	1,983	55.8%	195.1	23.0	F

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	26	88.0%	100.5	55.9	F
	Through	6	6	93.3%	26.5	26.9	C
	Right Turn	23	24	106.1%	6.9	3.5	A
	Subtotal	59	56	95.6%	52.5	21.9	D
SB	Left Turn	101	78	77.2%	61.4	30.6	E
	Through	57	55	96.8%	72.7	41.0	E
	Right Turn	173	141	81.6%	107.9	48.2	F
	Subtotal	331	274	82.9%	87.7	40.6	F
EB	Left Turn	24	18	73.3%	45.2	11.1	D
	Through	1,412	841	59.6%	15.7	5.8	B
	Right Turn	71	39	55.2%	8.4	3.7	A
	Subtotal	1,507	898	59.6%	16.0	5.7	B
WB	Left Turn	9	4	48.9%	181.7	125.2	F
	Through	1,186	612	51.6%	195.8	40.8	F
	Right Turn	12	6	46.7%	149.7	128.2	F
	Subtotal	1,207	622	51.5%	195.6	40.4	F
Total		3,104	1,851	59.6%	86.0	9.8	F

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	29	22	77.2%	50.9	18.6	D
	Through	10	9	92.0%	37.6	27.8	D
	Right Turn	92	76	82.2%	25.9	11.0	C
	Subtotal	131	107	81.8%	33.2	13.9	C
SB	Left Turn	29	31	106.2%	36.1	11.3	D
	Through	13	7	55.4%	33.6	27.8	C
	Right Turn	35	38	108.6%	30.7	13.4	C
	Subtotal	77	76	98.7%	34.0	11.1	C
EB	Left Turn	17	7	42.4%	48.2	28.1	D
	Through	1,512	925	61.2%	20.8	7.0	C
	Right Turn	7	5	74.3%	6.6	7.0	A
	Subtotal	1,536	938	61.0%	20.9	6.8	C
WB	Left Turn	15	8	53.3%	104.8	61.0	F
	Through	1,143	767	67.1%	88.0	28.9	F
	Right Turn	10	7	72.0%	85.3	90.6	F
	Subtotal	1,168	782	67.0%	88.0	28.9	F
Total		2,912	1,903	65.3%	49.1	13.9	D

Intersection 10 **N 12th St-N 16th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	55	49	88.7%	244.6	36.9	F
	Through	3,665	2,643	72.1%	276.1	18.8	F
	Right Turn	6	4	60.0%	250.5	183.7	F
	Subtotal	3,726	2,696	72.3%	275.6	18.7	F
SB	Left Turn						
	Through	1,825	1,861	102.0%	35.1	3.1	D
	Right Turn	1,083	1,066	98.4%	29.5	3.1	C
	Subtotal	2,908	2,927	100.6%	33.1	2.7	C
EB	Left Turn	1,420	806	56.8%	247.7	31.8	F
	Through						
	Right Turn	103	64	62.5%	63.8	26.1	E
	Subtotal	1,523	870	57.2%	234.1	33.1	F
WB	Left Turn	6	8	133.3%	62.8	27.8	E
	Through	6	6	106.7%	63.6	23.8	E
	Right Turn	3	3	93.3%	1.6	2.0	A
	Subtotal	15	17	114.7%			
Total		8,172	6,510	79.7%	160.5	8.3	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Baseline Plus Project
PM Peak Hour

Intersection 11 **N 7th Street/Project Driveway** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	126	74	58.7%	8.9	1.2	A
	Through	517	318	61.4%	6.3	0.5	A
	Right Turn						
	Subtotal	643	392	60.9%	6.8	0.3	A
SB	Left Turn	3	1	26.7%	31.9	67.4	C
	Through	499	256	51.3%	145.3	31.0	F
	Right Turn	148	81	54.6%	138.0	40.2	F
	Subtotal	650	338	51.9%	143.5	33.2	F
EB	Left Turn	281	107	38.1%	31.8	8.7	C
	Through						
	Right Turn	490	146	29.7%	440.5	50.4	F
	Subtotal	771	253	32.8%	265.6	29.2	F
WB	Left Turn	4	3	70.0%	48.1	89.6	D
	Through						
	Right Turn	11	12	105.5%	3.2	1.9	A
	Subtotal	15	14	96.0%	36.7	87.2	D
Total		2,079	996	47.9%	117.0	10.2	F

Intersection 12 **N 7th Street/N B Street** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	139	78	56.1%	133.9	16.8	F
	Through	585	346	59.2%	135.8	11.3	F
	Right Turn	356	211	59.2%	132.3	5.3	F
	Subtotal	1,080	635	58.8%	134.5	8.7	F
SB	Left Turn	103	32	31.5%	184.1	34.7	F
	Through	778	316	40.7%	173.7	21.0	F
	Right Turn	112	36	32.5%	161.2	36.8	F
	Subtotal	993	385	38.8%	173.4	21.1	F
EB	Left Turn						
	Through	91	87	95.8%	51.2	9.9	D
	Right Turn	59	62	105.1%	41.1	16.6	D
	Subtotal	150	149	99.5%	46.5	11.7	D
WB	Left Turn	190	155	81.5%	238.0	94.3	F
	Through	76	70	92.6%	247.8	100.6	F
	Right Turn	58	54	93.1%	58.1	32.5	E
	Subtotal	324	279	86.2%	205.9	82.5	F
Total		2,547	1,449	56.9%	148.1	13.8	F

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	43	38	88.4%	42.3	10.4	D
	Through	147	144	97.7%	30.8	3.1	C
	Right Turn	22	19	85.5%	28.0	13.9	C
	Subtotal	212	200	94.5%	32.9	3.0	C
SB	Left Turn	5	3	64.0%	28.4	38.2	C
	Through						
	Right Turn	35	28	80.0%	41.1	10.5	D
	Subtotal	40	31	78.0%	43.7	10.5	D
EB	Left Turn	67	46	68.7%	41.8	8.4	D
	Through	359	210	58.6%	32.4	6.0	C
	Right Turn	127	72	56.7%	21.7	6.3	C
	Subtotal	553	328	59.4%	31.6	4.5	C
SW	Left Turn	34	35	102.4%	11.0	4.3	B
	Through	1,692	1,704	100.7%	15.4	2.3	B
	Right Turn	160	147	91.8%	18.9	4.0	B
	Subtotal	1,886	1,885	100.0%	15.6	2.3	B
Total		2,691	2,445	90.9%	19.6	1.8	B

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	52	34	64.6%	285.6	95.1	F
	Through	368	199	54.0%	307.5	103.7	F
	Right Turn						
	Subtotal	420	232	55.3%	306.3	101.8	F
SB	Left Turn						
	Through	496	232	46.8%	147.2	29.8	F
	Right Turn	531	258	48.5%	140.5	26.3	F
	Subtotal	1,027	490	47.7%	143.8	27.9	F
EB	Left Turn	712	416	58.4%	372.7	70.7	F
	Through						
	Right Turn	64	43	67.5%	375.1	89.3	F
	Subtotal	776	459	59.1%	373.4	72.4	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,223	1,181	53.1%	257.9	28.9	F

Intersection 15 **North Project Driveway/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	351	161	45.9%	307.9	110.9	F
	Through						
	Right Turn	240	172	71.8%	183.5	85.7	F
	Subtotal	591	334	56.4%	232.8	64.0	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	749	388	51.9%	186.5	36.3	F
	Right Turn	274	134	49.1%	204.1	48.9	F
	Subtotal	1,023	523	51.1%	191.0	37.8	F
WB	Left Turn	69	33	47.5%	55.3	18.7	F
	Through	1,341	645	48.1%	122.3	28.6	F
	Right Turn						
	Subtotal	1,410	678	48.1%	119.0	27.0	F
Total		3,024	1,534	50.7%	165.8	29.6	F

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1,660	729	43.9%	402.0	57.5	F
	Through	15	6	40.0%	402.8	108.2	F
	Right Turn	325	156	48.1%	350.0	55.8	F
	Subtotal	2,000	891	44.6%	392.9	55.6	F
EB	Left Turn						
	Through	105	106	101.0%	22.8	3.3	C
	Right Turn	80	79	99.0%	2.8	3.0	A
	Subtotal	185	185	100.1%	14.3	2.9	B
WB	Left Turn	650	532	81.9%	27.4	14.8	C
	Through	110	106	96.0%	6.8	1.3	A
	Right Turn						
	Subtotal	760	638	83.9%	24.2	12.7	C
Total		2,945	1,714	58.2%	211.1	15.6	F

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	55	53	96.0%	36.4	18.7	D
	Through	5	6	112.0%	126.5	67.3	F
	Right Turn	1,210	1,152	95.2%	79.0	37.8	E
	Subtotal	1,270	1,210	95.3%	77.5	37.0	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	135	95	70.5%	13.1	2.6	B
	Through	1,630	760	46.6%	91.8	21.9	F
	Right Turn						
	Subtotal	1,765	855	48.4%	82.4	17.9	F
WB	Left Turn						
	Through	705	568	80.6%	13.7	2.8	B
	Right Turn	875	723	82.7%	6.0	1.4	A
	Subtotal	1,580	1,291	81.7%	9.3	1.8	A
Total		4,615	3,356	72.7%	51.6	12.0	D

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	125	121	96.6%	31.3	4.8	C
	Through	50	54	108.8%	35.5	6.7	D
	Right Turn	15	17	112.0%	11.8	4.8	B
	Subtotal	190	192	101.1%	30.5	3.8	C
SB	Left Turn	40	35	88.0%	33.6	6.3	C
	Through	30	25	84.0%	38.1	8.5	D
	Right Turn	60	69	114.7%	8.6	3.1	A
	Subtotal	130	129	99.4%	21.4	4.1	C
EB	Left Turn	390	273	70.1%	65.3	11.4	E
	Through	1,575	1,094	69.5%	22.5	2.9	C
	Right Turn	875	563	64.3%	4.1	0.8	A
	Subtotal	2,840	1,930	68.0%	23.2	2.3	C
WB	Left Turn	125	95	75.8%	47.7	7.3	D
	Through	1,395	1,097	78.6%	19.6	5.1	B
	Right Turn	30	24	80.0%	14.7	7.7	B
	Subtotal	1,550	1,216	78.4%	21.7	4.9	C
Total		4,710	3,467	73.6%	23.0	2.1	C

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	46	92.0%	33.4	6.6	C
	Through	50	53	106.4%	32.5	8.9	C
	Right Turn	15	19	128.0%	17.4	6.6	B
	Subtotal	115	118	103.0%	30.7	4.7	C
SB	Left Turn	5	4	80.0%	22.9	24.3	C
	Through	35	41	116.6%	37.2	7.3	D
	Right Turn	205	207	101.1%	12.9	2.8	B
	Subtotal	245	252	102.9%	17.0	2.6	B
EB	Left Turn	125	89	71.0%	36.5	7.8	D
	Through	1,165	796	68.3%	18.1	5.1	B
	Right Turn	340	231	68.0%	17.3	5.9	B
	Subtotal	1,630	1,116	68.4%	19.4	4.8	B
WB	Left Turn	30	19	62.7%	18.2	13.2	B
	Through	1,295	954	73.7%	16.0	3.3	B
	Right Turn	80	58	72.5%	15.8	5.1	B
	Subtotal	1,405	1,031	73.4%	16.1	3.3	B
Total		3,395	2,517	74.1%	18.3	3.2	B

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	325	322	99.1%	28.4	6.3	C
	Through	295	320	108.3%	31.2	3.9	C
	Right Turn	20	22	110.0%	25.0	10.1	C
	Subtotal	640	664	103.7%	29.9	3.3	C
SB	Left Turn	105	44	42.3%	456.3	26.8	F
	Through	535	227	42.4%	466.9	27.1	F
	Right Turn	35	17	49.1%	435.6	64.4	F
	Subtotal	675	288	42.7%	463.3	27.2	F
EB	Left Turn	75	46	61.3%	52.0	6.2	D
	Through	1,085	748	68.9%	9.2	1.9	A
	Right Turn	25	17	67.2%	6.3	3.7	A
	Subtotal	1,185	810	68.4%	11.5	1.9	B
WB	Left Turn	35	26	75.4%	38.0	11.0	D
	Through	1,045	708	67.8%	29.6	3.3	C
	Right Turn	140	95	67.7%	29.1	6.4	C
	Subtotal	1,220	829	68.0%	29.8	3.3	C
Total		3,720	2,592	69.7%	72.5	2.0	E

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	15	14	90.7%	37.2	7.8	D
	Through	115	120	104.3%	31.6	5.4	C
	Right Turn	135	132	97.5%	14.1	4.6	B
	Subtotal	265	265	100.1%	23.0	3.8	C
SB	Left Turn	80	76	95.0%	37.6	8.6	D
	Through	120	113	94.0%	28.8	6.4	C
	Right Turn	110	117	106.5%	17.1	5.1	B
	Subtotal	310	306	98.7%	26.5	4.7	C
EB	Left Turn	15	8	56.0%	49.8	28.7	D
	Through	1,190	789	66.3%	15.7	8.2	B
	Right Turn	5	4	72.0%	8.3	13.0	A
	Subtotal	1,210	801	66.2%	16.1	8.2	B
WB	Left Turn	235	145	61.8%	44.0	11.7	D
	Through	1,095	727	66.4%	13.3	3.4	B
	Right Turn	5	4	80.0%	6.8	6.3	A
	Subtotal	1,335	876	65.6%	18.6	4.6	B
Total		3,120	2,248	72.1%	19.3	4.3	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative No Project Conditions
AM Peak Hour

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	155	147	94.7%	43.7	7.0	D
	Through	240	236	98.2%	37.4	4.4	D
	Right Turn	10	12	124.0%	29.8	21.3	C
	Subtotal	405	395	97.5%	39.6	3.1	D
SB	Left Turn	70	46	65.7%	68.1	26.2	E
	Through	215	199	92.7%	37.2	7.2	D
	Right Turn	35	36	104.0%	34.9	9.5	C
	Subtotal	320	282	88.0%	42.3	9.7	D
EB	Left Turn	195	151	77.3%	97.8	28.7	F
	Through	1,075	793	73.8%	93.7	30.1	F
	Right Turn	135	92	67.9%	93.0	33.5	F
	Subtotal	1,405	1,036	73.7%	94.2	29.7	F
WB	Left Turn	310	173	55.9%	56.7	6.4	E
	Through	1,145	668	58.4%	31.7	4.8	C
	Right Turn	15	12	77.3%	34.9	14.6	C
	Subtotal	1,470	853	58.0%	36.6	4.0	D
Total		3,600	2,565	71.3%	60.2	11.7	E

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	5	4	88.0%	71.0	128.4	E
	Through	40	28	69.0%	83.5	36.3	F
	Right Turn	290	166	57.2%	161.4	69.7	F
	Subtotal	335	198	59.1%	150.4	64.3	F
SB	Left Turn	120	65	54.3%	152.0	50.1	F
	Through	15	12	77.3%	51.6	29.7	D
	Right Turn	45	23	50.7%	57.3	60.7	E
	Subtotal	180	100	55.3%	118.7	49.5	F
EB	Left Turn	125	80	64.3%	159.8	39.7	F
	Through	1,030	475	46.1%	214.8	54.7	F
	Right Turn	5	3	64.0%	160.6	152.0	F
	Subtotal	1,160	558	48.1%	207.1	52.0	F
WB	Left Turn	225	134	59.6%	48.0	7.6	D
	Through	1,540	934	60.7%	27.8	8.4	C
	Right Turn	165	100	60.4%	27.7	10.5	C
	Subtotal	1,930	1,168	60.5%	30.1	8.1	C
Total		3,605	2,024	56.1%	92.5	13.2	F

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	25	84.0%	99.6	53.5	F
	Through	15	8	56.0%	256.4	179.4	F
	Right Turn	440	232	52.7%	271.8	170.6	F
	Subtotal	485	266	54.8%	245.4	137.4	F
SB	Left Turn	110	92	83.3%	114.1	35.6	F
	Through	5	2	48.0%	25.5	38.6	C
	Right Turn	60	62	102.7%	25.2	12.3	C
	Subtotal	175	156	88.9%	76.8	21.6	E
EB	Left Turn	80	30	37.0%	229.5	54.3	F
	Through	1,320	500	37.9%	235.1	39.3	F
	Right Turn	40	15	38.0%	269.5	194.7	F
	Subtotal	1,440	545	37.8%	235.3	41.1	F
WB	Left Turn	125	60	47.7%	78.9	22.0	E
	Through	1,840	1,156	62.8%	36.1	9.3	D
	Right Turn	70	47	67.4%	31.8	11.9	C
	Subtotal	2,035	1,263	62.1%	38.2	10.0	D
Total		4,135	2,229	53.9%	106.9	11.5	F

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	360	250	69.6%	24.1	4.7	C
	Through	2,240	1,464	65.4%	24.8	3.2	C
	Right Turn	1,195	628	52.5%	21.7	2.3	C
	Subtotal	3,795	2,342	61.7%	23.9	2.5	C
EB	Left Turn						
	Through	1,435	585	40.8%	83.1	11.9	F
	Right Turn	470	192	40.9%	87.5	12.4	F
	Subtotal	1,905	778	40.8%	84.2	11.1	F
WB	Left Turn	270	213	79.0%	106.5	19.5	F
	Through	815	659	80.8%	41.2	4.4	D
	Right Turn						
	Subtotal	1,085	872	80.4%	57.8	8.2	E
Total		6,785	3,992	58.8%	42.7	2.7	D

Intersection 11 **N 7th Street/Bannon St** **Signal**

		Demand	Served Volume (vph)		al Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	395	325	82.2%	1.5	0.4	A
	Right Turn	5	4	80.0%	0.6	1.0	A
	Subtotal	400	329	82.2%	1.5	0.4	A
SB	Left Turn	5	4	80.0%	3.5	3.1	A
	Through	655	484	73.8%	2.8	0.5	A
	Right Turn						
	Subtotal	660	488	73.9%	2.8	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	5	7	144.0%	10.2	16.0	B
	Through						
	Right Turn	10	12	120.0%	3.6	2.9	A
	Subtotal	15	19	128.0%	7.2	11.4	A
Total		1,075	836	77.7%	2.4	0.4	A

Intersection 12 **N 7th Street/N B Street** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	23	76.0%	71.7	18.7	E
	Through	260	212	81.4%	46.5	4.1	D
	Right Turn	320	256	80.1%	64.3	12.9	E
	Subtotal	610	491	80.5%	57.1	7.7	E
SB	Left Turn	235	177	75.2%	91.5	36.0	F
	Through	540	437	81.0%	33.0	4.6	C
	Right Turn	100	84	84.4%	38.0	9.5	D
	Subtotal	875	698	79.8%	49.1	12.2	D
EB	Left Turn	35	25	70.9%	227.9	75.1	F
	Through	315	221	70.2%	224.2	52.2	F
	Right Turn	60	48	79.3%	223.0	62.9	F
	Subtotal	410	294	71.6%	224.8	54.7	F
WB	Left Turn	655	448	68.4%	111.3	32.7	F
	Through	560	416	74.4%	46.2	13.3	D
	Right Turn	130	104	80.3%	43.0	12.0	D
	Subtotal	1,345	969	72.0%	76.1	18.6	E
	Total	3,240	2,452	75.7%	82.4	5.8	F

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	30	31	102.7%	47.8	9.0	D
	Through	410	400	97.6%	22.7	1.7	C
	Right Turn	40	41	102.0%	26.2	5.2	C
	Subtotal	480	472	98.3%	24.7	1.6	C
SB	Left Turn						
	Through						
	Right Turn	60	41	68.7%	5.8	3.8	A
	Subtotal	60	41	68.7%	5.8	3.8	A
EB	Left Turn						
	Through	1,035	773	74.7%	116.7	14.1	F
	Right Turn	375	277	73.9%	124.2	13.3	F
	Subtotal	1,410	1,050	74.5%	118.7	13.7	F
SW	Left Turn	30	14	48.0%	21.2	6.4	C
	Through	1,845	1,279	69.3%	27.3	3.1	C
	Right Turn	960	641	66.8%	60.8	23.7	E
	Subtotal	2,835	1,934	68.2%	38.4	9.2	D
Total		4,785	3,498	73.1%	60.2	4.7	E

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	335	261	77.9%	237.5	55.9	F
	Through	395	389	98.5%	68.8	20.2	E
	Right Turn	410	395	96.3%	55.7	20.6	E
	Subtotal	1,140	1,045	91.6%	106.5	16.9	F
SB	Left Turn	25	18	72.0%	48.4	8.1	D
	Through	710	510	71.8%	28.7	4.0	C
	Right Turn	190	139	73.3%	24.2	4.4	C
	Subtotal	925	667	72.1%	28.3	3.8	C
EB	Left Turn	380	230	60.4%	375.2	35.6	F
	Through	385	259	67.3%	318.1	44.5	F
	Right Turn	370	316	85.4%	87.1	25.9	F
	Subtotal	1,135	805	70.9%	243.4	32.7	F
WB	Left Turn	440	311	70.6%	229.6	25.4	F
	Through	440	292	66.3%	165.6	11.5	F
	Right Turn	20	16	78.0%	138.7	47.5	F
	Subtotal	900	618	68.7%	198.3	20.4	F
Total		4,100	3,134	76.4%	142.6	9.3	F

Intersection 16 **N 16th St/Richards Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	70	63	90.3%	39.3	13.9	D
	Through	1,665	1,776	106.6%	33.4	2.9	C
	Right Turn	160	158	98.5%	4.6	1.1	A
	Subtotal	1,895	1,996	105.4%	31.3	2.8	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	805	338	42.0%	71.9	6.7	E
	Through	990	467	47.2%	27.9	4.9	C
	Right Turn						
	Subtotal	1,795	805	44.8%	46.3	5.2	D
WB	Left Turn						
	Through	1,015	809	79.7%	131.5	37.7	F
	Right Turn	380	304	80.0%	101.1	36.0	F
	Subtotal	1,395	1,113	79.8%	123.2	37.8	F
Total		5,085	3,914	77.0%	59.7	9.0	E

Intersection 17 **N 12th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	75	68	90.7%	143.0	46.9	F
	Through	95	85	89.3%	80.5	31.0	F
	Right Turn						
	Subtotal	170	153	89.9%	109.6	37.1	F
SB	Left Turn	460	280	61.0%	207.7	24.5	F
	Through	3,710	2,203	59.4%	234.5	25.3	F
	Right Turn	670	323	48.2%	282.3	31.7	F
	Subtotal	4,840	2,806	58.0%	237.3	25.5	F
EB	Left Turn						
	Through	365	277	75.9%	101.7	13.5	F
	Right Turn	10	8	84.0%	69.0	36.4	E
	Subtotal	375	286	76.2%	100.8	14.0	F
SW	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		5,385	3,245	60.3%	219.2	22.6	F

Intersection 18 **N 16th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	45	34	74.7%	6.5	7.2	A
	Through						
	Right Turn	2,805	2,418	86.2%	5.1	0.4	A
	Subtotal	2,850	2,451	86.0%	5.1	0.4	A
SB	Left Turn						
	Through						
	Right Turn	1	2	160.0%	34.1	50.6	C
	Subtotal	1	2	160.0%	32.9	51.4	C
EB	Left Turn	330	186	56.2%	106.4	14.3	F
	Through	495	298	60.2%	68.2	3.8	E
	Right Turn						
	Subtotal	825	484	58.6%	82.8	5.4	F
WB	Left Turn						
	Through	125	101	80.6%	79.8	22.4	E
	Right Turn	290	280	96.6%	53.4	15.0	D
	Subtotal	415	381	91.8%	60.7	17.0	E
Total		4,091	3,317	81.1%	22.9	2.8	C

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1,020	907	88.9%	64.4	28.7	E
	Through	220	204	92.9%	70.1	31.4	E
	Right Turn	185	177	95.8%	17.2	10.0	B
	Subtotal	1,425	1,289	90.4%	59.0	27.1	E
EB	Left Turn						
	Through	830	582	70.1%	245.8	44.5	F
	Right Turn	135	137	101.6%	26.5	12.1	C
	Subtotal	965	719	74.5%	203.5	35.6	F
WB	Left Turn	705	459	65.1%	8.2	3.1	A
	Through	85	82	96.0%	2.6	1.4	A
	Right Turn						
	Subtotal	790	541	68.5%	7.4	2.8	A
Total		3,180	2,549	80.2%	88.1	14.9	F

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	60	61	101.3%	27.9	4.4	C
	Through	15	18	117.3%	74.2	71.1	E
	Right Turn	455	426	93.5%	56.1	45.8	E
	Subtotal	530	504	95.1%	52.6	39.8	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	665	440	66.1%	27.6	7.9	C
	Through	1,185	1,093	92.3%	29.9	13.2	C
	Right Turn						
	Subtotal	1,850	1,533	82.9%	29.0	8.6	C
WB	Left Turn						
	Through	730	467	64.0%	12.2	2.1	B
	Right Turn	1,290	787	61.0%	12.6	1.8	B
	Subtotal	2,020	1,254	62.1%	12.5	1.5	B
Total		4,400	3,291	74.8%	25.8	7.8	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative No Project Conditions
PM Peak Hour

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	255	243	95.2%	60.1	18.3	E
	Through	45	48	107.6%	70.3	23.8	E
	Right Turn	115	118	103.0%	18.7	5.2	B
	Subtotal	415	410	98.7%	49.4	15.0	D
SB	Left Turn	55	50	90.2%	36.7	9.2	D
	Through	80	75	93.5%	40.7	4.4	D
	Right Turn	85	86	100.7%	13.2	2.7	B
	Subtotal	220	210	95.5%	28.4	3.9	C
EB	Left Turn	50	44	87.2%	29.0	9.6	C
	Through	1,120	1,040	92.9%	32.0	6.6	C
	Right Turn	470	450	95.7%	3.6	0.6	A
	Subtotal	1,640	1,534	93.5%	23.4	4.2	C
WB	Left Turn	110	65	59.3%	40.2	8.7	D
	Through	1,680	905	53.9%	63.9	7.8	E
	Right Turn	20	11	54.0%	84.7	21.6	F
	Subtotal	1,810	981	54.2%	62.4	7.4	E
Total		4,085	3,134	76.7%	39.3	4.7	D

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	210	174	82.7%	168.5	73.1	F
	Through	35	38	107.4%	16.2	5.7	B
	Right Turn	15	21	138.7%	11.6	5.0	B
	Subtotal	260	232	89.2%	130.0	56.2	F
SB	Left Turn	75	76	101.9%	30.7	6.9	C
	Through	20	21	104.0%	27.9	15.3	C
	Right Turn	230	229	99.5%	28.4	7.7	C
	Subtotal	325	326	100.3%	29.4	6.6	C
EB	Left Turn	215	192	89.1%	72.9	16.9	E
	Through	965	854	88.5%	73.1	15.6	E
	Right Turn	110	99	89.8%	77.4	18.0	E
	Subtotal	1,290	1,145	88.7%	73.6	13.6	E
WB	Left Turn	5	4	80.0%	17.7	25.8	B
	Through	1,370	563	41.1%	129.4	22.8	F
	Right Turn	20	8	38.0%	155.2	85.7	F
	Subtotal	1,395	574	41.2%	129.8	22.6	F
Total		3,270	2,277	69.6%	86.8	15.2	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative No Project Conditions
PM Peak Hour

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	235	258	109.8%	40.8	14.9	D
	Through	405	404	99.7%	72.9	33.6	E
	Right Turn	25	30	118.4%	66.4	36.2	E
	Subtotal	665	691	103.9%	61.0	23.3	E
SB	Left Turn	185	105	56.6%	351.4	59.8	F
	Through	430	270	62.7%	346.8	49.5	F
	Right Turn	80	49	61.0%	358.5	59.3	F
	Subtotal	695	423	60.9%	348.9	50.8	F
EB	Left Turn	45	38	83.6%	47.7	10.7	D
	Through	815	710	87.2%	39.4	7.0	D
	Right Turn	195	172	88.0%	39.2	8.8	D
	Subtotal	1,055	920	87.2%	39.7	7.0	D
WB	Left Turn	5	1	16.0%	15.9	50.2	B
	Through	1,080	285	26.4%	241.9	66.4	F
	Right Turn	180	40	22.2%	365.0	103.7	F
	Subtotal	1,265	326	25.8%	255.4	65.9	F
Total		3,680	2,360	64.1%	128.8	12.5	F

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	6	56.0%	177.9	178.8	F
	Through	135	113	83.6%	62.8	46.8	E
	Right Turn	160	136	85.3%	52.6	40.5	D
	Subtotal	305	255	83.5%	59.1	42.1	E
SB	Left Turn	5	5	96.0%	51.8	63.8	D
	Through	170	134	78.8%	70.1	26.5	E
	Right Turn	130	87	66.8%	138.8	46.3	F
	Subtotal	305	226	74.0%	95.7	30.9	F
EB	Left Turn	105	73	69.3%	52.0	18.6	D
	Through	900	674	74.9%	58.5	40.1	E
	Right Turn	20	14	72.0%	73.0	73.6	E
	Subtotal	1,025	761	74.3%	57.9	37.4	E
WB	Left Turn	195	41	21.1%	246.1	89.4	F
	Through	1,125	285	25.3%	280.2	119.6	F
	Right Turn	15	5	32.0%	258.3	223.1	F
	Subtotal	1,335	331	24.8%	275.9	116.3	F
Total		2,970	1,572	52.9%	102.5	30.0	F

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	230	234	101.7%	50.2	4.5	D
	Through	200	202	100.8%	41.6	7.1	D
	Right Turn	70	58	83.4%	36.9	17.2	D
	Subtotal	500	494	98.8%	45.0	5.8	D
SB	Left Turn	80	65	81.0%	107.0	23.7	F
	Through	375	356	94.8%	69.8	17.5	E
	Right Turn	55	61	110.5%	38.3	7.2	D
	Subtotal	510	481	94.4%	70.8	16.9	E
EB	Left Turn	5	5	96.0%	95.9	48.5	F
	Through	800	653	81.7%	93.4	28.6	F
	Right Turn	260	198	76.2%	97.2	28.5	F
	Subtotal	1,065	856	80.4%	94.3	28.4	F
WB	Left Turn	495	261	52.8%	64.9	15.1	E
	Through	1,050	607	57.8%	24.6	4.0	C
	Right Turn	20	8	40.0%	15.1	14.9	B
	Subtotal	1,565	876	56.0%	36.6	4.9	D
Total		3,640	2,708	74.4%	62.0	10.2	E

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	5	2	48.0%	14.2	16.0	B
	Through	25	20	81.6%	32.8	21.4	C
	Right Turn	170	143	84.2%	63.5	25.0	E
	Subtotal	200	166	83.0%	59.3	23.4	E
SB	Left Turn	315	146	46.5%	227.1	80.3	F
	Through	60	23	38.7%	196.0	82.4	F
	Right Turn	145	67	46.1%	174.1	91.5	F
	Subtotal	520	236	45.5%	206.3	79.6	F
EB	Left Turn	40	21	53.0%	174.2	95.6	F
	Through	960	489	50.9%	200.1	61.5	F
	Right Turn	85	50	58.4%	165.7	86.3	F
	Subtotal	1,085	560	51.6%	195.8	62.2	F
WB	Left Turn	280	159	56.7%	46.2	3.9	D
	Through	1,400	842	60.2%	16.3	4.3	B
	Right Turn	115	78	68.2%	12.9	3.8	B
	Subtotal	1,795	1,080	60.1%	20.4	3.8	C
Total		3,600	2,042	56.7%	90.2	20.5	F

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	45	45	99.6%	69.7	24.5	E
	Through	10	10	96.0%	124.2	83.4	F
	Right Turn	345	248	71.9%	154.6	54.9	F
	Subtotal	400	302	75.6%	140.0	46.1	F
SB	Left Turn	50	59	117.6%	77.7	34.2	E
	Through	5	4	88.0%	43.2	52.4	D
	Right Turn	70	75	107.4%	15.6	9.1	B
	Subtotal	125	138	110.7%	45.0	20.3	D
EB	Left Turn	25	8	33.6%	173.0	112.3	F
	Through	1,395	554	39.7%	221.5	39.9	F
	Right Turn	25	10	40.0%	258.4	160.6	F
	Subtotal	1,445	572	39.6%	221.9	41.1	F
WB	Left Turn	100	58	57.6%	67.8	13.1	E
	Through	1,680	980	58.3%	20.6	9.8	C
	Right Turn	45	28	62.2%	19.8	12.8	B
	Subtotal	1,825	1,065	58.4%	23.1	9.5	C
Total		3,795	2,078	54.8%	94.8	9.6	F

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	440	262	59.5%	65.7	12.6	E
	Through	1,690	1,005	59.5%	45.2	11.9	D
	Right Turn	1,000	504	50.4%	35.4	4.0	D
	Subtotal	3,130	1,771	56.6%	45.3	8.6	D
EB	Left Turn						
	Through	1,550	791	51.0%	53.8	10.8	D
	Right Turn	410	214	52.1%	46.0	6.8	D
	Subtotal	1,960	1,004	51.2%	52.3	9.4	D
WB	Left Turn	130	88	68.0%	134.8	35.1	F
	Through	870	635	73.0%	37.5	9.5	D
	Right Turn						
	Subtotal	1,000	724	72.4%	49.5	8.8	D
Total		6,090	3,499	57.5%	47.9	3.6	D

Intersection 11 **N 7th Street/Bannon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	60	44	73.3%	26.8	5.3	C
	Through	350	281	80.2%	7.7	1.7	A
	Right Turn	15	15	101.3%	5.5	2.2	A
	Subtotal	425	340	80.0%	10.2	1.3	B
SB	Left Turn	10	8	84.0%	40.4	19.8	D
	Through	645	482	74.8%	12.0	1.6	B
	Right Turn	5	6	120.0%	8.1	6.1	A
	Subtotal	660	497	75.3%	12.4	1.6	B
EB	Left Turn	5	5	96.0%	15.6	13.9	B
	Through	65	60	92.3%	16.9	4.2	B
	Right Turn	175	188	107.7%	9.7	2.5	A
	Subtotal	245	253	103.3%	11.6	2.5	B
WB	Left Turn	55	46	84.4%	19.4	4.5	B
	Through	155	154	99.1%	13.5	1.9	B
	Right Turn	45	44	97.8%	6.9	1.3	A
	Subtotal	255	244	95.7%	13.4	2.3	B
Total		1,585	1,334	84.2%	12.0	1.0	B

Intersection 12 **N 7th Street/N B Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	90	42	46.7%	202.9	24.7	F
	Through	300	105	35.1%	161.4	14.8	F
	Right Turn	950	357	37.6%	229.5	15.7	F
	Subtotal	1,340	504	37.6%	213.2	14.8	F
SB	Left Turn	325	203	62.4%	144.8	43.6	F
	Through	850	503	59.2%	52.3	6.7	D
	Right Turn	110	70	63.3%	47.2	9.0	D
	Subtotal	1,285	776	60.4%	76.4	15.0	E
EB	Left Turn	70	61	86.9%	120.5	31.4	F
	Through	500	299	59.8%	351.6	33.8	F
	Right Turn	30	18	61.3%	320.6	45.5	F
	Subtotal	600	378	63.0%	313.7	27.1	F
WB	Left Turn	440	251	57.0%	256.1	61.9	F
	Through	460	333	72.4%	148.6	36.7	F
	Right Turn	180	137	76.2%	136.3	48.7	F
	Subtotal	1,080	721	66.8%	183.6	39.3	F
Total		4,305	2,379	55.3%	174.8	10.6	F

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	10	10	100.0%	40.2	28.0	D
	Through	420	410	97.7%	22.6	2.7	C
	Right Turn	10	9	88.0%	23.6	18.6	C
	Subtotal	440	429	97.5%	23.2	2.7	C
SB	Left Turn						
	Through						
	Right Turn	35	20	56.0%	3.8	1.7	A
	Subtotal	35	20	56.0%	3.8	1.7	A
EB	Left Turn						
	Through	1,510	744	49.3%	36.5	4.4	D
	Right Turn	565	290	51.3%	39.7	4.6	D
	Subtotal	2,075	1,034	49.9%	37.4	4.4	D
SW	Left Turn	60	48	80.7%	18.1	5.5	B
	Through	1,350	940	69.6%	22.6	1.4	C
	Right Turn	835	583	69.8%	41.1	9.7	D
	Subtotal	2,245	1,571	70.0%	29.4	4.3	C
Total		4,795	3,054	63.7%	31.1	2.9	C

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	265	119	44.8%	404.3	17.3	F
	Through	885	356	40.3%	440.1	24.4	F
	Right Turn	175	65	37.3%	474.6	45.6	F
	Subtotal	1,325	540	40.8%	437.2	20.6	F
SB	Left Turn	30	21	69.3%	74.4	22.1	E
	Through	665	376	56.6%	42.0	6.5	D
	Right Turn	260	140	53.7%	35.4	5.5	D
	Subtotal	955	537	56.2%	41.5	5.6	D
EB	Left Turn	415	130	31.4%	514.6	63.5	F
	Through	470	170	36.1%	475.4	59.8	F
	Right Turn	640	359	56.1%	305.6	72.7	F
	Subtotal	1,525	659	43.2%	390.9	68.3	F
WB	Left Turn	400	320	80.0%	222.0	49.7	F
	Through	355	268	75.5%	221.8	56.0	F
	Right Turn	25	22	89.6%	212.0	63.3	F
	Subtotal	780	610	78.3%	222.0	51.4	F
Total		4,585	2,346	51.2%	275.5	22.6	F

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative No Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 16 **N 16th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn	75	60	80.0%	39.0	6.4	D
	Through	3,710	2,573	69.3%	46.5	1.8	D
	Right Turn	290	238	82.1%	12.6	2.8	B
	Subtotal	4,075	2,871	70.4%	43.6	1.9	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	990	550	55.6%	59.6	4.9	E
	Through	1,000	484	48.4%	26.4	3.6	C
	Right Turn						
	Subtotal	1,990	1,034	52.0%	44.1	3.4	D
WB	Left Turn						
	Through	925	592	64.0%	243.7	32.4	F
	Right Turn	560	378	67.4%	240.4	26.8	F
	Subtotal	1,485	970	65.3%	242.8	27.7	F
Total		7,550	4,875	64.6%	82.9	4.1	F

Intersection 17 **N 12th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
WB	Left Turn	30	16	54.7%	164.5	90.7	F
	Through	40	30	75.0%	57.7	10.2	E
	Right Turn						
	Subtotal	70	46	66.3%	89.8	30.9	F
SB	Left Turn	220	149	67.6%	147.6	32.4	F
	Through	3,090	1,882	60.9%	201.7	34.7	F
	Right Turn	425	197	46.4%	260.4	40.2	F
	Subtotal	3,735	2,228	59.6%	203.3	33.7	F
EB	Left Turn						
	Through	650	298	45.8%	113.7	13.7	F
	Right Turn	10	7	68.0%	79.5	59.9	E
	Subtotal	660	304	46.1%	113.3	13.9	F
SW	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,465	2,578	57.7%	190.0	27.5	F

Intersection 18 **N 16th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	10	5	52.0%	5.2	3.0	A
	Through						
	Right Turn	5,250	3,421	65.2%	21.6	1.1	C
	Subtotal	5,260	3,426	65.1%	21.6	1.1	C
SB	Left Turn						
	Through						
	Right Turn	1	3	280.0%	33.4	38.7	C
	Subtotal	1	3	280.0%	33.4	38.7	C
EB	Left Turn	600	262	43.7%	137.6	15.9	F
	Through	270	142	52.4%	34.1	5.8	C
	Right Turn						
	Subtotal	870	404	46.4%	101.5	12.4	F
WB	Left Turn						
	Through	60	52	86.7%	156.7	20.9	F
	Right Turn	460	398	86.4%	146.4	19.7	F
	Subtotal	520	450	86.5%	147.8	18.8	F
Total		6,651	4,283	64.4%	42.4	2.3	D

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1,825	798	43.7%	444.2	42.3	F
	Through	15	8	53.3%	449.1	102.9	F
	Right Turn	325	152	46.6%	391.4	45.0	F
	Subtotal	2,165	958	44.2%	436.0	40.1	F
EB	Left Turn						
	Through	120	128	106.7%	23.9	3.5	C
	Right Turn	80	81	101.5%	1.8	0.8	A
	Subtotal	200	209	104.6%	15.2	2.8	B
WB	Left Turn	670	563	84.1%	29.5	24.7	C
	Through	115	83	72.0%	5.8	1.5	A
	Right Turn						
	Subtotal	785	646	82.3%	26.4	21.4	C
Total		3,150	1,813	57.5%	240.5	19.7	F

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	60	38	63.3%	167.6	59.9	F
	Through	5	3	56.0%	199.8	112.8	F
	Right Turn	1,385	1,075	77.6%	223.0	58.2	F
	Subtotal	1,450	1,116	76.9%	221.3	58.4	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	140	109	77.7%	15.8	4.1	B
	Through	1,805	840	46.6%	78.1	13.4	E
	Right Turn						
	Subtotal	1,945	949	48.8%	70.6	10.7	E
WB	Left Turn						
	Through	725	582	80.3%	16.2	14.7	B
	Right Turn	910	741	81.4%	5.7	1.3	A
	Subtotal	1,635	1,323	80.9%	10.6	7.9	B
Total		5,030	3,388	67.3%	96.0	22.2	F

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	120	114	95.3%	41.6	21.0	D
	Through	50	45	90.4%	45.7	23.8	D
	Right Turn	20	23	116.0%	12.8	7.7	B
	Subtotal	190	183	96.2%	39.3	19.7	D
SB	Left Turn	40	34	84.0%	33.0	10.9	C
	Through	30	31	104.0%	33.4	7.3	C
	Right Turn	60	58	96.0%	14.5	15.6	B
	Subtotal	130	122	94.2%	24.0	9.3	C
EB	Left Turn	475	273	57.4%	64.8	7.4	E
	Through	1,820	1,118	61.4%	22.5	2.5	C
	Right Turn	895	552	61.6%	4.6	0.7	A
	Subtotal	3,190	1,942	60.9%	23.4	1.7	C
WB	Left Turn	120	95	79.0%	49.0	10.2	D
	Through	1,455	1,141	78.4%	28.6	22.7	C
	Right Turn	35	29	82.3%	24.5	20.6	C
	Subtotal	1,610	1,265	78.6%	30.0	21.5	C
Total		5,120	3,512	68.6%	26.4	8.8	C

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	50	46	91.2%	24.9	8.8	C
	Through	55	54	97.5%	31.7	5.9	C
	Right Turn	15	14	90.7%	17.6	11.2	B
	Subtotal	120	113	94.0%	27.6	5.4	C
SB	Left Turn	15	13	85.3%	25.7	18.2	C
	Through	40	43	108.0%	31.3	6.3	C
	Right Turn	200	183	91.6%	13.9	4.6	B
	Subtotal	255	239	93.8%	18.1	3.9	B
EB	Left Turn	130	71	54.8%	32.0	11.9	C
	Through	1,385	865	62.4%	19.9	2.9	B
	Right Turn	365	218	59.7%	19.5	4.0	B
	Subtotal	1,880	1,154	61.4%	20.5	2.4	C
WB	Left Turn	35	24	67.4%	33.2	12.1	C
	Through	1,360	1,040	76.5%	25.0	12.6	C
	Right Turn	85	62	72.9%	26.1	16.2	C
	Subtotal	1,480	1,126	76.1%	25.3	12.6	C
Total		3,735	2,632	70.5%	22.6	5.6	C

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	285	295	103.4%	28.4	2.7	C
	Through	275	278	101.1%	31.7	3.8	C
	Right Turn	25	28	110.4%	28.7	6.3	C
	Subtotal	585	600	102.6%	29.9	2.9	C
SB	Left Turn	150	80	53.1%	409.2	59.6	F
	Through	540	294	54.5%	410.7	30.5	F
	Right Turn	40	20	50.0%	412.5	62.3	F
	Subtotal	730	394	54.0%	411.1	35.8	F
EB	Left Turn	80	52	65.0%	51.3	6.5	D
	Through	1,330	816	61.3%	10.9	2.3	B
	Right Turn	5	3	64.0%	3.0	3.7	A
	Subtotal	1,415	871	61.5%	13.3	2.2	B
WB	Left Turn	35	26	73.1%	56.0	16.7	E
	Through	1,155	844	73.1%	43.7	8.0	D
	Right Turn	165	122	73.7%	44.7	10.9	D
	Subtotal	1,355	991	73.2%	44.1	8.1	D
Total		4,085	2,856	69.9%	82.4	6.6	F

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	26	128.0%	38.0	15.1	D
	Through	125	128	102.4%	33.7	12.6	C
	Right Turn	225	198	87.8%	20.5	15.7	C
	Subtotal	370	351	94.9%	26.6	13.9	C
SB	Left Turn	70	59	84.0%	31.5	7.1	C
	Through	125	114	91.5%	25.5	4.3	C
	Right Turn	115	117	101.9%	16.3	4.7	B
	Subtotal	310	290	93.7%	23.1	3.9	C
EB	Left Turn	5	3	56.0%	15.7	27.4	B
	Through	1,490	934	62.7%	16.6	11.7	B
	Right Turn	10	6	56.0%	6.6	4.5	A
	Subtotal	1,505	942	62.6%	16.6	11.7	B
WB	Left Turn	240	166	69.2%	46.7	10.0	D
	Through	1,220	896	73.4%	10.5	3.6	B
	Right Turn	5	7	136.0%	7.2	8.7	A
	Subtotal	1,465	1,069	73.0%	16.1	4.1	B
Total		3,650	2,652	72.7%	18.3	6.3	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	240	253	105.3%	52.6	5.5	D
	Through	260	244	93.7%	52.0	14.7	D
	Right Turn	150	140	93.1%	43.1	17.6	D
	Subtotal	650	636	97.8%	50.4	10.9	D
SB	Left Turn	25	23	91.2%	68.4	34.4	E
	Through	210	214	101.7%	44.1	7.3	D
	Right Turn	30	35	117.3%	41.1	10.1	D
	Subtotal	265	272	102.5%	45.5	7.2	D
EB	Left Turn	170	120	70.8%	96.3	15.9	F
	Through	1,000	688	68.8%	85.4	15.3	F
	Right Turn	185	125	67.7%	83.7	23.7	F
	Subtotal	1,355	934	68.9%	86.2	14.7	F
WB	Left Turn	410	214	52.2%	69.4	10.1	E
	Through	1,155	648	56.1%	39.6	7.3	D
	Right Turn	25	14	57.6%	31.9	14.3	C
	Subtotal	1,590	876	55.1%	46.8	5.8	D
Total		3,860	2,718	70.4%	60.7	6.3	E

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	15	7	48.0%	119.0	125.7	F
	Through	45	20	44.4%	97.5	59.2	F
	Right Turn	370	188	50.9%	154.9	33.6	F
	Subtotal	430	216	50.1%	148.2	33.7	F
SB	Left Turn	150	72	47.7%	192.9	71.8	F
	Through	20	12	58.0%	114.0	96.0	F
	Right Turn	45	35	78.2%	102.3	68.5	F
	Subtotal	215	118	55.1%	155.2	67.7	F
EB	Left Turn	120	78	65.0%	160.0	43.3	F
	Through	1,050	486	46.3%	188.0	39.3	F
	Right Turn	5	4	80.0%	121.6	82.4	F
	Subtotal	1,175	568	48.3%	183.9	39.1	F
WB	Left Turn	135	80	59.6%	45.4	10.7	D
	Through	1,650	972	58.9%	29.4	3.9	C
	Right Turn	190	112	58.7%	28.4	4.9	C
	Subtotal	1,975	1,164	58.9%	30.4	3.7	C
Total		3,795	2,066	54.4%	89.7	11.6	F

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	35	23	65.1%	88.1	32.5	F
	Through	25	16	62.4%	247.3	132.0	F
	Right Turn	440	245	55.7%	262.0	124.2	F
	Subtotal	500	284	56.7%	247.5	111.2	F
SB	Left Turn	115	89	77.6%	178.3	68.4	F
	Through	5	5	104.0%	40.6	54.4	D
	Right Turn	75	54	72.5%	54.1	38.3	D
	Subtotal	195	149	76.3%	127.6	54.2	F
EB	Left Turn	80	31	39.0%	205.3	70.8	F
	Through	1,450	530	36.6%	231.4	47.5	F
	Right Turn	40	16	39.0%	206.0	53.8	F
	Subtotal	1,570	577	36.7%	229.2	46.4	F
WB	Left Turn	120	69	57.3%	78.1	14.1	E
	Through	1,865	1,126	60.4%	31.7	10.6	C
	Right Turn	65	34	51.7%	27.2	12.3	C
	Subtotal	2,050	1,228	59.9%	34.1	9.9	C
Total		4,315	2,238	51.9%	110.8	11.2	F

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	385	285	74.1%	29.3	10.1	C
	Through	2,340	1,523	65.1%	22.8	2.8	C
	Right Turn	1,055	603	57.2%	18.4	2.4	B
	Subtotal	3,780	2,411	63.8%	22.5	2.3	C
EB	Left Turn						
	Through	1,550	568	36.6%	88.9	6.9	F
	Right Turn	470	178	37.9%	92.3	10.8	F
	Subtotal	2,020	746	36.9%	89.8	7.4	F
WB	Left Turn	245	196	79.8%	83.4	19.2	F
	Through	920	624	67.8%	38.0	3.9	D
	Right Turn						
	Subtotal	1,165	819	70.3%	48.9	6.6	D
Total		6,965	3,976	57.1%	40.4	2.1	D

Intersection 11 **N 7th Street/Project Driveway-Bannon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	180	135	75.1%	36.8	7.5	D
	Through	400	319	79.8%	11.6	1.6	B
	Right Turn	20	15	76.0%	9.0	9.7	A
	Subtotal	600	470	78.3%	18.8	3.7	B
SB	Left Turn	35	24	68.6%	44.7	10.7	D
	Through	515	346	67.1%	24.7	5.9	C
	Right Turn	255	177	69.3%	20.0	4.2	C
	Subtotal	805	546	67.9%	24.1	5.4	C
EB	Left Turn	140	139	99.1%	33.5	5.5	C
	Through	20	16	82.0%	29.5	13.8	C
	Right Turn	95	97	102.3%	9.3	3.7	A
	Subtotal	255	252	99.0%	24.1	5.0	C
WB	Left Turn	215	215	99.9%	31.0	5.1	C
	Through	75	82	109.3%	30.8	6.5	C
	Right Turn	110	110	100.0%	16.3	6.8	B
	Subtotal	400	407	101.7%	27.2	4.4	C
Total		2,060	1,675	81.3%	23.5	3.4	C

Intersection 12 **N 7th Street/N B Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	60	49	81.3%	74.5	8.7	E
	Through	315	259	82.2%	40.6	5.6	D
	Right Turn	245	221	90.1%	49.9	13.2	D
	Subtotal	620	528	85.2%	48.2	7.0	D
SB	Left Turn	150	108	71.7%	56.4	10.0	E
	Through	515	414	80.4%	38.5	4.5	D
	Right Turn	160	123	76.8%	41.0	9.2	D
	Subtotal	825	644	78.1%	42.1	5.4	D
EB	Left Turn	105	62	58.7%	364.2	72.1	F
	Through	405	238	58.8%	359.5	65.2	F
	Right Turn	35	25	70.9%	338.2	82.7	F
	Subtotal	545	324	59.5%	358.7	62.3	F
WB	Left Turn	735	459	62.4%	164.2	40.3	F
	Through	535	418	78.1%	83.5	29.2	F
	Right Turn	180	132	73.1%	82.1	32.6	F
	Subtotal	1,450	1,008	69.5%	120.2	32.1	F
Total		3,440	2,506	72.8%	115.9	18.9	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
WB	Left Turn	30	40	132.0%	49.3	13.7	D
	Through	550	572	104.0%	24.2	2.2	C
	Right Turn	35	38	108.6%	21.8	3.8	C
	Subtotal	615	650	105.6%	25.5	2.1	C
SB	Left Turn						
	Through						
	Right Turn	85	51	60.2%	7.3	8.5	A
	Subtotal	85	51	60.2%	7.3	8.5	A
EB	Left Turn						
	Through	915	733	80.1%	74.3	24.1	E
	Right Turn	390	318	81.6%	79.8	24.8	E
	Subtotal	1,305	1,052	80.6%	75.9	24.2	E
SW	Left Turn	40	23	57.0%	19.6	7.0	B
	Through	1,940	1,321	68.1%	27.2	3.7	C
	Right Turn	885	576	65.1%	45.4	14.4	D
	Subtotal	2,865	1,920	67.0%	32.8	7.0	C
Total		4,870	3,672	75.4%	43.6	8.3	D

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	310	260	83.7%	200.0	55.6	F
	Through	470	432	91.8%	89.9	20.9	F
	Right Turn	420	403	96.0%	72.5	20.9	E
	Subtotal	1,200	1,094	91.2%	109.9	23.3	F
SB	Left Turn	25	20	81.6%	50.8	12.6	D
	Through	615	428	69.6%	29.9	4.5	C
	Right Turn	335	223	66.5%	25.3	5.6	C
	Subtotal	975	671	68.8%	29.2	4.1	C
EB	Left Turn	275	212	77.1%	242.1	47.0	F
	Through	445	352	79.2%	204.6	32.4	F
	Right Turn	435	411	94.4%	28.4	11.2	C
	Subtotal	1,155	975	84.4%	138.7	24.0	F
WB	Left Turn	460	310	67.5%	225.1	9.1	F
	Through	390	272	69.6%	166.0	9.3	F
	Right Turn	25	18	73.6%	192.8	30.4	F
	Subtotal	875	600	68.6%	197.7	6.0	F
Total		4,205	3,341	79.5%	117.9	10.3	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 15 **North Project Driveway/Richards Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	190	190	100.0%	33.5	4.7	C
	Through						
	Right Turn	30	28	92.0%	30.2	23.9	C
	Subtotal	220	218	98.9%	33.0	6.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,325	832	62.8%	19.3	16.3	B
	Right Turn	460	290	63.0%	17.6	13.7	B
	Subtotal	1,785	1,122	62.9%	18.8	15.6	B
WB	Left Turn	150	96	63.7%	39.7	5.9	D
	Through	1,275	874	68.5%	5.7	0.8	A
	Right Turn						
	Subtotal	1,425	969	68.0%	9.1	1.5	A
Total		3,430	2,309	67.3%	15.7	7.3	B

Intersection 16 **N 16th St/Richards Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	80	88	109.5%	38.7	12.4	D
	Through	1,545	1,688	109.3%	34.0	2.1	C
	Right Turn	150	153	101.9%	5.4	1.0	A
	Subtotal	1,775	1,928	108.6%	31.9	2.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	905	382	42.3%	64.6	8.8	E
	Through	1,030	450	43.7%	24.9	5.9	C
	Right Turn						
	Subtotal	1,935	832	43.0%	43.2	7.7	D
WB	Left Turn						
	Through	1,085	764	70.4%	180.0	59.3	F
	Right Turn	385	294	76.4%	155.2	62.0	F
	Subtotal	1,470	1,058	71.9%	172.9	60.1	F
Total		5,180	3,818	73.7%	72.5	13.9	E

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 17 **N 12th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
WB	Left Turn	80	69	86.0%	183.7	66.5	F
	Through	70	68	96.6%	117.4	52.9	F
	Right Turn						
	Subtotal	150	136	90.9%	152.1	60.0	F
SB	Left Turn	450	290	64.4%	196.4	19.5	F
	Through	3,685	2,221	60.3%	225.2	22.3	F
	Right Turn	810	434	53.6%	266.6	33.7	F
	Subtotal	4,945	2,946	59.6%	228.4	23.3	F
EB	Left Turn						
	Through	390	274	70.4%	103.9	10.4	F
	Right Turn	15	13	88.0%	106.6	29.6	F
	Subtotal	405	288	71.0%	104.0	10.4	F
SW	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		5,500	3,370	61.3%	214.4	19.8	F

Intersection 18 **N 16th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	18	60.0%	5.4	5.2	A
	Through						
	Right Turn	2,805	2,388	85.1%	4.9	0.5	A
	Subtotal	2,835	2,406	84.9%	4.9	0.5	A
SB	Left Turn						
	Through						
	Right Turn	1	4	360.0%	27.9	33.6	C
	Subtotal	1	4	360.0%	27.9	33.6	C
EB	Left Turn	350	199	56.8%	103.9	18.3	F
	Through	490	282	57.6%	67.2	4.7	E
	Right Turn						
	Subtotal	840	481	57.2%	82.2	8.4	F
WB	Left Turn						
	Through	120	108	90.0%	76.7	14.7	E
	Right Turn	245	228	93.1%	49.5	11.2	D
	Subtotal	365	336	92.1%	58.4	11.4	E
Total		4,041	3,227	79.9%	22.1	2.3	C

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Cumulative Plus Project Conditions**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1,010	931	92.2%	81.8	56.3	F
	Through	220	205	93.1%	90.3	57.3	F
	Right Turn	190	178	93.5%	32.8	40.3	C
	Subtotal	1,420	1,314	92.5%	76.7	54.1	E
EB	Left Turn						
	Through	845	595	70.4%	271.7	27.8	F
	Right Turn	145	140	96.3%	36.9	20.7	D
	Subtotal	990	734	74.2%	227.1	23.0	F
WB	Left Turn	785	501	63.8%	9.5	3.0	A
	Through	90	80	88.9%	2.7	1.0	A
	Right Turn						
	Subtotal	875	581	66.4%	8.6	2.6	A
Total		3,285	2,629	80.0%	103.1	29.8	F

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	60	53	88.7%	28.4	6.1	C
	Through	15	15	101.3%	55.0	37.7	D
	Right Turn	490	460	94.0%	30.2	11.1	C
	Subtotal	565	529	93.6%	30.4	9.8	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	670	446	66.6%	27.4	6.5	C
	Through	1,185	1,122	94.6%	27.1	17.2	C
	Right Turn						
	Subtotal	1,855	1,568	84.5%	26.8	11.4	C
WB	Left Turn						
	Through	815	523	64.1%	10.1	1.3	B
	Right Turn	1,360	795	58.4%	12.0	1.9	B
	Subtotal	2,175	1,318	60.6%	11.3	1.3	B
Total		4,595	3,414	74.3%	21.2	5.9	C

Intersection 3 **Bercut Drive/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	275	248	90.0%	80.3	49.3	F
	Through	45	37	81.8%	84.6	62.3	F
	Right Turn	125	126	100.8%	20.7	6.3	C
	Subtotal	445	410	92.2%	62.6	36.0	E
SB	Left Turn	60	55	91.3%	36.7	5.8	D
	Through	85	84	98.4%	36.6	4.3	D
	Right Turn	100	99	98.8%	12.2	2.4	B
	Subtotal	245	237	96.8%	26.7	3.4	C
EB	Left Turn	55	56	101.1%	31.6	8.8	C
	Through	1,155	1,082	93.6%	27.0	6.5	C
	Right Turn	465	452	97.2%	3.6	0.5	A
	Subtotal	1,675	1,589	94.9%	20.6	4.6	C
WB	Left Turn	120	65	54.3%	35.5	6.3	D
	Through	1,800	946	52.6%	61.1	6.0	E
	Right Turn	20	11	54.0%	78.1	28.5	E
	Subtotal	1,940	1,022	52.7%	59.7	5.8	E
Total		4,305	3,259	75.7%	38.5	4.7	D

Intersection 4 **N 3rd Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	180	193	107.3%	74.8	28.2	E
	Through	25	27	107.2%	16.1	6.2	B
	Right Turn	15	14	90.7%	10.4	5.9	B
	Subtotal	220	234	106.2%	63.5	20.8	E
SB	Left Turn	50	55	110.4%	30.1	5.0	C
	Through	10	11	112.0%	28.6	9.9	C
	Right Turn	225	228	101.3%	24.2	4.5	C
	Subtotal	285	294	103.3%	25.6	3.7	C
EB	Left Turn	220	184	83.6%	68.3	10.7	E
	Through	1,065	921	86.5%	69.2	15.1	E
	Right Turn	55	47	85.1%	71.4	18.6	E
	Subtotal	1,340	1,152	85.9%	69.1	13.9	E
WB	Left Turn	5	2	32.0%	13.4	23.6	B
	Through	1,535	568	37.0%	126.9	14.1	F
	Right Turn	5	3	56.0%	57.2	64.2	E
	Subtotal	1,545	572	37.0%	126.6	13.8	F
Total		3,390	2,252	66.4%	77.1	9.3	E

Intersection 5 **Sequoia Pacific Boulevard/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	230	226	98.1%	34.5	12.1	C
	Through	410	398	97.0%	91.3	47.5	F
	Right Turn	25	26	105.6%	87.0	48.9	F
	Subtotal	665	650	97.7%	71.2	29.7	E
SB	Left Turn	240	117	48.8%	359.9	86.7	F
	Through	375	210	56.0%	333.6	86.6	F
	Right Turn	80	55	68.5%	345.7	80.6	F
	Subtotal	695	382	55.0%	343.5	84.9	F
EB	Left Turn	45	45	99.6%	80.1	18.0	F
	Through	940	721	76.7%	75.6	22.1	E
	Right Turn	145	112	77.0%	77.4	30.6	E
	Subtotal	1,130	878	77.7%	76.0	22.1	E
WB	Left Turn	10	3	28.0%	86.0	83.9	F
	Through	1,235	306	24.8%	235.7	43.4	F
	Right Turn	210	44	21.1%	314.0	71.5	F
	Subtotal	1,455	353	24.3%	245.5	43.6	F
Total		3,945	2,262	57.3%	143.9	21.6	F

Intersection 6 **N 5th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	5	48.0%	276.1	247.2	F
	Through	140	103	73.4%	138.2	62.1	F
	Right Turn	230	176	76.5%	133.4	55.0	F
	Subtotal	380	284	74.6%	136.7	57.5	F
SB	Left Turn	15	10	69.3%	233.8	115.8	F
	Through	150	114	75.7%	197.3	101.4	F
	Right Turn	125	71	57.0%	259.7	111.3	F
	Subtotal	290	195	67.3%	222.3	94.5	F
EB	Left Turn	105	74	70.1%	108.0	15.1	F
	Through	1,080	720	66.6%	127.4	21.7	F
	Right Turn	20	12	58.0%	143.8	67.8	F
	Subtotal	1,205	805	66.8%	126.1	20.7	F
WB	Left Turn	280	50	17.7%	206.6	34.2	F
	Through	1,320	282	21.4%	293.1	67.5	F
	Right Turn	35	6	18.3%	290.6	174.8	F
	Subtotal	1,635	338	20.7%	282.6	60.6	F
Total		3,510	1,622	46.2%	166.3	22.4	F

Intersection 7 **N 7th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	230	223	97.0%	57.0	7.0	E
	Through	215	184	85.4%	77.7	20.3	E
	Right Turn	280	268	95.6%	68.1	22.6	E
	Subtotal	725	674	93.0%	67.2	14.4	E
SB	Left Turn	80	61	76.0%	144.3	37.8	F
	Through	405	327	80.8%	121.6	34.8	F
	Right Turn	50	48	96.8%	36.9	15.8	D
	Subtotal	535	436	81.6%	115.2	31.9	F
EB	Left Turn	5	4	80.0%	60.1	52.9	E
	Through	710	550	77.5%	93.9	12.8	F
	Right Turn	370	265	71.7%	107.5	13.7	F
	Subtotal	1,085	820	75.5%	98.4	11.6	F
WB	Left Turn	495	169	34.1%	183.9	46.7	F
	Through	1,120	639	57.0%	64.8	24.4	E
	Right Turn	15	7	48.0%	43.5	25.2	D
	Subtotal	1,630	815	50.0%	88.8	28.0	F
Total		3,975	2,745	69.1%	90.2	10.8	F

Intersection 8 **N 10th Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	10	10	96.0%	33.3	19.4	C
	Through	40	36	91.0%	29.3	10.0	C
	Right Turn	155	146	94.5%	55.0	36.5	E
	Subtotal	205	192	93.9%	48.4	28.6	D
SB	Left Turn	365	167	45.7%	225.0	65.4	F
	Through	75	41	54.4%	204.3	72.8	F
	Right Turn	150	82	54.7%	195.0	69.9	F
	Subtotal	590	290	49.1%	212.9	66.5	F
EB	Left Turn	40	29	72.0%	101.6	53.0	F
	Through	1,085	666	61.4%	124.7	34.7	F
	Right Turn	80	56	70.0%	93.0	42.8	F
	Subtotal	1,205	751	62.3%	121.5	34.8	F
WB	Left Turn	310	173	55.9%	52.5	11.2	D
	Through	1,450	836	57.6%	23.4	13.5	C
	Right Turn	115	69	60.2%	13.8	6.7	B
	Subtotal	1,875	1,078	57.5%	27.5	12.3	C
Total		3,875	2,311	59.6%	80.4	17.8	F

Intersection 9 **Dos Rios Street/Richards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	45	45	100.4%	53.9	19.7	D
	Through	5	3	64.0%	92.5	94.3	F
	Right Turn	400	244	61.0%	187.3	37.4	F
	Subtotal	450	292	65.0%	167.2	35.8	F
SB	Left Turn	45	37	81.8%	69.3	24.4	E
	Through	5	6	128.0%	25.3	24.1	C
	Right Turn	60	67	111.3%	13.4	5.7	B
	Subtotal	110	110	100.0%	33.5	9.8	C
EB	Left Turn	35	19	53.7%	158.8	41.0	F
	Through	1,540	744	48.3%	168.1	25.9	F
	Right Turn	30	16	54.7%	198.1	53.4	F
	Subtotal	1,605	779	48.5%	168.9	25.0	F
WB	Left Turn	50	30	59.2%	72.5	34.7	E
	Through	1,770	1,052	59.4%	17.4	11.2	B
	Right Turn	40	21	53.0%	15.6	11.2	B
	Subtotal	1,860	1,102	59.3%	18.7	11.0	B
Total		4,025	2,284	56.7%	88.3	10.7	F

Intersection 10 **N 12th St/Richard Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	420	247	58.9%	50.4	9.7	D
	Through	1,715	1,041	60.7%	46.0	9.6	D
	Right Turn	1,030	490	47.5%	37.0	4.2	D
	Subtotal	3,165	1,778	56.2%	44.1	7.3	D
EB	Left Turn						
	Through	1,655	793	47.9%	56.0	10.8	E
	Right Turn	520	250	48.1%	58.2	11.8	E
	Subtotal	2,175	1,043	48.0%	56.5	10.6	E
WB	Left Turn	125	86	68.8%	136.5	36.5	F
	Through	890	695	78.1%	35.8	6.6	D
	Right Turn						
	Subtotal	1,015	781	77.0%	47.3	10.1	D
Total		6,355	3,602	56.7%	48.0	2.7	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative Plus Project Conditions
PM Peak Hour

Intersection 11 **N 7th Street/Project Driveway-Bannon St** **Signal**

		Demand	Served Volume (vph)		al Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	100	56	56.4%	30.5	4.7	C
	Through	335	180	53.6%	15.6	3.2	B
	Right Turn	110	68	61.8%	10.2	2.5	B
	Subtotal	545	304	55.8%	17.2	3.0	B
SB	Left Turn	100	57	56.8%	46.7	5.2	D
	Through	1,115	588	52.7%	35.6	8.3	D
	Right Turn	55	27	49.5%	32.7	15.2	C
	Subtotal	1,270	672	52.9%	36.5	7.8	D
EB	Left Turn	325	312	96.0%	36.8	16.5	D
	Through	150	152	101.3%	22.5	5.2	C
	Right Turn	165	163	98.9%	18.6	10.1	B
	Subtotal	640	627	98.0%	28.6	11.8	C
WB	Left Turn	15	20	136.0%	33.8	12.7	C
	Through	50	58	116.0%	25.3	7.1	C
	Right Turn	65	64	98.5%	11.3	3.8	B
	Subtotal	130	142	109.5%	20.1	4.6	C
Total		2,585	1,746	67.5%	29.0	5.7	C

Intersection 12 **N 7th Street/N B Street** **Signal**

		Demand	Served Volume (vph)		Total Delay (sec/veh)		
Direction	Movement	Volume (vph)	Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	85	36	42.4%	198.7	33.1	F
	Through	220	88	40.2%	174.8	28.9	F
	Right Turn	940	392	41.7%	238.2	23.8	F
	Subtotal	1,245	517	41.5%	224.5	23.9	F
SB	Left Turn	250	150	60.2%	95.6	18.2	F
	Through	875	504	57.6%	50.1	4.1	D
	Right Turn	170	101	59.5%	61.4	16.0	E
	Subtotal	1,295	756	58.4%	60.9	7.5	E
EB	Left Turn	145	82	56.6%	353.9	60.8	F
	Through	410	280	68.4%	319.0	25.2	F
	Right Turn	60	40	67.3%	316.5	35.8	F
	Subtotal	615	403	65.5%	326.1	25.4	F
WB	Left Turn	400	243	60.8%	226.2	73.6	F
	Through	475	334	70.2%	145.3	37.8	F
	Right Turn	180	132	73.6%	140.0	43.0	F
	Subtotal	1,055	709	67.2%	172.1	34.7	F
Total		4,210	2,385	56.6%	174.2	9.7	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Richards DGS
Cumulative Plus Project Conditions
PM Peak Hour

Intersection 13 **Dos Rios Street/N B Street-N 12th Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
WB	Left Turn	10	9	88.0%	42.2	21.0	D
	Through	465	469	100.9%	21.9	3.1	C
	Right Turn	5	5	104.0%	20.2	18.1	C
	Subtotal	480	483	100.7%	22.5	2.8	C
SB	Left Turn						
	Through						
	Right Turn	35	18	52.6%	1.8	0.9	A
	Subtotal	35	18	52.6%	1.8	0.9	A
EB	Left Turn						
	Through	1,470	736	50.0%	34.8	3.9	C
	Right Turn	575	291	50.6%	34.5	5.2	C
	Subtotal	2,045	1,027	50.2%	34.7	4.2	C
SW	Left Turn	65	38	58.5%	18.9	8.2	B
	Through	1,420	937	66.0%	22.2	2.6	C
	Right Turn	835	528	63.3%	36.1	17.5	D
	Subtotal	2,320	1,504	64.8%	27.3	8.3	C
Total		4,880	3,032	62.1%	29.0	4.4	C

Intersection 14 **N 7th Street/Railyards Boulevard** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	270	120	44.3%	380.3	55.7	F
	Through	780	299	38.4%	442.1	47.2	F
	Right Turn	255	84	32.8%	462.6	51.0	F
	Subtotal	1,305	502	38.5%	431.5	47.7	F
SB	Left Turn	40	24	61.0%	73.4	20.5	E
	Through	665	393	59.1%	40.5	4.7	D
	Right Turn	255	139	54.6%	33.0	6.0	C
	Subtotal	960	557	58.0%	40.2	4.7	D
EB	Left Turn	365	122	33.4%	467.8	29.9	F
	Through	505	203	40.2%	424.9	20.6	F
	Right Turn	550	349	63.4%	217.6	40.3	F
	Subtotal	1,420	674	47.4%	325.0	30.1	F
WB	Left Turn	380	315	82.9%	207.1	44.1	F
	Through	365	314	86.0%	206.4	35.6	F
	Right Turn	25	18	72.0%	236.1	83.1	F
	Subtotal	770	647	84.1%	207.8	40.3	F
Total		4,455	2,380	53.4%	247.8	19.0	F

Intersection 15 **North Project Driveway/Richards Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	420	39	9.3%	609.5	165.2	F
	Through						
	Right Turn	20	7	36.0%	57.3	92.3	E
	Subtotal	440	46	10.5%	433.3	206.1	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,065	706	66.3%	84.8	13.0	F
	Right Turn	260	188	72.3%	102.4	14.6	F
	Subtotal	1,325	894	67.5%	88.6	12.1	F
WB	Left Turn	185	52	28.1%	60.7	20.6	E
	Through	1,215	344	28.3%	208.6	67.7	F
	Right Turn						
	Subtotal	1,400	396	28.3%	189.3	59.1	F
Total		3,165	1,337	42.2%	125.9	11.5	F

Intersection 16 **N 16th St/Richards Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	75	59	78.9%	31.1	10.6	C
	Through	3,790	2,645	69.8%	44.9	1.9	D
	Right Turn	275	230	83.5%	12.4	3.5	B
	Subtotal	4,140	2,934	70.9%	42.1	1.6	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	985	527	53.5%	55.4	5.2	E
	Through	1,090	506	46.5%	24.9	3.9	C
	Right Turn						
	Subtotal	2,075	1,033	49.8%	40.5	4.1	D
WB	Left Turn						
	Through	940	647	68.8%	206.4	33.5	F
	Right Turn	445	326	73.3%	196.4	32.0	F
	Subtotal	1,385	973	70.2%	203.2	31.9	F
Total		7,600	4,940	65.0%	73.3	5.2	E

Intersection 17 **N 12th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
WB	Left Turn	35	18	50.3%	136.7	63.2	F
	Through	45	34	74.7%	56.7	5.4	E
	Right Turn						
	Subtotal	80	51	64.0%	85.2	29.1	F
SB	Left Turn	200	137	68.4%	143.1	22.0	F
	Through	3,125	1,871	59.9%	199.2	27.1	F
	Right Turn	470	211	44.9%	260.1	28.1	F
	Subtotal	3,795	2,219	58.5%	201.7	26.3	F
EB	Left Turn						
	Through	655	302	46.0%	113.4	12.0	F
	Right Turn	5	2	40.0%	60.4	66.2	E
	Subtotal	660	304	46.0%	113.5	12.0	F
SW	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		4,535	2,574	56.7%	188.5	21.7	F

Intersection 18 **N 16th St/Vine St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	10	8	76.0%	12.2	13.2	B
	Through						
	Right Turn	5,210	3,430	65.8%	20.8	1.5	C
	Subtotal	5,220	3,438	65.9%	20.8	1.5	C
SB	Left Turn						
	Through						
	Right Turn	1	5	520.0%	40.6	50.2	D
	Subtotal	1	5	520.0%	40.6	50.2	D
EB	Left Turn	620	273	44.0%	143.3	18.5	F
	Through	235	120	51.1%	41.9	8.7	D
	Right Turn						
	Subtotal	855	393	45.9%	112.2	14.6	F
WB	Left Turn						
	Through	70	51	72.6%	213.7	52.6	F
	Right Turn	570	405	71.1%	219.1	28.1	F
	Subtotal	640	456	71.3%	218.4	29.7	F
Total		6,716	4,292	63.9%	50.1	3.6	D

SimTraffic Post-Processor **Richards DGS**
Average Results from 10 Runs **Existing Conditions**
Queue Length **AM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	1,350	125	15	175	23	175	26	0%	0%
	Right Turn	150	25	3	25	13	25	18	0%	0%
SB	Left Turn	325	150	25	225	47	225	46	0%	0%
	Left/Through	1,050	200	20	275	32	250	34	0%	0%
	Right Turn	325	100	12	150	27	150	31	0%	0%
WB	Left Turn	1,300	75	22	125	40	125	44	0%	0%
	Through	300	50	8	75	17	75	20	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	150	20	225	41	200	41	0%	0%
	Through	325	100	26	175	52	175	42	0%	0%
NB	Left/Through	325	50	10	75	17	75	18	0%	0%
	Right Turn	1,150	175	22	275	47	275	53	0%	0%
WB	Through	200	100	15	150	35	150	39	0%	0%

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	2,800	575	416	875	452	900	451	57%	0%
	Right Turn	150	25	4	25	19	25	27	0%	0%
SB	Left Turn	325	150	31	275	38	250	36	0%	0%
	Left/Through	1,050	225	24	325	36	325	41	1%	0%
	Right Turn	325	75	12	125	21	125	21	0%	0%
WB	Left Turn	1,300	125	16	200	34	200	36	0%	0%
	Through	300	50	10	100	18	100	20	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	250	50	325	34	300	9	0%	5%
	Through	325	25	8	50	30	50	38	0%	0%
NB	Left/Through	325	50	13	100	26	100	25	0%	0%
	Right Turn	1,150	75	9	100	16	125	16	0%	0%
WB	Through	200	100	23	175	45	175	43	0%	1%
	Right Turn	200	25	3	25	15	25	21	0%	0%

SimTraffic Post-Processor | **Richards DGS**
Average Results from 10 Runs | **Baseline Plus Project Conditions**
Queue Length | **AM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	1,350	100	20	150	31	150	35	0%	0%
SB	Left Turn	325	275	75	400	101	375	102	8%	0%
	Left/Through	1,050	375	129	600	291	625	333	15%	1%
	Right Turn	325	175	77	350	180	325	140	0%	0%
WB	Left Turn	1,300	100	16	150	29	150	30	0%	0%
	Through	300	50	11	100	19	100	26	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	125	18	200	28	200	32	0%	0%
	Through	325	225	37	325	108	300	121	5%	5%
NB	Left/Through	325	200	85	525	121	475	0	0%	0%
	Right Turn	4,525	1,900	720	2,775	801	2,725	819	78%	0%
WB	Through	200	125	18	200	31	200	30	0%	1%

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

Richards DGS
Baseline Plus Project
PM Peak Hour

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	2,800	1,000	502	1,375	678	1,350	633	78%	0%
	Right Turn	150	25	13	75	48	75	62	0%	0%
SB	Left Turn	325	225	44	325	50	325	42	0%	0%
	Left/Through	1,050	275	36	375	65	400	67	5%	0%
	Right Turn	325	75	30	150	112	175	154	0%	0%
WB	Left Turn	1,300	125	30	200	58	200	64	0%	0%
	Through	300	50	11	75	23	75	23	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

		Storage	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group	(ft)	Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	250	32	375	17	325	4	0%	6%
	Through	325	50	26	125	60	175	94	1%	1%
NB	Left/Through	325	50	9	75	17	75	23	0%	0%
	Right Turn	1,475	125	28	175	61	200	108	1%	0%
WB	Through	200	100	20	175	41	175	36	0%	1%
	Right Turn	200	25	21	75	70	75	83	0%	0%

SimTraffic Post-Processor | **Richards DGS**
Average Results from 10 Runs | **Cumulative No Project Conditions**
Queue Length | **AM Peak Hour**

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	1,350	75	10	100	18	100	21	0%	0%
	Through/Right	1,350	25	10	50	37	75	43	0%	0%
SB	Left Turn	7,125	4,075	758	5,950	1,031	6,100	866	95%	3%
	Left/Through	7,125	3,950	657	5,625	866	5,600	832	96%	2%
	Right Turn	325	450	41	475	64	475	0	0%	0%
WB	Left Turn	1,300	150	44	250	72	225	63	0%	2%
	Through	300	50	12	75	22	75	22	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	50	12	100	17	100	18	0%	0%
	Through	300	325	20	400	41	350	12	0%	43%
NB	Left Turn	325	150	108	375	232	375	196	0%	0%
	Through/Right	2,925	450	170	575	203	600	188	54%	0%
	Right Turn	2,925	425	196	575	237	575	243	49%	0%
WB	Through	200	75	17	125	26	125	36	0%	0%
	Through/Right	200	100	16	150	26	175	29	0%	0%
	Right Turn	200	75	20	150	37	150	45	0%	0%

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Through	3,825	2,125	422	2,900	559	2,950	539	79%	0%
	Through/Right	3,825	1,350	583	2,675	681	2,700	595	0%	0%
SB	Left Turn	4,425	350	131	525	250	575	292	24%	0%
	Left/Through	4,425	375	137	550	237	600	264	32%	0%
	Right Turn	325	175	108	350	243	325	189	0%	0%
WB	Left Turn	1,300	75	33	125	52	150	51	0%	0%
	Through	300	25	5	25	15	25	16	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft) Average	Average Queue (ft) Std. Dev.	95th Queue (ft) Average	95th Queue (ft) Std. Dev.	Maximum Queue (ft) Average	Maximum Queue (ft) Std. Dev.	Block Time Pocket	Block Time Upstream
EB	Left Turn	300	175	39	325	46	300	11	0%	3%
	Through	300	225	68	350	71	325	32	0%	9%
NB	Left Turn	325	50	25	125	89	125	126	0%	0%
	Through/Right	1,125	175	71	300	161	300	159	8%	0%
	Right Turn	1,125	150	66	250	153	275	154	6%	0%
WB	Through	200	75	23	125	29	125	26	0%	0%
	Right Turn	200	175	12	225	12	200	8	0%	5%

SimTraffic Post-Processor
Average Results from 10 Runs
Queue Length

Richards DGS
Cumulative Plus Project Conditions
AM Peak Hour

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	1,350	75	16	125	22	125	25	0%	0%
	Through/Right	1,350	25	10	50	32	75	38	0%	0%
SB	Left Turn	7,125	5,300	553	7,400	641	7,100	149	95%	17%
	Left/Through	7,125	4,950	501	6,700	700	6,775	609	95%	8%
	Right Turn	325	425	48	575	94	475	0	0%	0%
WB	Left Turn	1,300	175	60	250	92	250	67	0%	3%
	Through	300	25	8	50	11	50	14	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

Direction	Lane Group	Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
			Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	75	19	125	31	125	33	0%	0%
	Through	300	325	11	375	37	350	14	0%	39%
NB	Left Turn	325	225	82	575	99	475	0	0%	0%
	Through/Right	2,925	1,500	487	2,050	657	2,025	640	88%	0%
	Right Turn	2,925	1,500	477	2,025	631	2,000	602	92%	0%
WB	Through	200	100	27	175	45	175	30	0%	4%
	Through/Right	200	125	25	200	40	175	32	0%	5%
	Right Turn	200	75	19	150	41	175	46	0%	0%

Intersection 1 **I-5 SB Ramps/Richards Boulevard** **Signal**

		Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group		Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Through	3,825	2,525	306	3,400	425	3,400	316	77%	0%
	Through/Right	3,825	1,950	580	3,500	445	3,250	311	0%	0%
SB	Left Turn	4,425	450	299	675	517	675	514	35%	0%
	Left/Through	4,425	475	298	675	507	725	549	40%	0%
	Right Turn	325	200	172	325	254	325	192	0%	0%
WB	Left Turn	1,300	75	26	175	54	175	47	0%	0%
	Through	300	25	6	25	20	50	22	0%	0%

Intersection 2 **I-5 NB Ramps/Richards Boulevard** **Signal**

		Storage (ft)	Average Queue (ft)		95th Queue (ft)		Maximum Queue (ft)		Block Time	
Direction	Lane Group		Average	Std. Dev.	Average	Std. Dev.	Average	Std. Dev.	Pocket	Upstream
EB	Left Turn	300	200	35	325	38	300	15	0%	2%
	Through	300	200	93	325	146	300	115	0%	10%
NB	Left Turn	325	50	7	75	14	75	21	0%	0%
	Through/Right	1,125	150	22	225	37	250	56	1%	0%
	Right Turn	1,125	100	36	175	65	200	81	0%	0%
WB	Through	200	75	18	125	26	150	26	0%	0%
	Right Turn	200	175	16	225	11	200	11	0%	5%

Leisch Method for Weaving Analysis

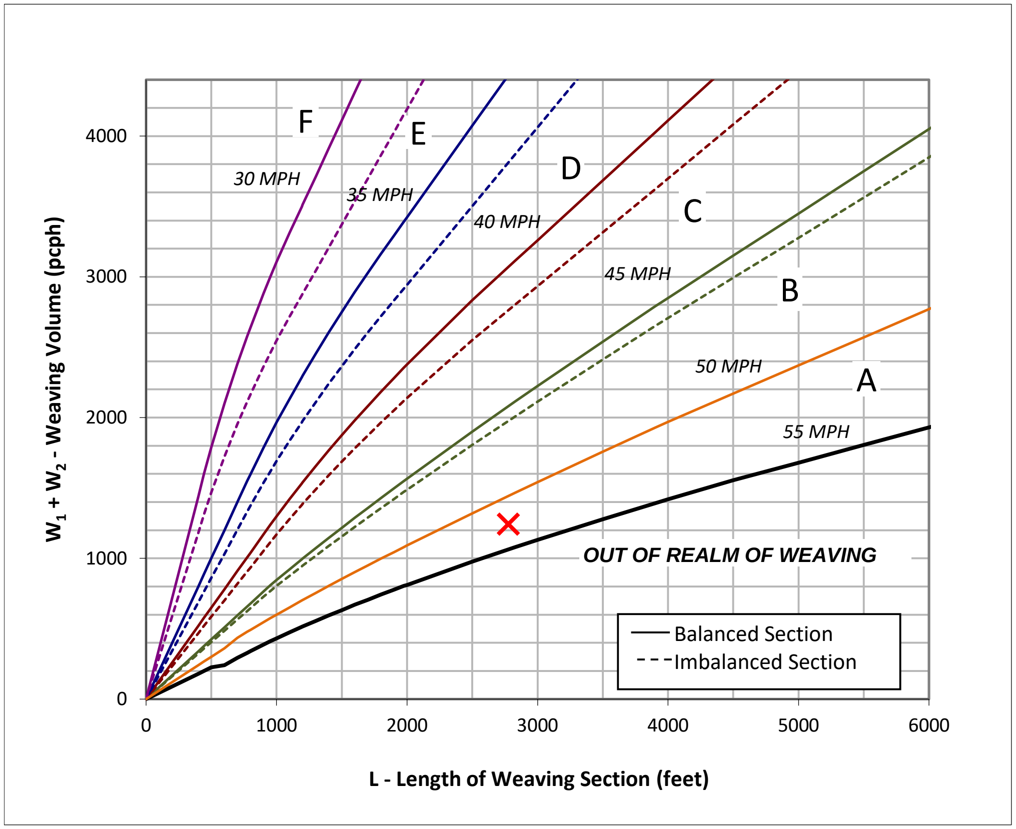
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,775

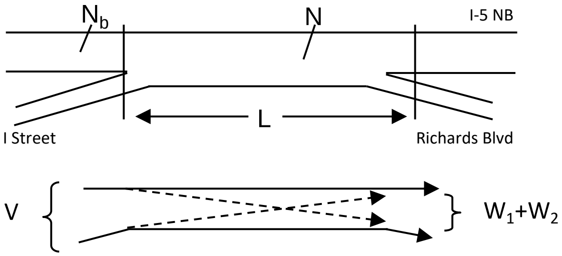
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing AM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,521	Volume (vph)*	386	Volume (vph)*	834
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,882	Volume (pcph)	394	Volume (pcph)	851



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

50 MPH and **55 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 52.6

4. Weaving Intensity Factor (k) 1.00

5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]$ 1,576

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Fehr & Peers *2/25/2019*

Leisch Method for Weaving Analysis

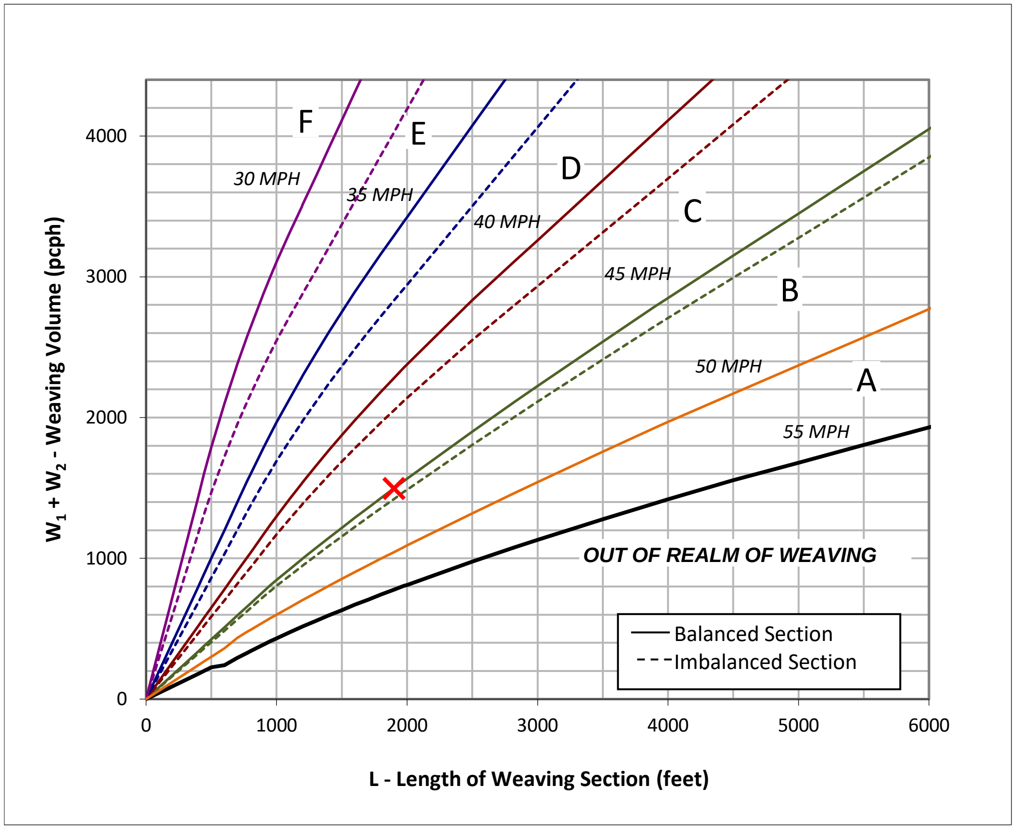
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

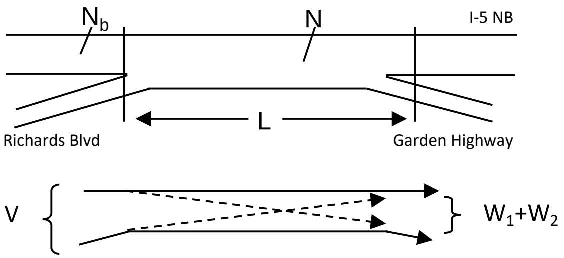
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing AM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,273	Volume (vph)*	559	Volume (vph)*	909
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,622	Volume (pcph)	570	Volume (pcph)	927



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 44.4
4. Weaving Intensity Factor (k) 2.05
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,644

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

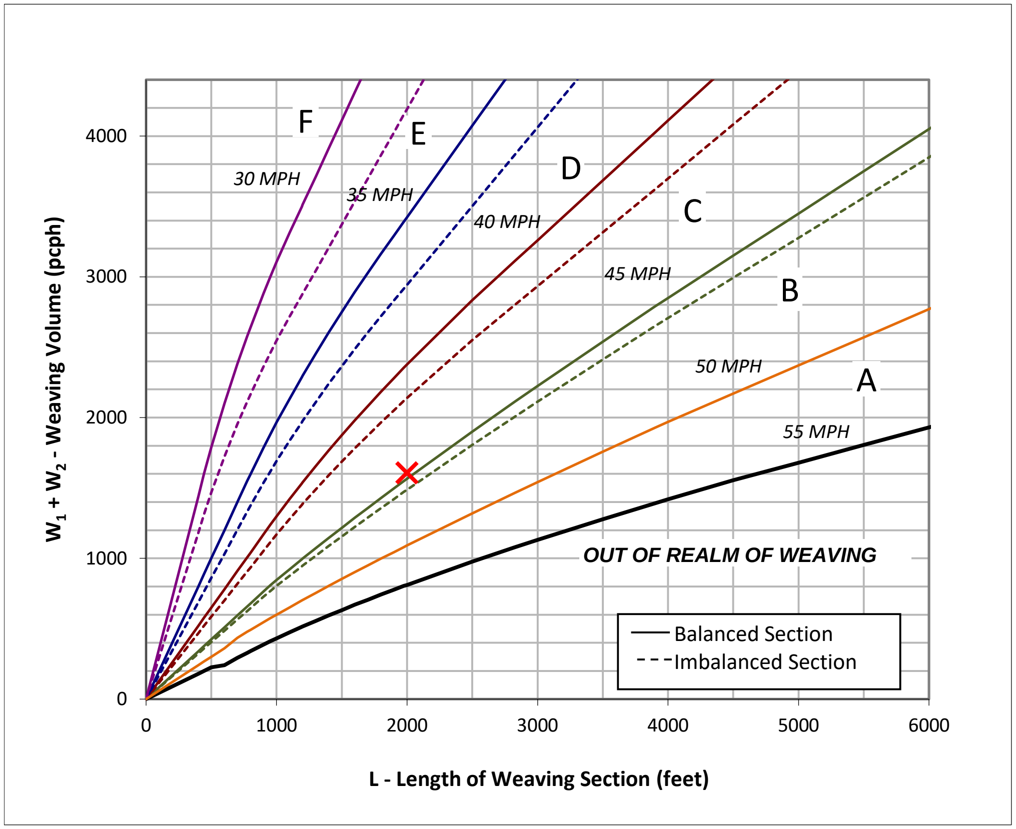
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

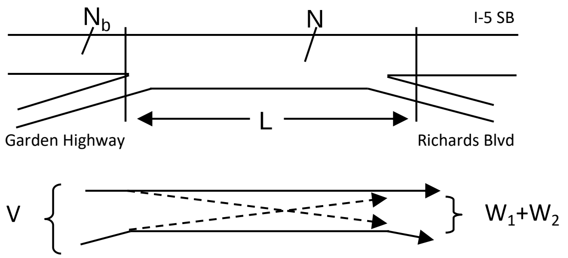
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing AM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,972	Volume (vph)*	632	Volume (vph)*	944
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,355	Volume (pcph)	645	Volume (pcph)	963



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 44.1
4. Weaving Intensity Factor (k) 2.09
5. Service Volume (SV, pcph)

   SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,811
6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

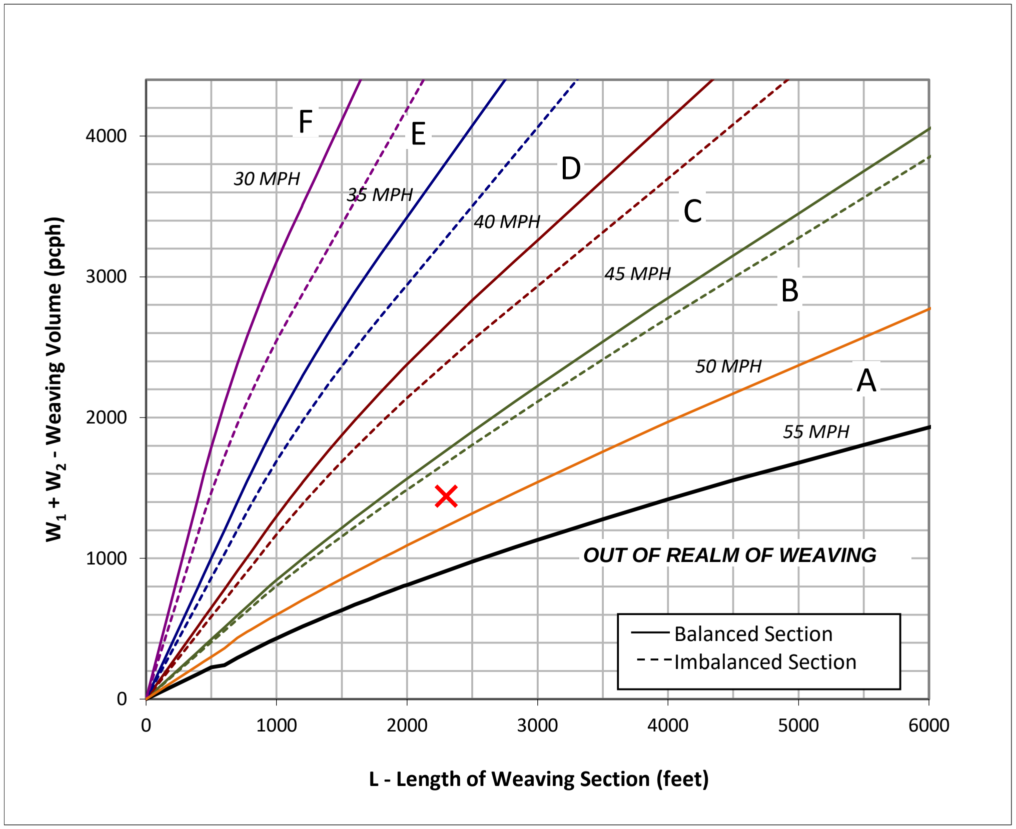
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

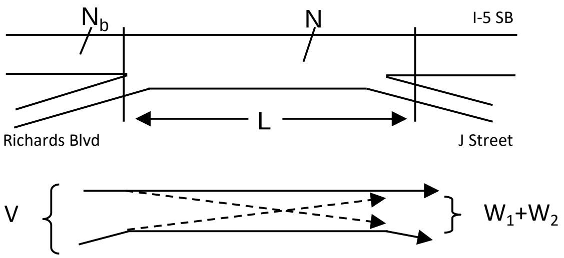
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing AM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,328	Volume (vph)*	373	Volume (vph)*	1,042
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,680	Volume (pcph)	380	Volume (pcph)	1,063



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? Y

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and **50 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 48.0
4. Weaving Intensity Factor (k) 1.24
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,554

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

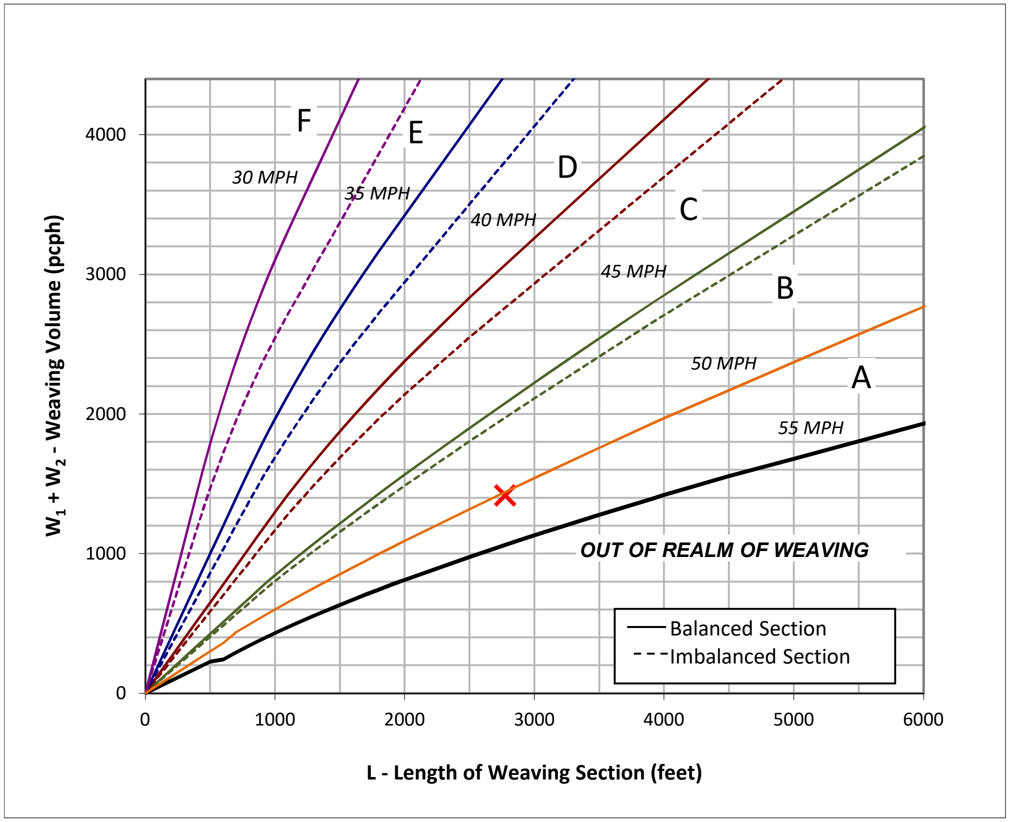
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,775

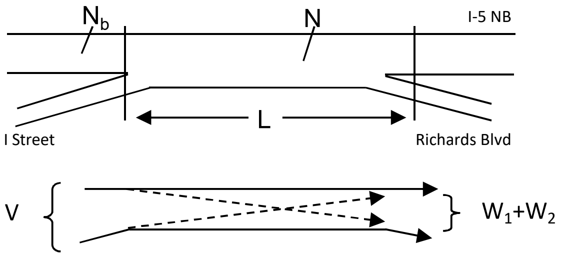
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing PM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,342	Volume (vph)*	1,050	Volume (vph)*	338
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,742	Volume (pcph)	1,071	Volume (pcph)	345



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

50 MPH and **55 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	50.4
4. Weaving Intensity Factor (k)	0.99
5. Service Volume (SV, pcph) SV = $(1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,748
6. Level of Service (LOS)	E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

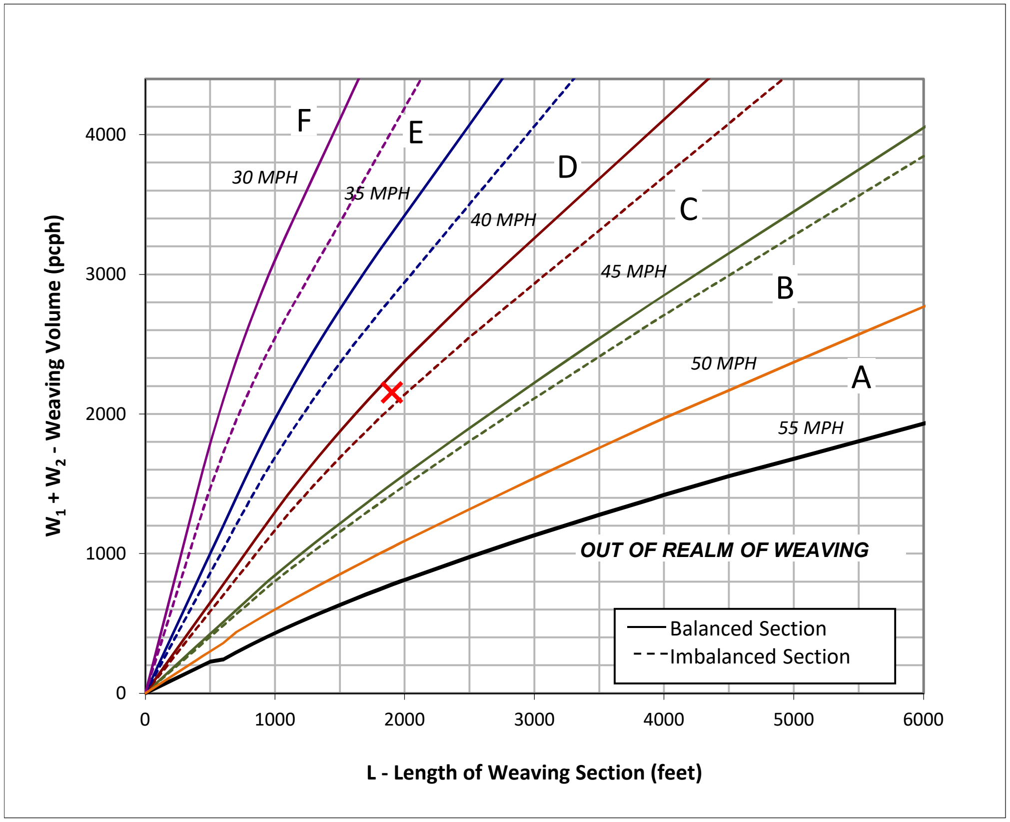
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

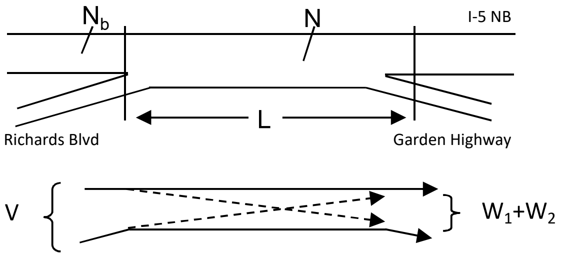
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing PM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	9,439	Volume (vph)*	1,364	Volume (vph)*	749
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	9,892	Volume (pcph)	1,391	Volume (pcph)	764



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 39.2
4. Weaving Intensity Factor (k) 2.57
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 2,219

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

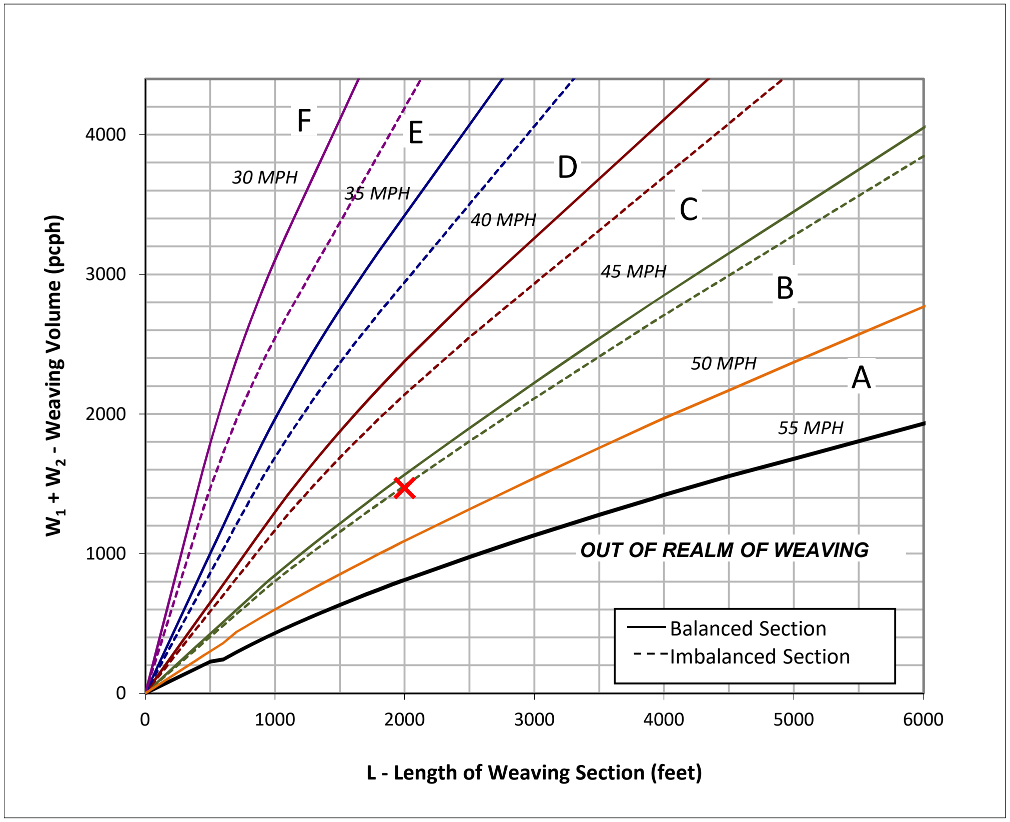
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

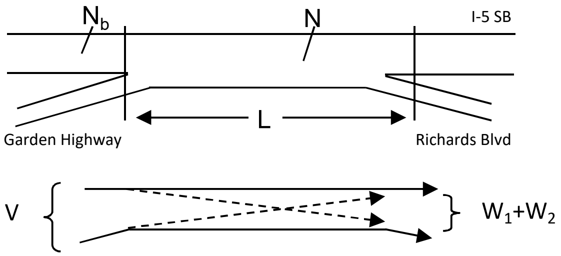
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing PM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,213	Volume (vph)*	748	Volume (vph)*	693
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,559	Volume (pcph)	763	Volume (pcph)	707



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and 50 MPH

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 45.2
4. Weaving Intensity Factor (k) 1.78
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,623

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections*, Jack E. Leisch & Associates, September 1983 and *Highway Design Manual*, California Department of Transportation, 2014

Leisch Method for Weaving Analysis

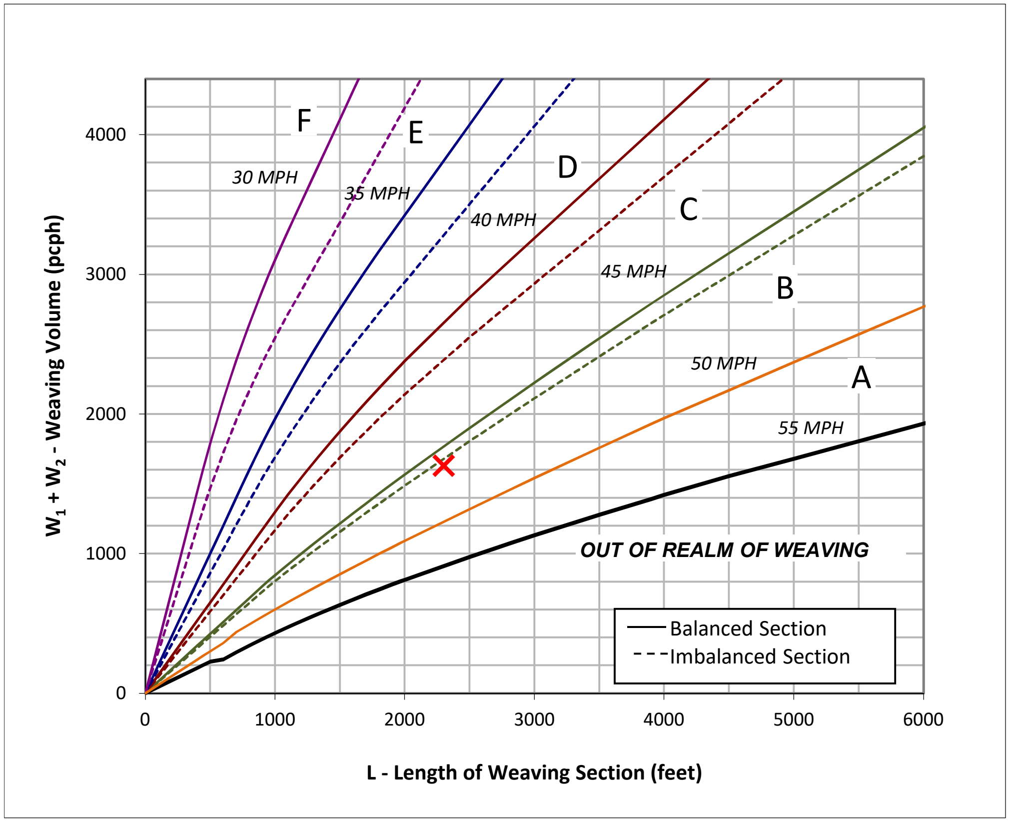
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

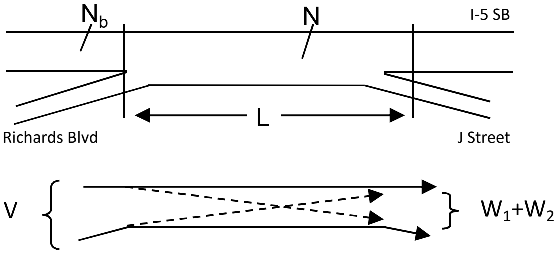
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing PM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,230	Volume (vph)*	855	Volume (vph)*	743
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,577	Volume (pcph)	872	Volume (pcph)	758



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? Y

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and 50 MPH

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 46.3
4. Weaving Intensity Factor (k) 1.55
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,598

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

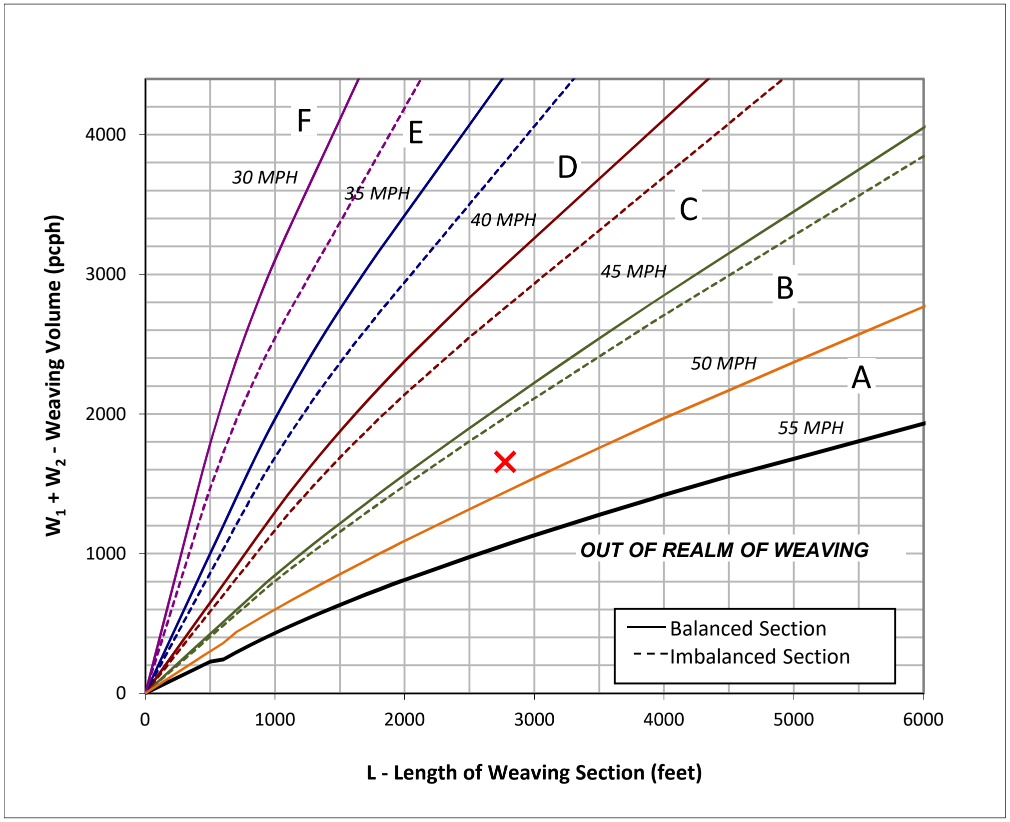
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,775

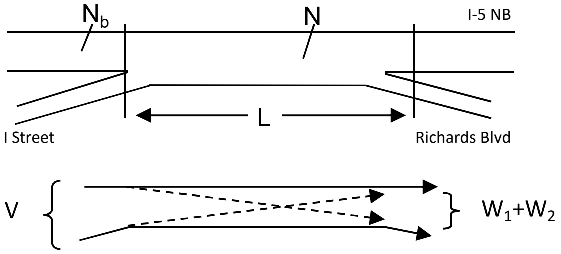
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing Plus Project AM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,621	Volume (vph)*	386	Volume (vph)*	1,240
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,987	Volume (pcph)	394	Volume (pcph)	1,265



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and **50 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 48.0
4. Weaving Intensity Factor (k) 1.65
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,649

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

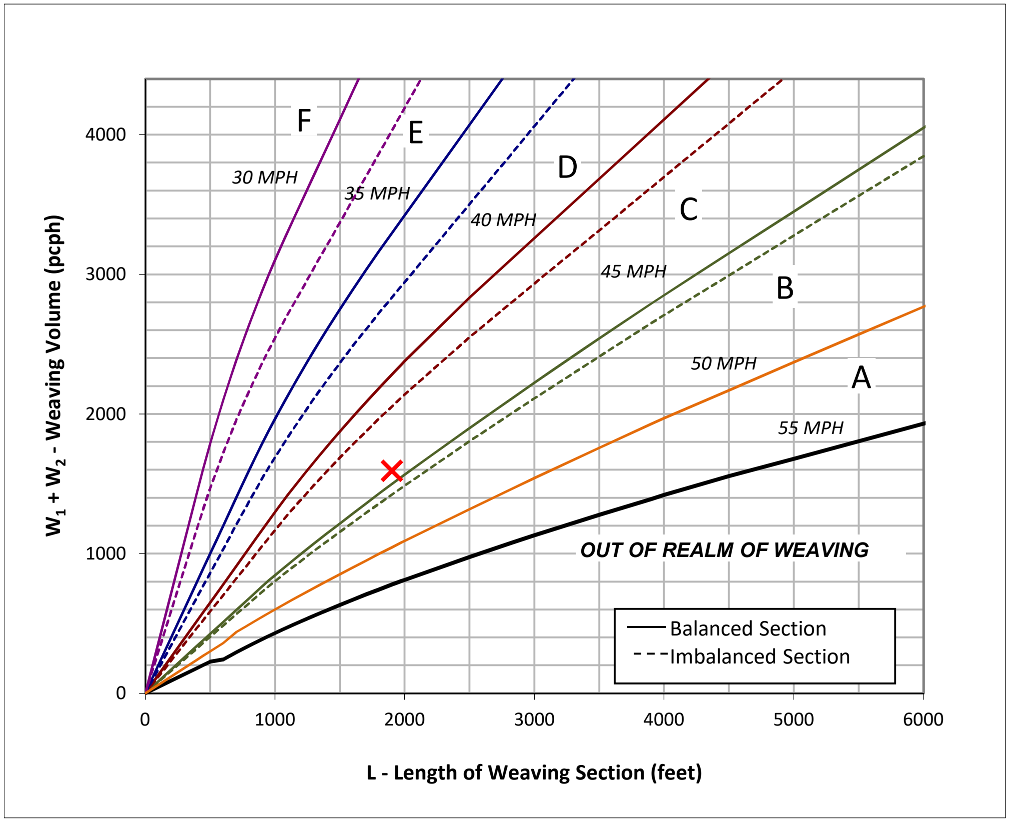
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

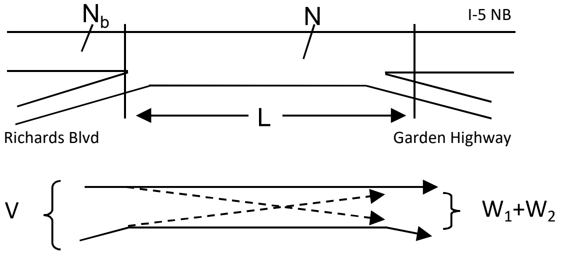
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing Plus Project AM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,060	Volume (vph)*	649	Volume (vph)*	914
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,399	Volume (pcph)	662	Volume (pcph)	932



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 43.6

4. Weaving Intensity Factor (k) 2.15

5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,632

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

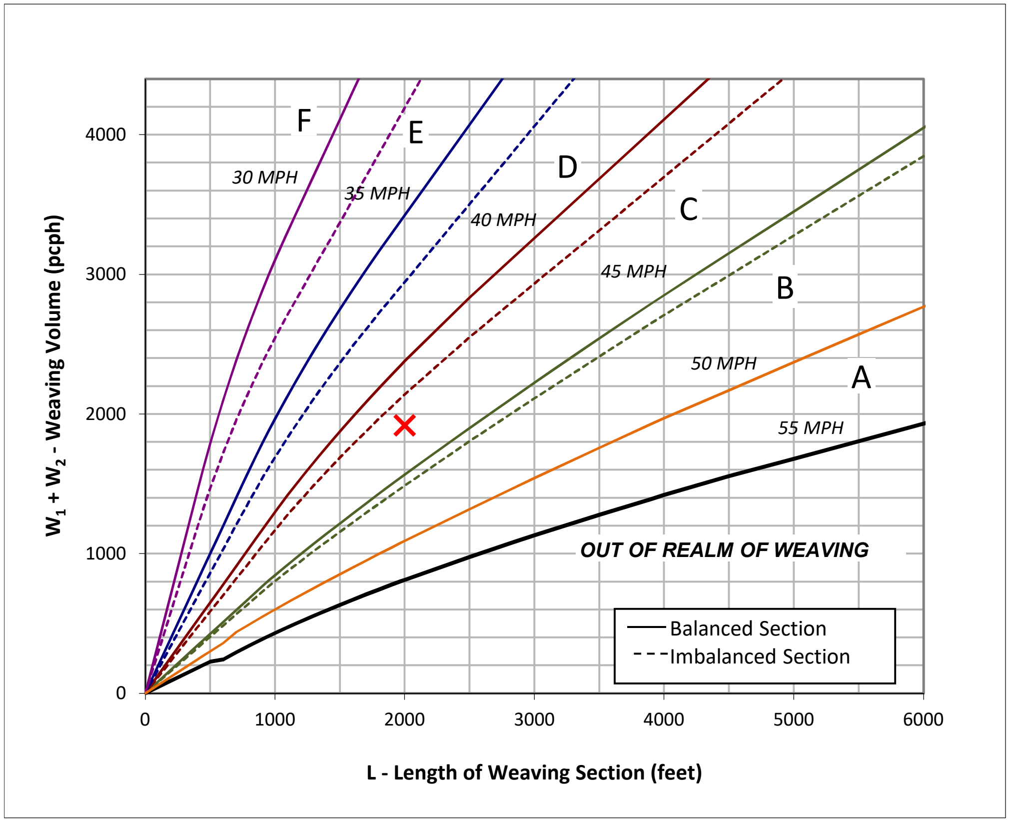
Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

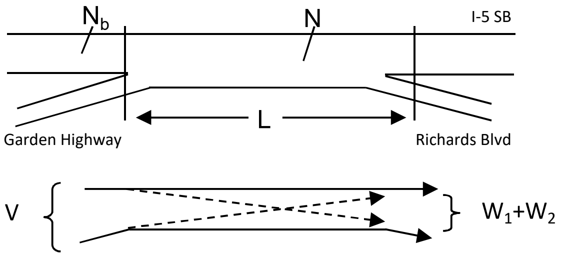
Data Input		
Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Richards State Office Complex EIR
Scenario	Existing Plus Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,045	Volume (vph)*	647	Volume (vph)*	1,233
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,431	Volume (pcph)	660	Volume (pcph)	1,258



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and 45 MPH

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 41.7
4. Weaving Intensity Factor (k) 2.37
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,867

6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

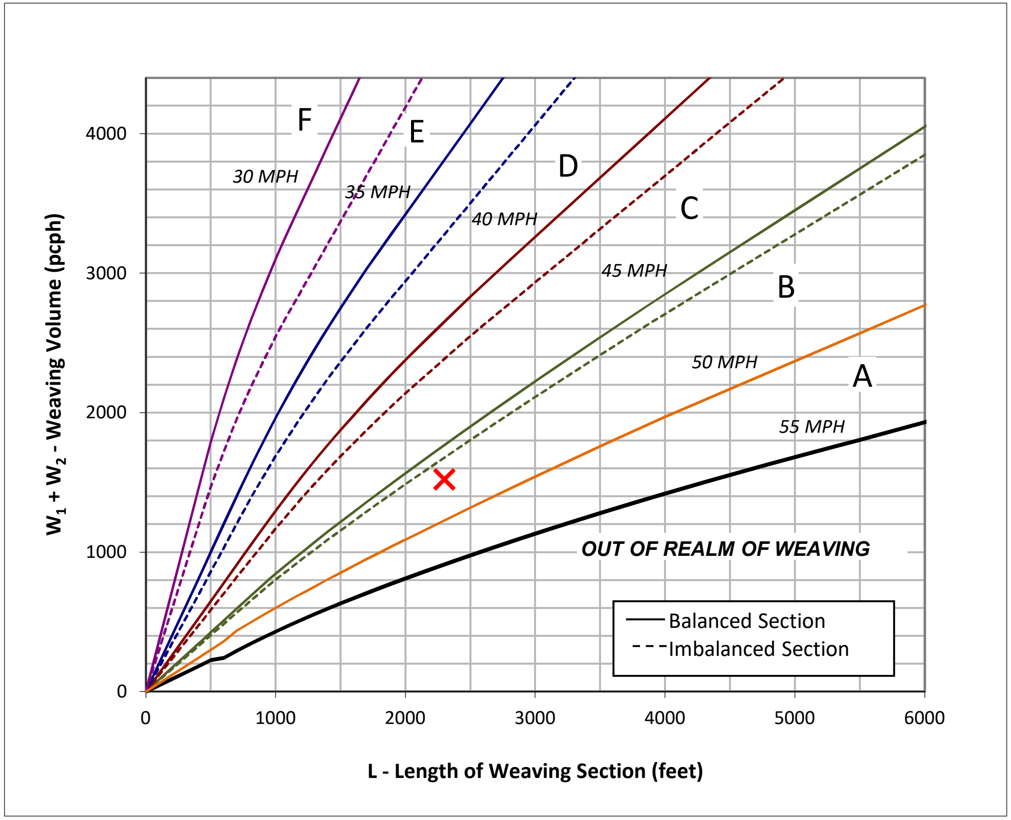
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

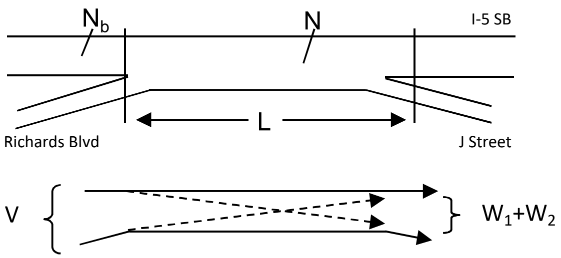
Project Information

Project	Richards State Office Complex EIR
Scenario	Existing Plus Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,173	Volume (vph)*	449	Volume (vph)*	1,042
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,517	Volume (pcph)	458	Volume (pcph)	1,063



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and **50 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	47.3
4. Weaving Intensity Factor (k)	1.36
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,536
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

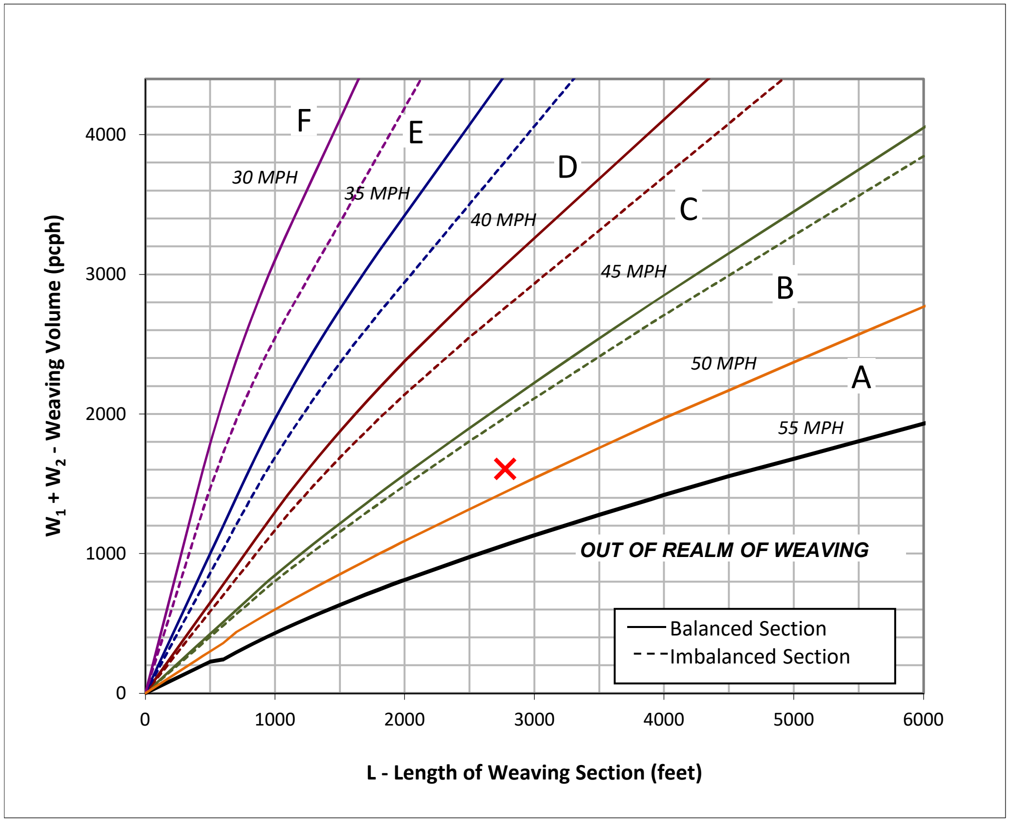
Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

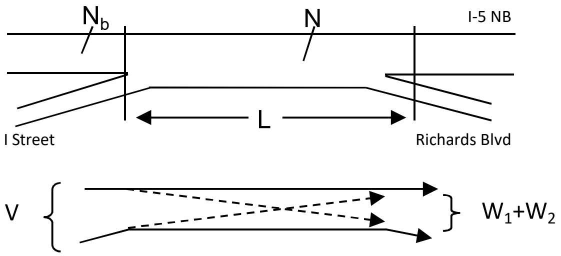
Data Input		
Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,775

Project Information	
Project	Richards Blvd State Office Complex
Scenario	Existing Plus Project PM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,138	Volume (vph)*	1,050	Volume (vph)*	525
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,529	Volume (pcph)	1,071	Volume (pcph)	536



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

45 MPH and **50 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 48.5

4. Weaving Intensity Factor (k) 1.16

5. Service Volume (SV, pcph)

SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,723

6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

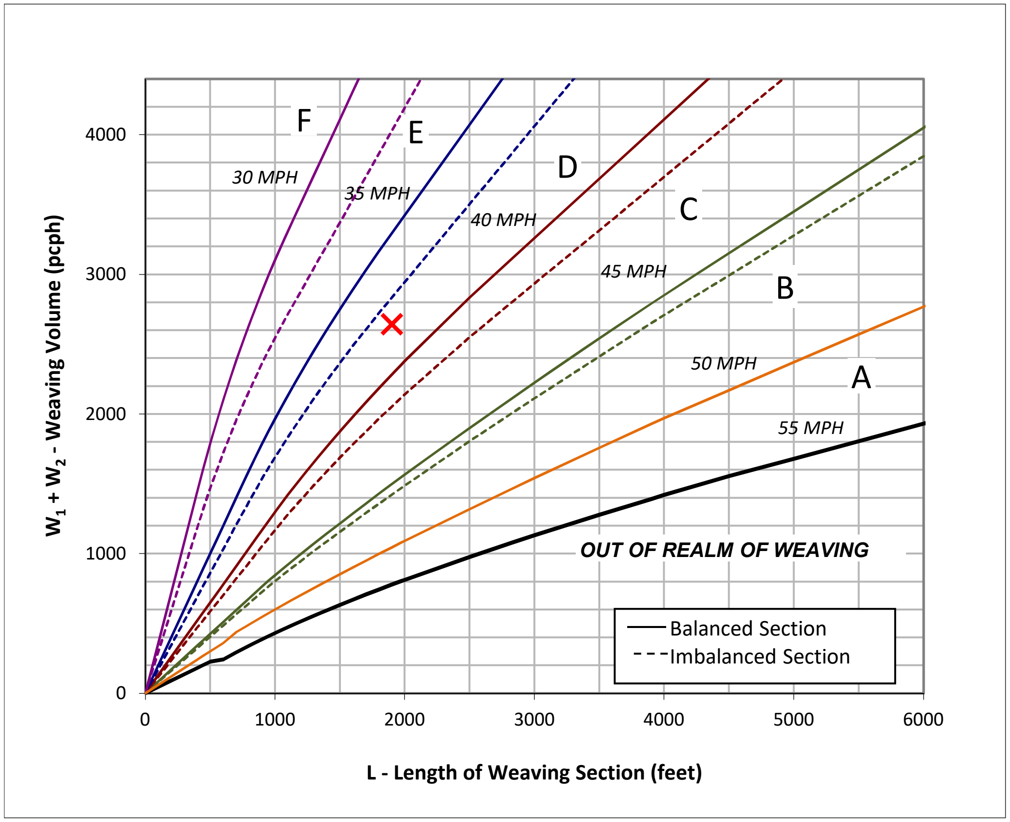
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

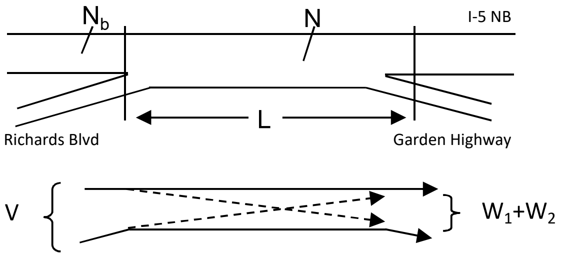
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing Plus Project PM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	9,527	Volume (vph)*	1,819	Volume (vph)*	773
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	9,984	Volume (pcph)	1,855	Volume (pcph)	788



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 36.2

4. Weaving Intensity Factor (k) 2.74

5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 2,271

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

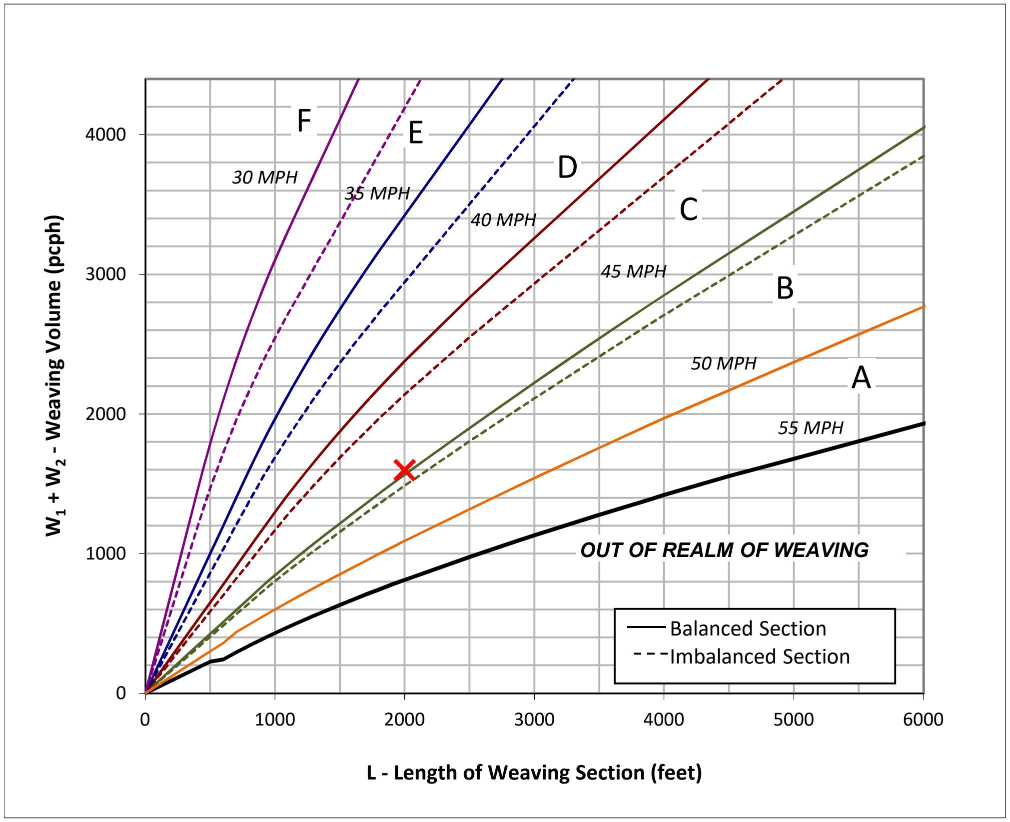
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

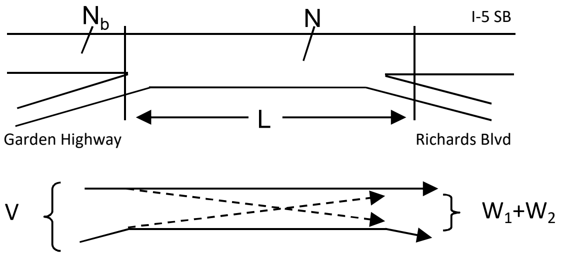
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing Plus Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,046	Volume (vph)*	754	Volume (vph)*	812
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,384	Volume (pcph)	769	Volume (pcph)	828



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 44.2
4. Weaving Intensity Factor (k) 2.08
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,642

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

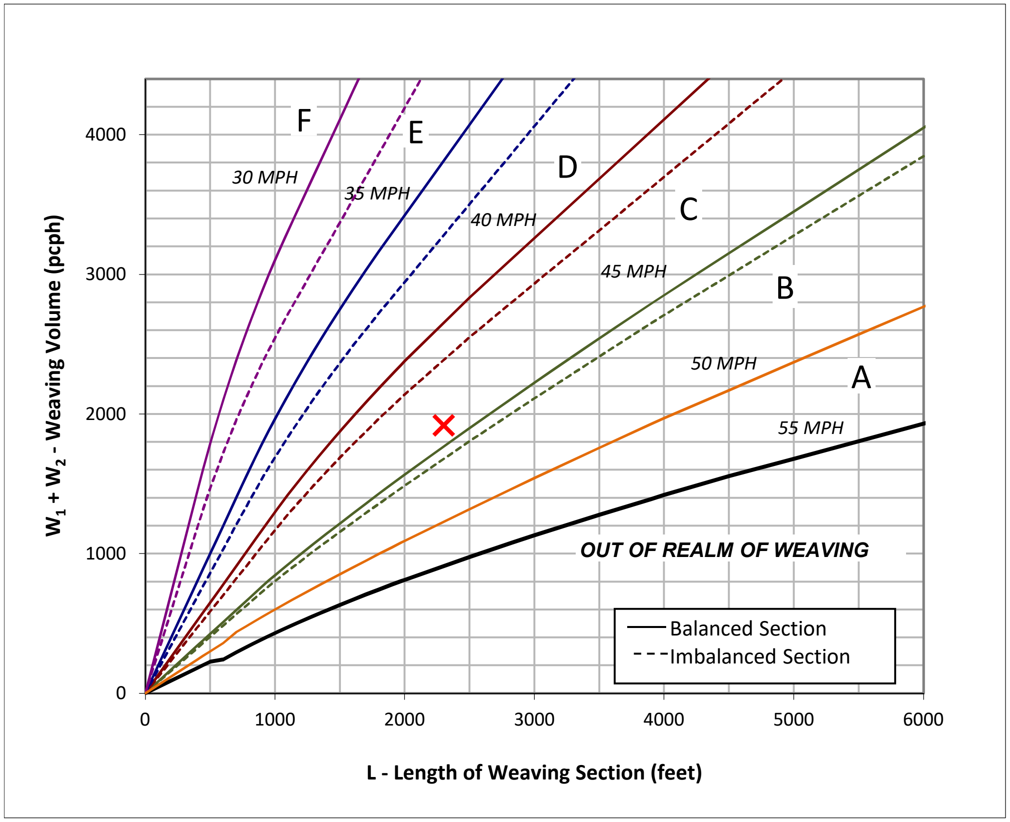
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

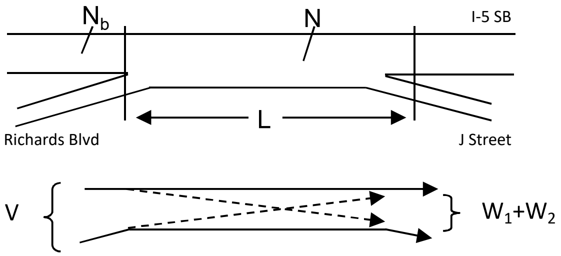
Project Information

Project	Richards Blvd State Office Complex
Scenario	Existing Plus Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,559	Volume (vph)*	1,137	Volume (vph)*	743
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,922	Volume (pcph)	1,160	Volume (pcph)	758



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	44.2
4. Weaving Intensity Factor (k)	2.08
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,748
6. Level of Service (LOS)	E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

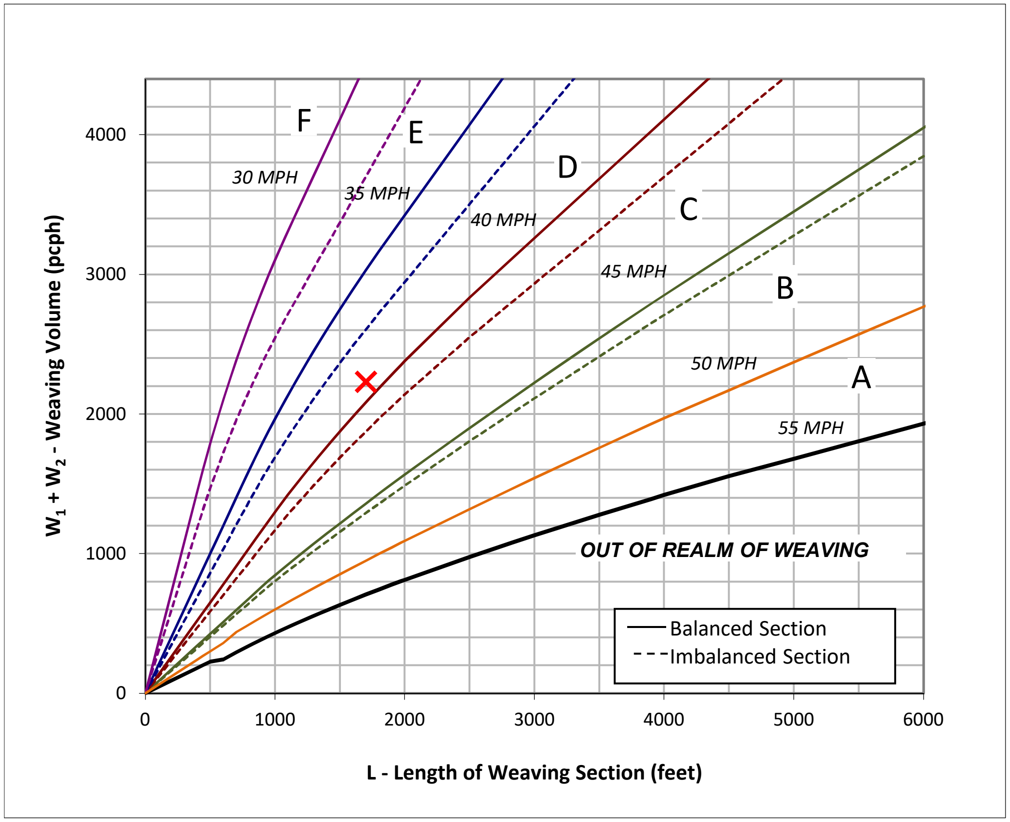
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,700

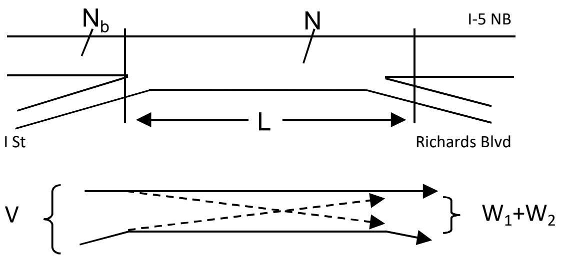
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project AM Peak Hour
Freeway	I-5 NB
On-ramp	I St
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,920	Volume (vph)*	921	Volume (vph)*	1,265
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,300	Volume (pcph)	939	Volume (pcph)	1,290



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 37.6
4. Weaving Intensity Factor (k) 2.67
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,973

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

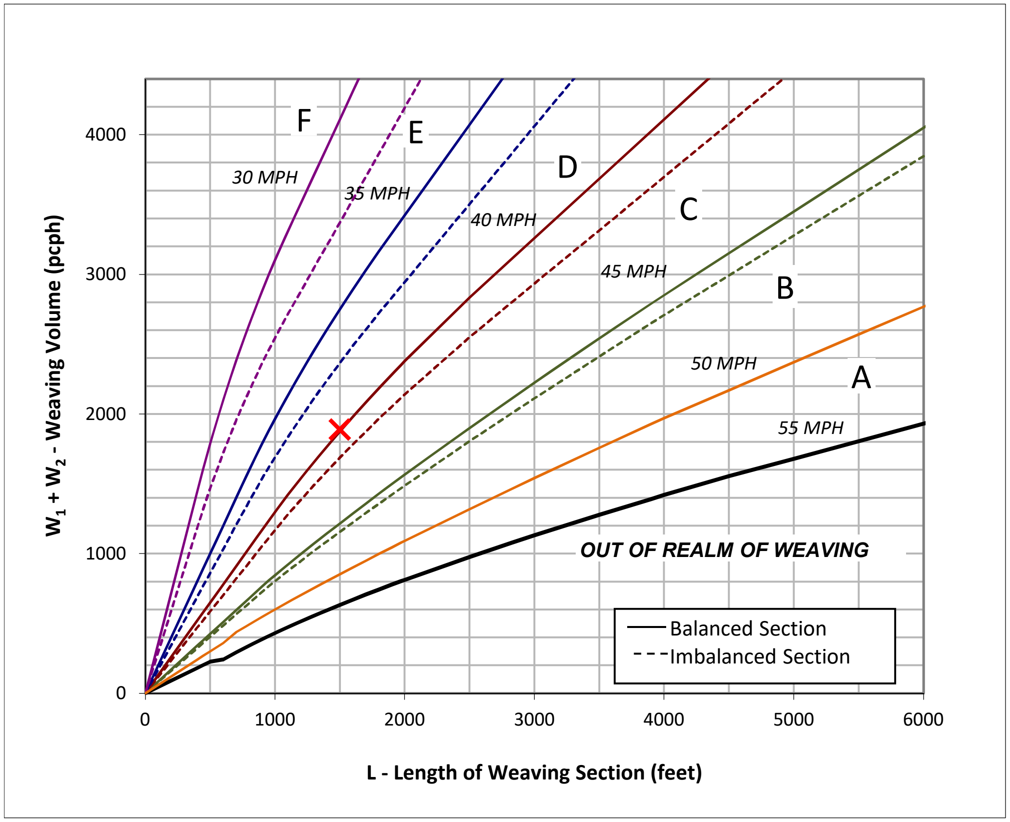
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,500

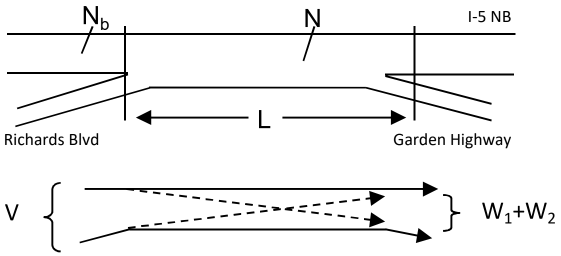
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project AM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,022	Volume (vph)*	963	Volume (vph)*	889
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,407	Volume (pcph)	982	Volume (pcph)	907



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 38.1
4. Weaving Intensity Factor (k) 2.64
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,979

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

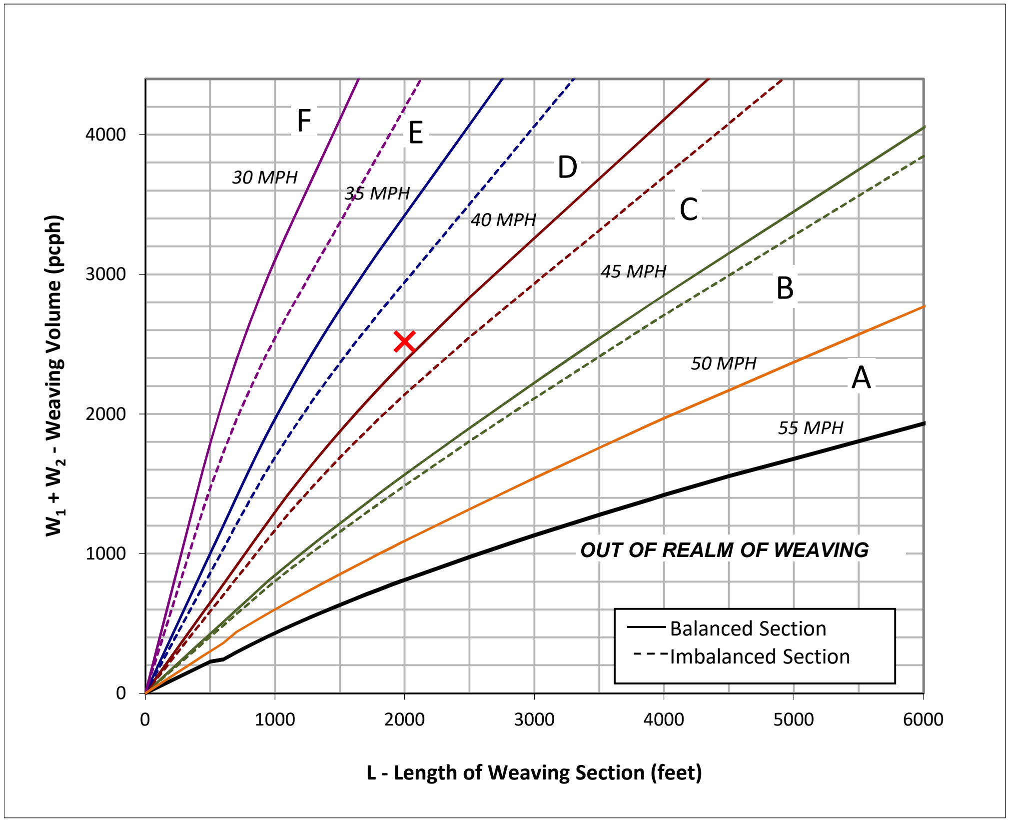
Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

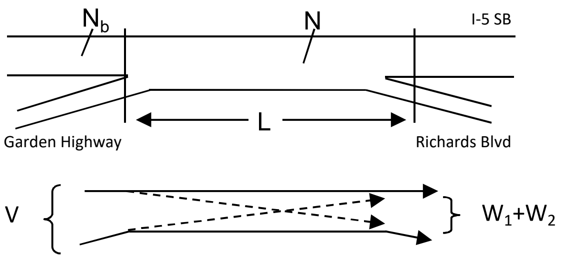
Data Input		
Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

Project Information	
Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,894	Volume (vph)*	641	Volume (vph)*	1,829
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,273	Volume (pcph)	654	Volume (pcph)	1,866



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 39.3

4. Weaving Intensity Factor (k) 2.57

5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,860

6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

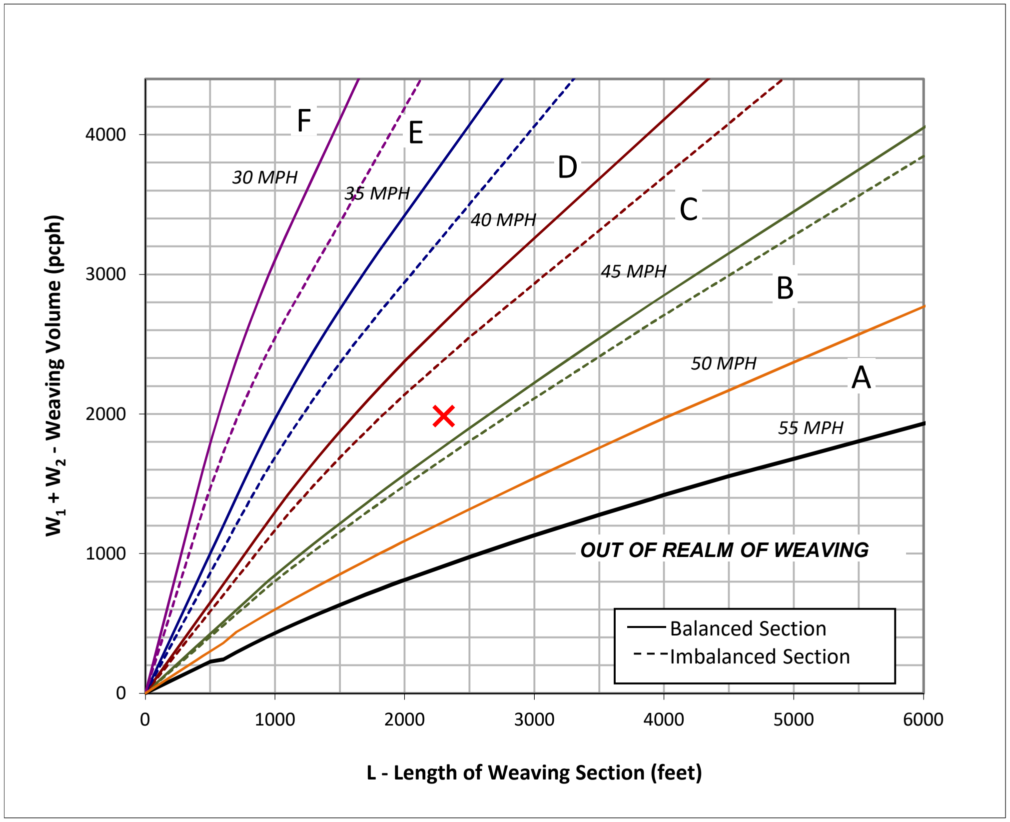
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

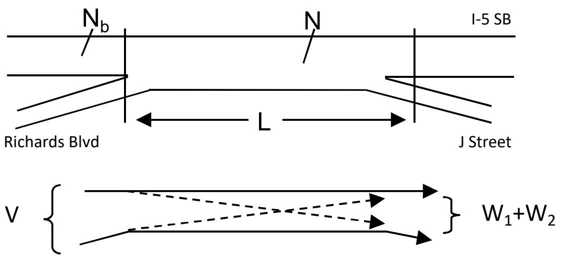
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	6,213	Volume (vph)*	715	Volume (vph)*	1,231
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	6,511	Volume (pcph)	729	Volume (pcph)	1,256



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	43.8
4. Weaving Intensity Factor (k)	2.13
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,467
6. Level of Service (LOS)	D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and
Highway Design Manual , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

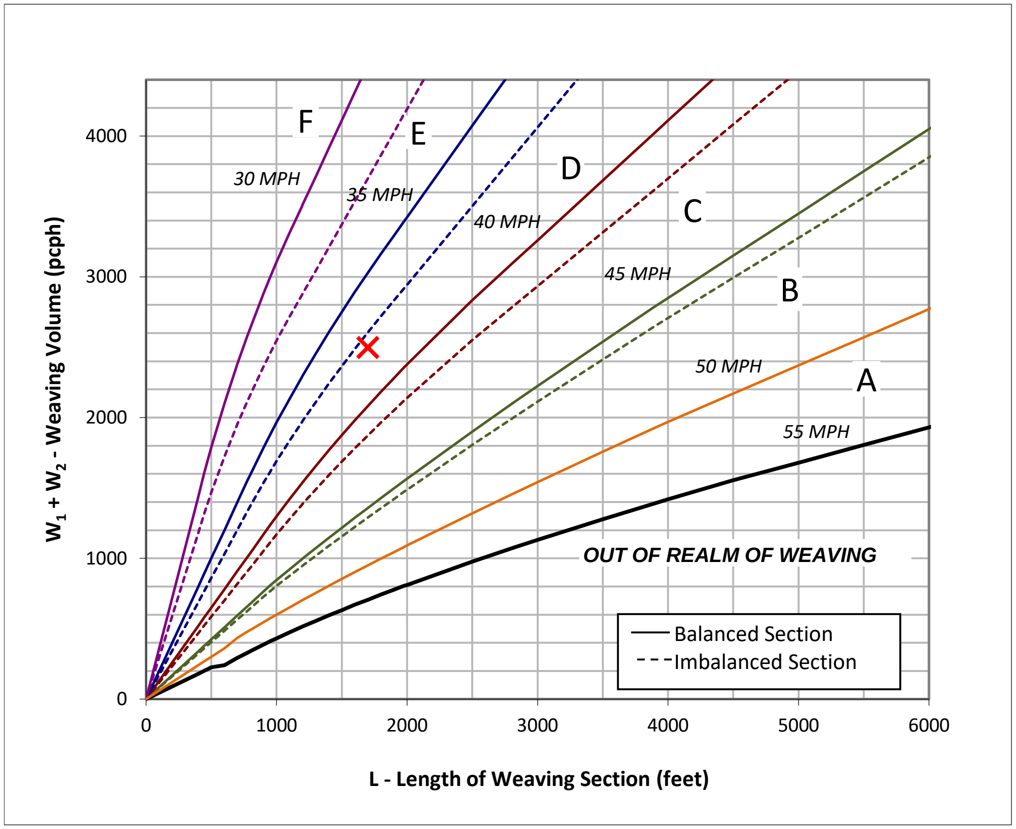
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,700

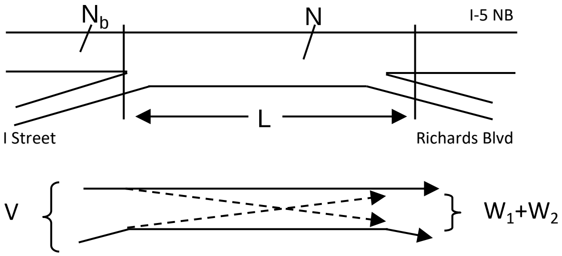
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project PM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,577	Volume (vph)*	1,920	Volume (vph)*	530
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,989	Volume (pcph)	1,958	Volume (pcph)	541



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 35.7
4. Weaving Intensity Factor (k) 2.84
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,997

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

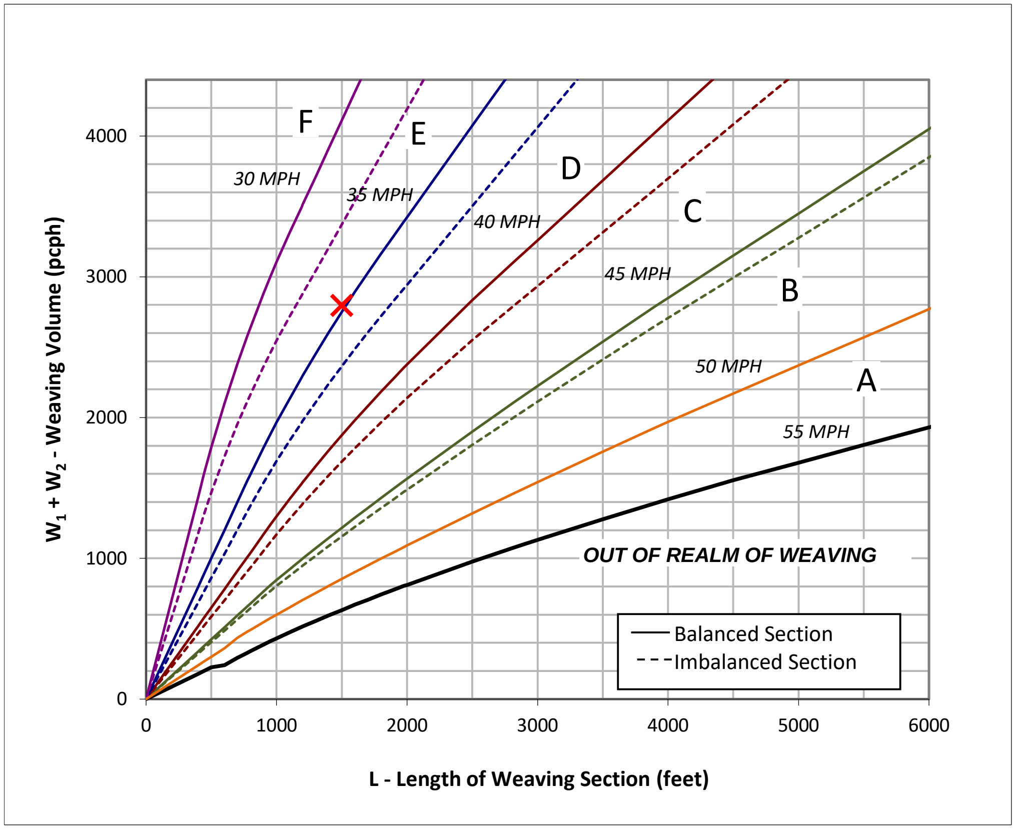
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,500

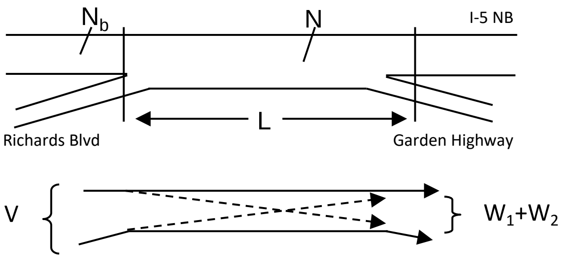
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project PM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	10,518	Volume (vph)*	1,872	Volume (vph)*	871
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	11,023	Volume (pcph)	1,909	Volume (pcph)	888



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

30 MPH and **35 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	32.9
4. Weaving Intensity Factor (k)	2.87
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	2,537
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

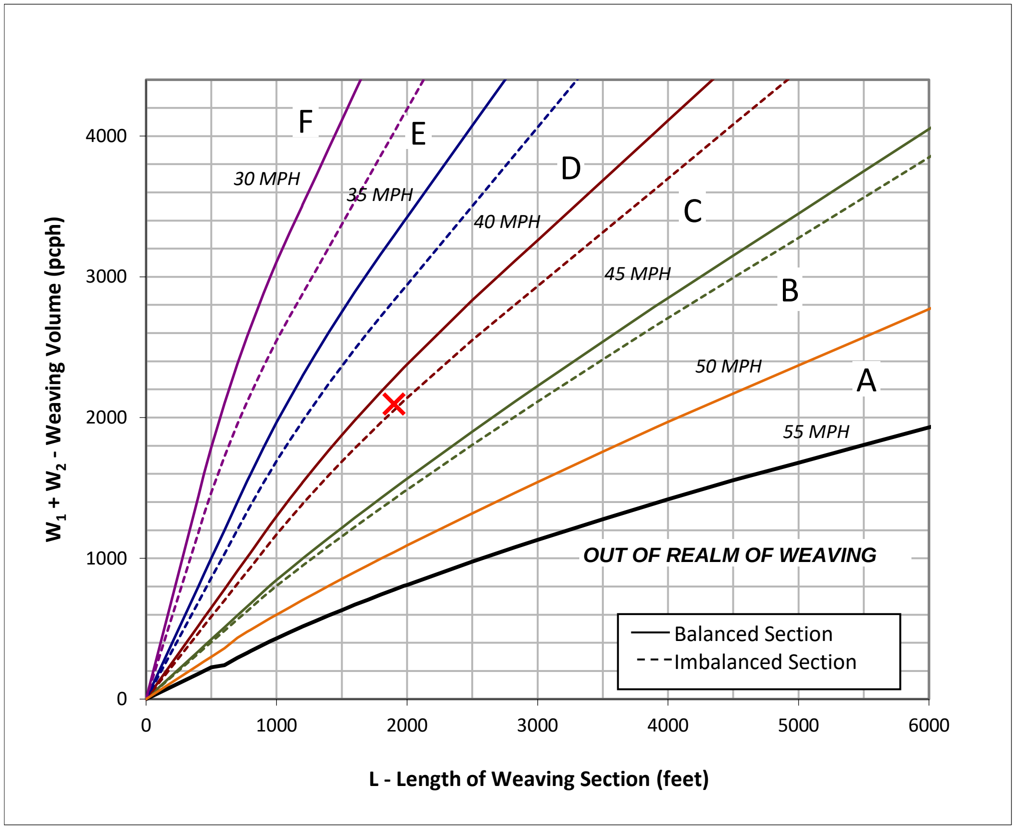
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,013	Volume (vph)*	774	Volume (vph)*	1,283
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,398	Volume (pcph)	789	Volume (pcph)	1,309

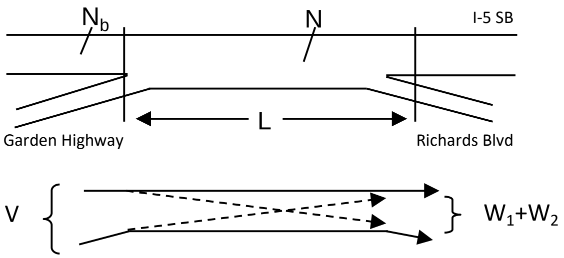


The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 41.2
4. Weaving Intensity Factor (k) 2.42
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,903

6. Level of Service (LOS) F

Leisch Method for Weaving Analysis

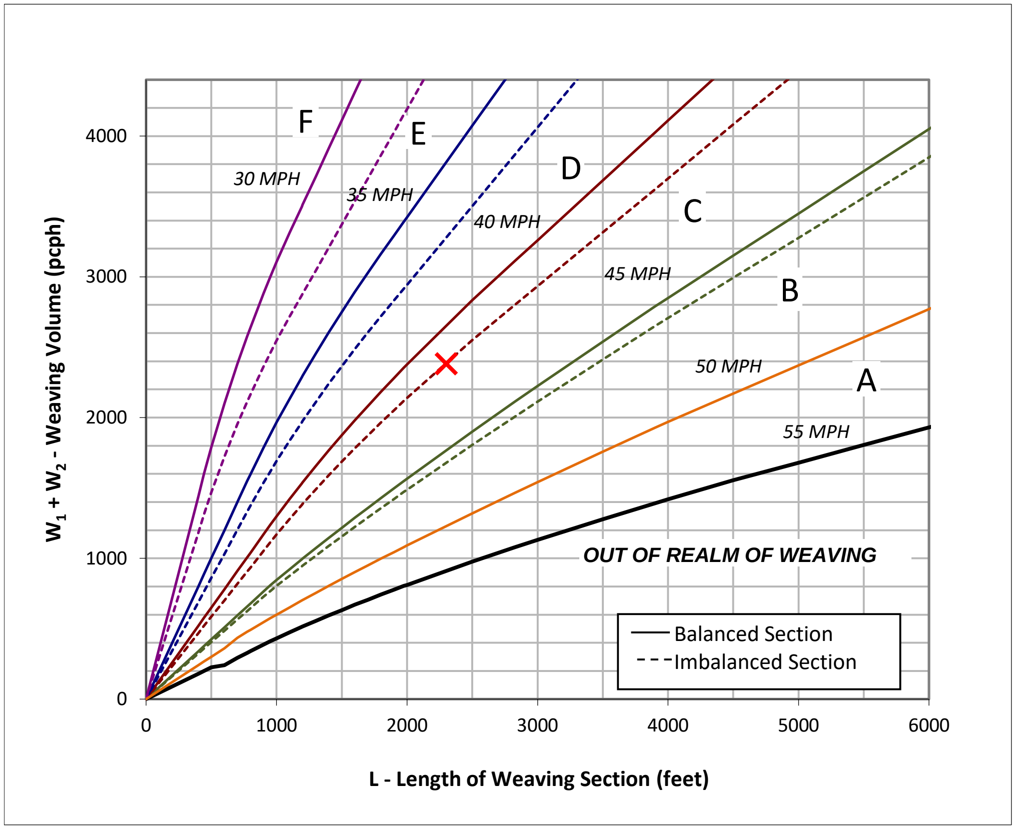
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

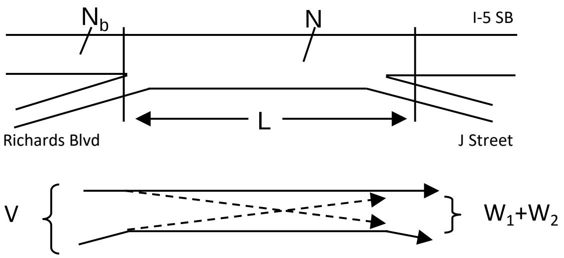
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative No Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,367	Volume (vph)*	1,028	Volume (vph)*	1,309
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,721	Volume (pcph)	1,049	Volume (pcph)	1,335



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 41.5

4. Weaving Intensity Factor (k) 2.39

5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,835

6. Level of Service (LOS) E

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

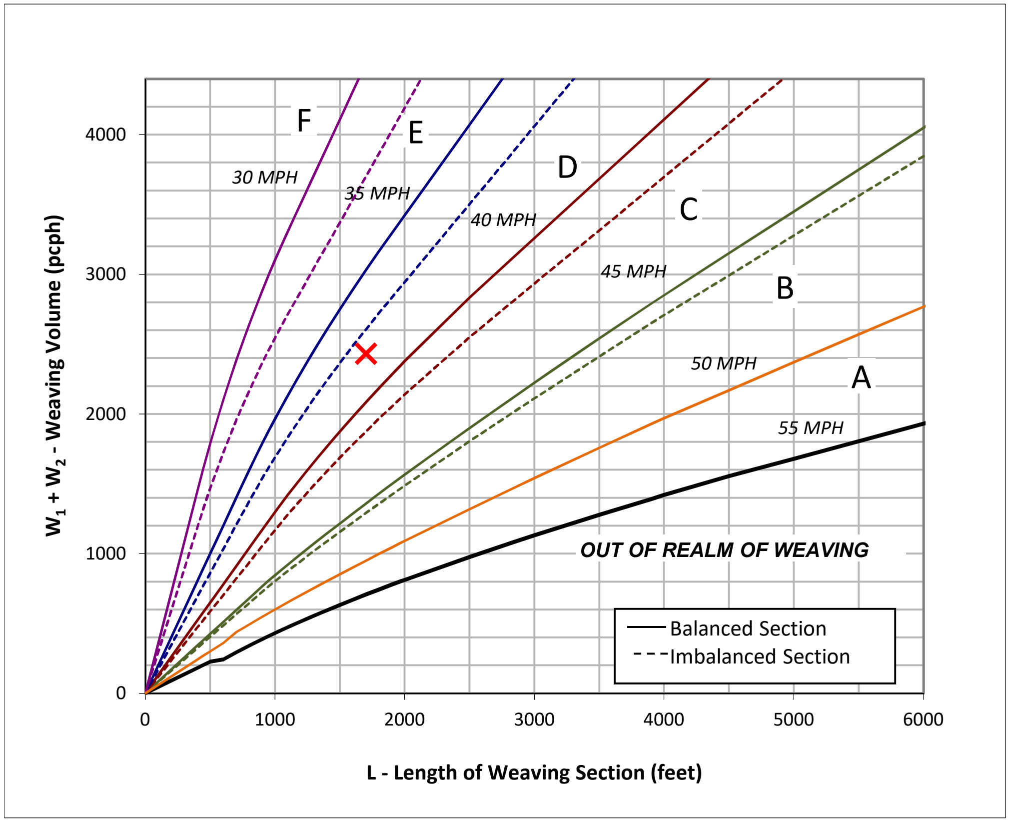
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,700

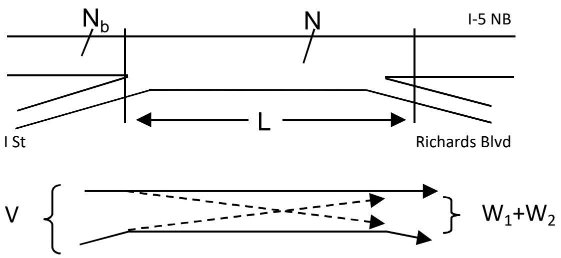
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project AM Peak Hour
Freeway	I-5 NB
On-ramp	I St
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,989	Volume (vph)*	941	Volume (vph)*	1,444
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,372	Volume (pcph)	960	Volume (pcph)	1,473



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and 40 MPH

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	36.2
4. Weaving Intensity Factor (k)	2.74
5. Service Volume (SV, pcph) SV = $(1/N)*[V + (k - 1)*\min(W_1, W_2)]$	2,008
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

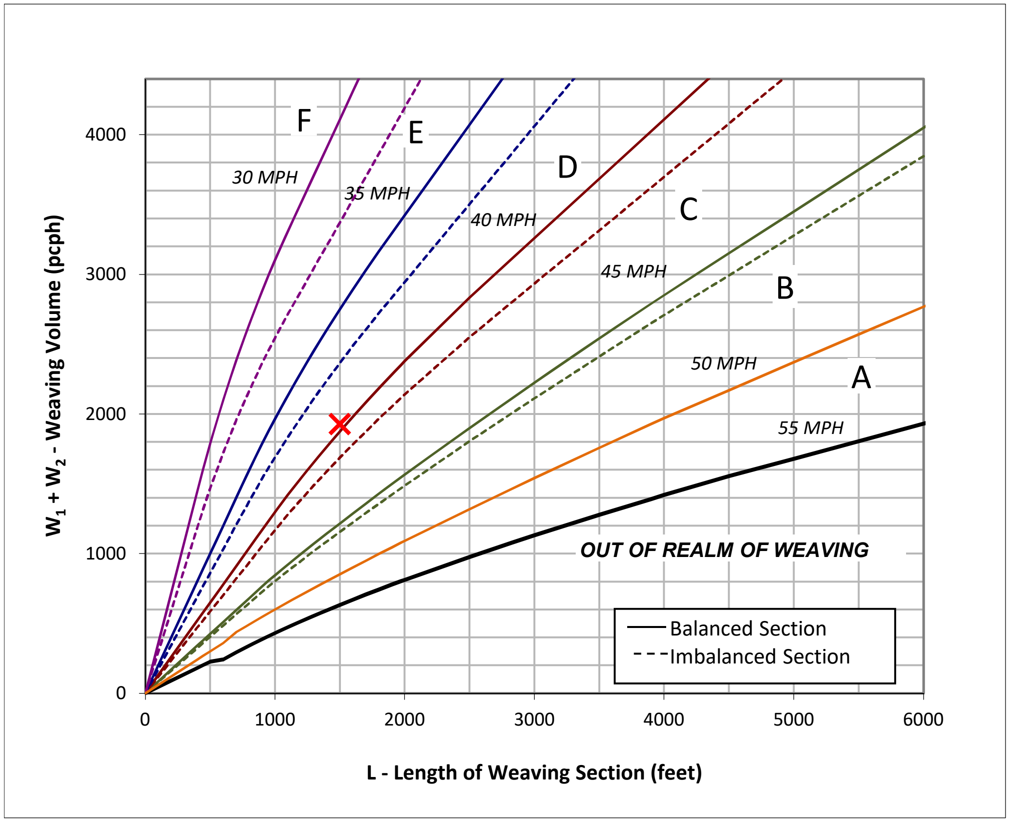
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,500

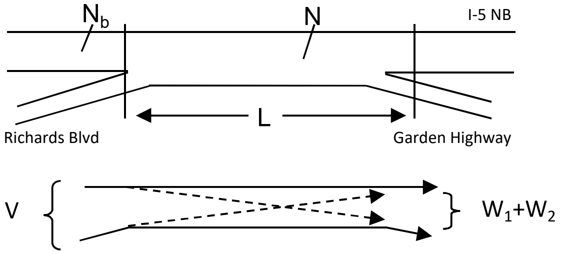
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project AM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,981	Volume (vph)*	1,001	Volume (vph)*	889
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,364	Volume (pcph)	1,021	Volume (pcph)	907



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 37.7
4. Weaving Intensity Factor (k) 2.66
5. Service Volume (SV, pcph)

SV = (1/N)*[V + (k - 1)*min(W_1, W_2)] 1,974

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

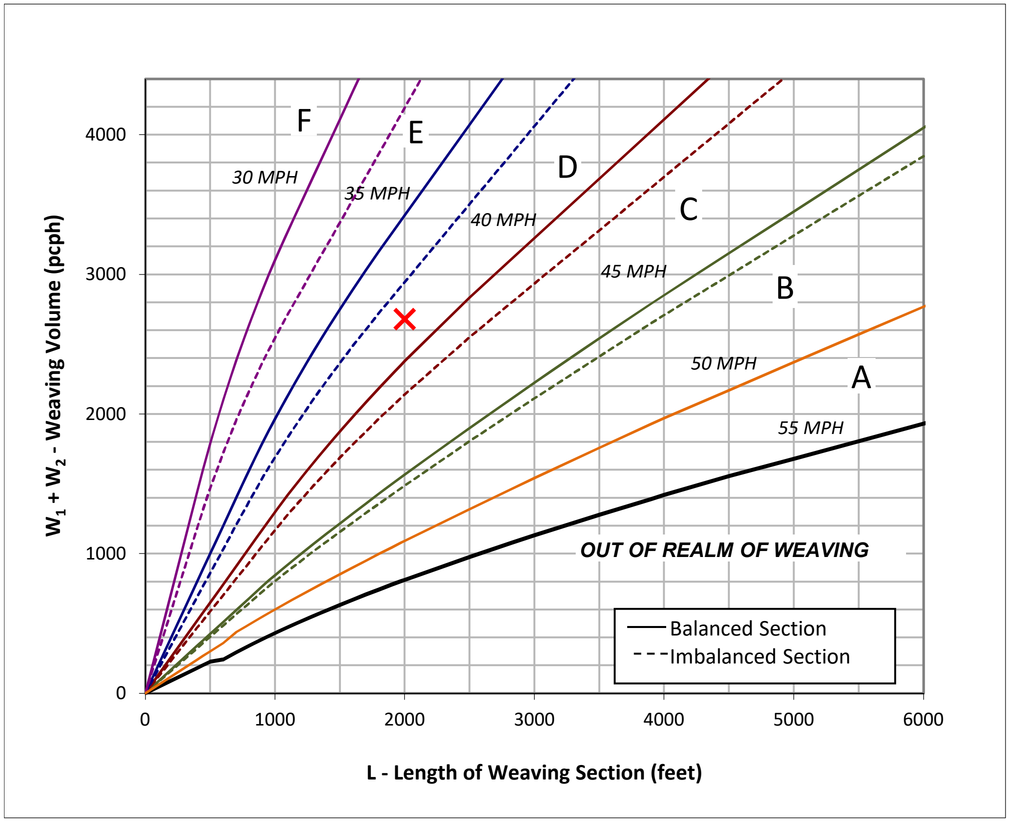
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,000

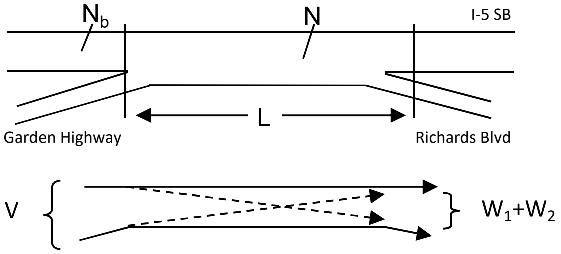
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,038	Volume (vph)*	649	Volume (vph)*	1,979
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,424	Volume (pcph)	662	Volume (pcph)	2,019



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	38.5
4. Weaving Intensity Factor (k)	2.98
5. Service Volume (SV, pcph) SV = $(1/N)*[V + (k - 1)*\min(W_1, W_2)]$	1,946
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

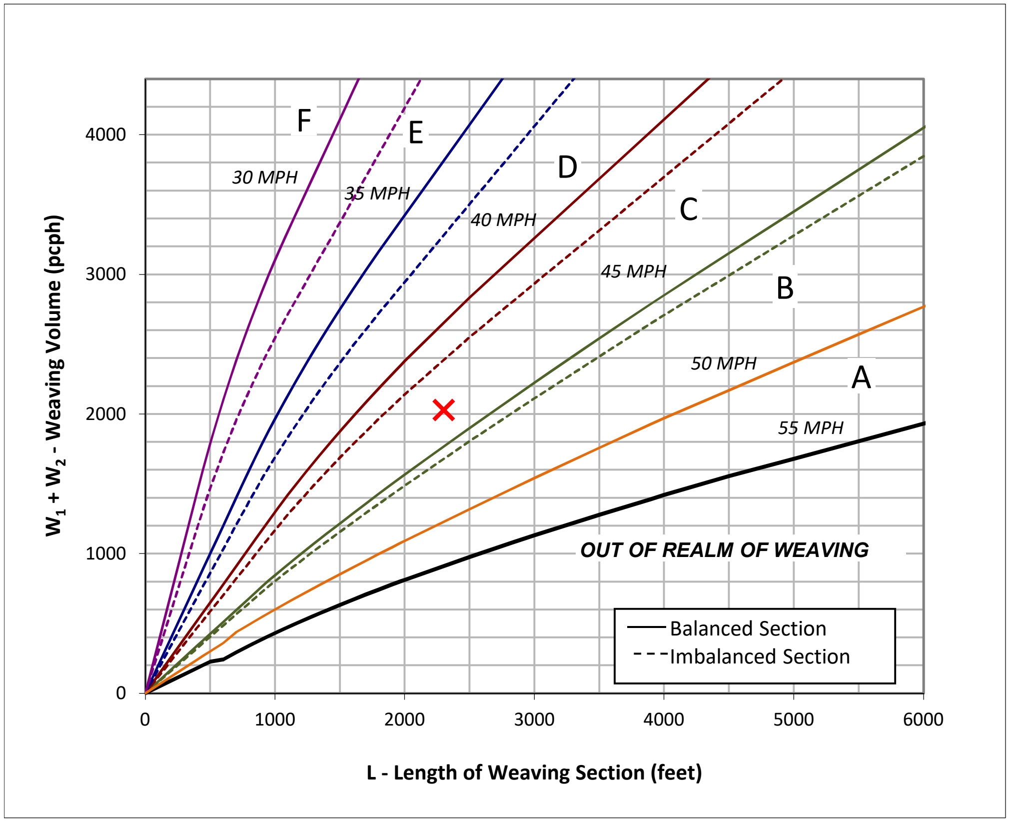
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

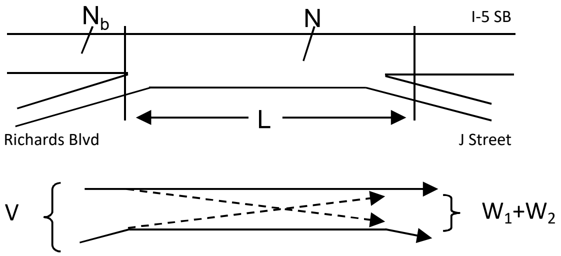
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project AM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	6,238	Volume (vph)*	734	Volume (vph)*	1,255
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	6,537	Volume (pcph)	749	Volume (pcph)	1,280



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? Y

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and **45 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 43.5
4. Weaving Intensity Factor (k) 2.16
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 1,482

6. Level of Service (LOS) D

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

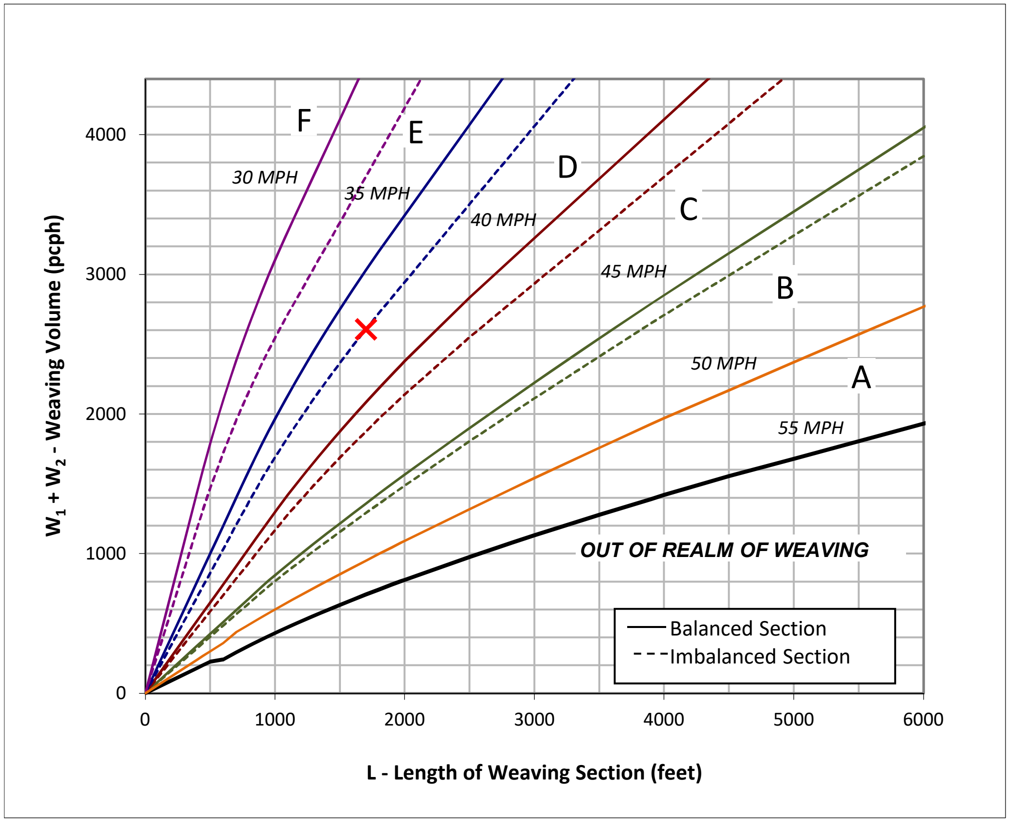
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,700

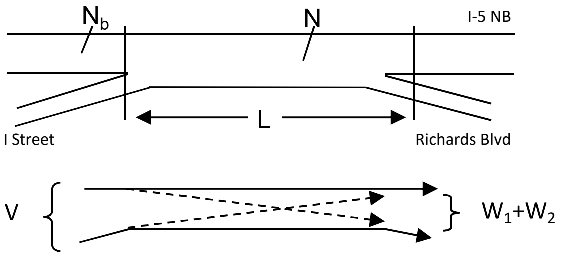
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project PM Peak Hour
Freeway	I-5 NB
On-ramp	I Street
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,638	Volume (vph)*	1,990	Volume (vph)*	565
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	9,053	Volume (pcph)	2,030	Volume (pcph)	576



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? N

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph) 35.0
4. Weaving Intensity Factor (k) 2.88
5. Service Volume (SV, pcph)

$SV = (1/N)*[V + (k - 1)*\min(W_1, W_2)]$ 2,027

6. Level of Service (LOS) F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

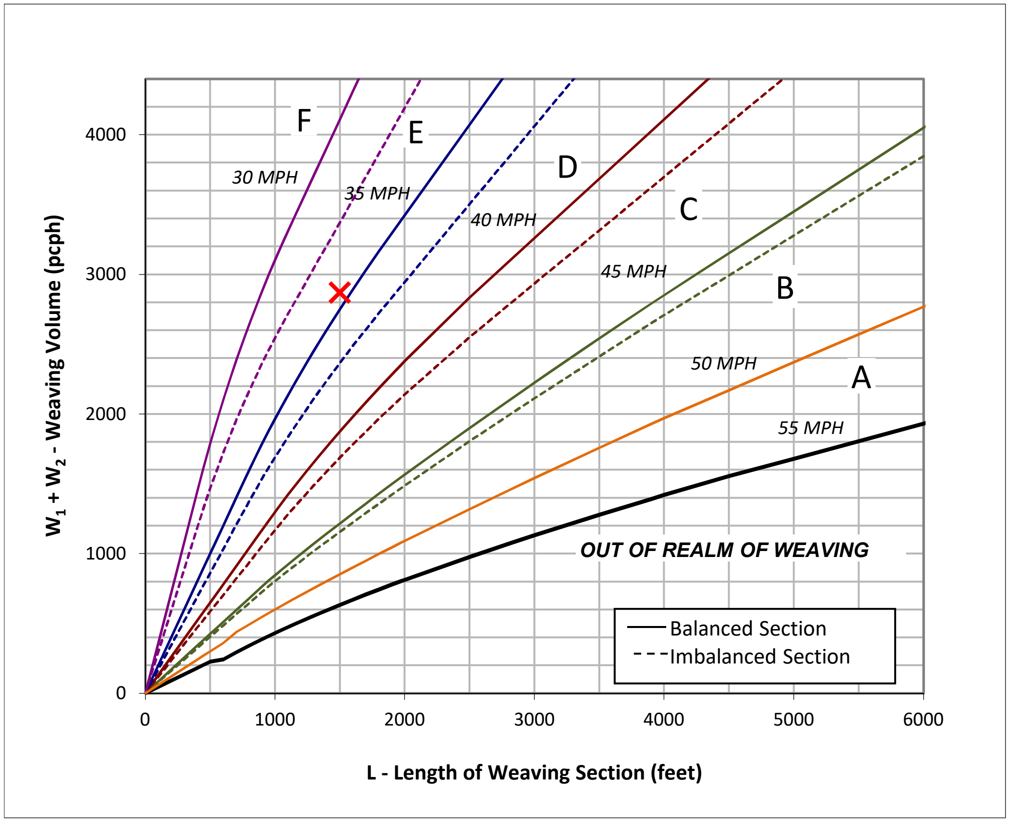
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,500

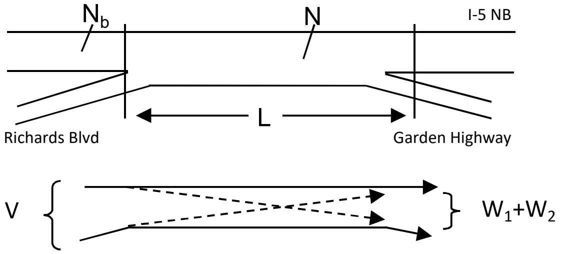
Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project PM Peak Hour
Freeway	I-5 NB
On-ramp	Richards Blvd
Off-ramp	Garden Highway

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	10,615	Volume (vph)*	1,943	Volume (vph)*	871
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	11,125	Volume (pcph)	1,982	Volume (pcph)	888



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **N**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

30 MPH and **35 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	32.5
4. Weaving Intensity Factor (k)	2.89
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	2,560
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Leisch Method for Weaving Analysis

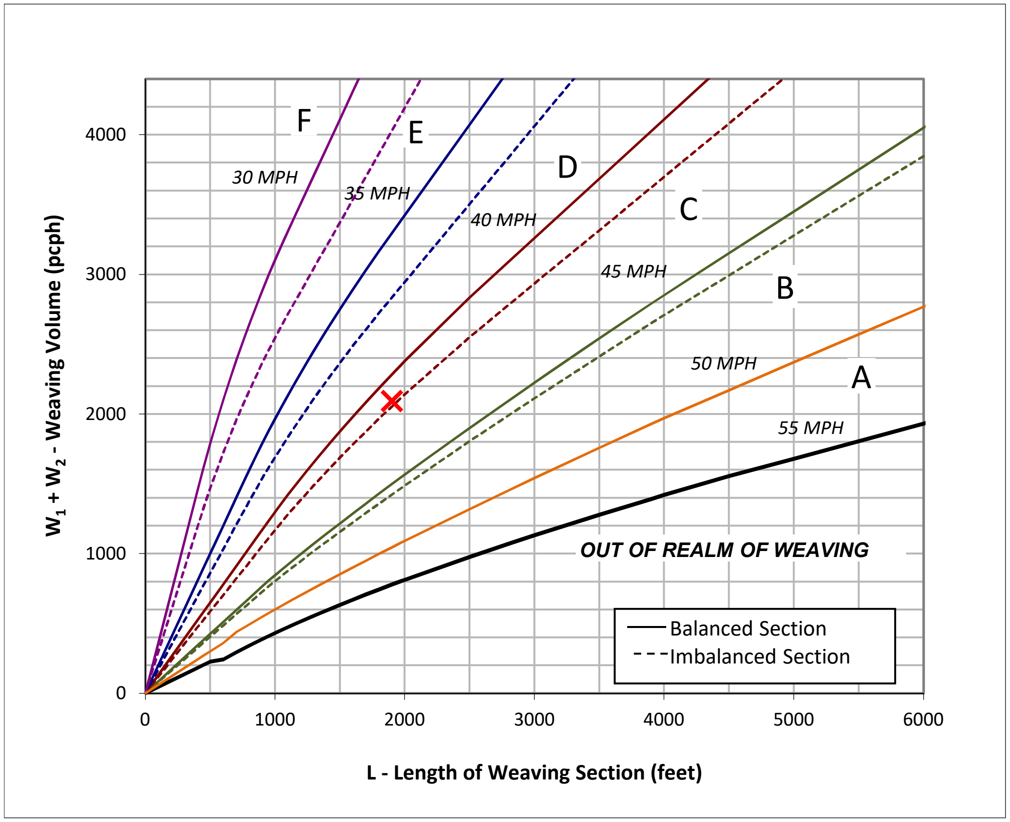
Data Input

Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	1,900

Project Information

Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Garden Highway
Off-ramp	Richards Blvd

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	8,028	Volume (vph)*	774	Volume (vph)*	1,278
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	8,413	Volume (pcph)	789	Volume (pcph)	1,304

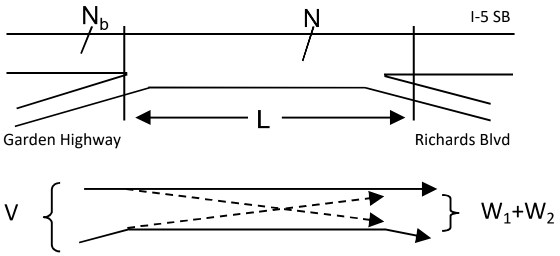


The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? Y

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

40 MPH and 45 MPH

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	41.2
4. Weaving Intensity Factor (k)	2.42
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,906
6. Level of Service (LOS)	F

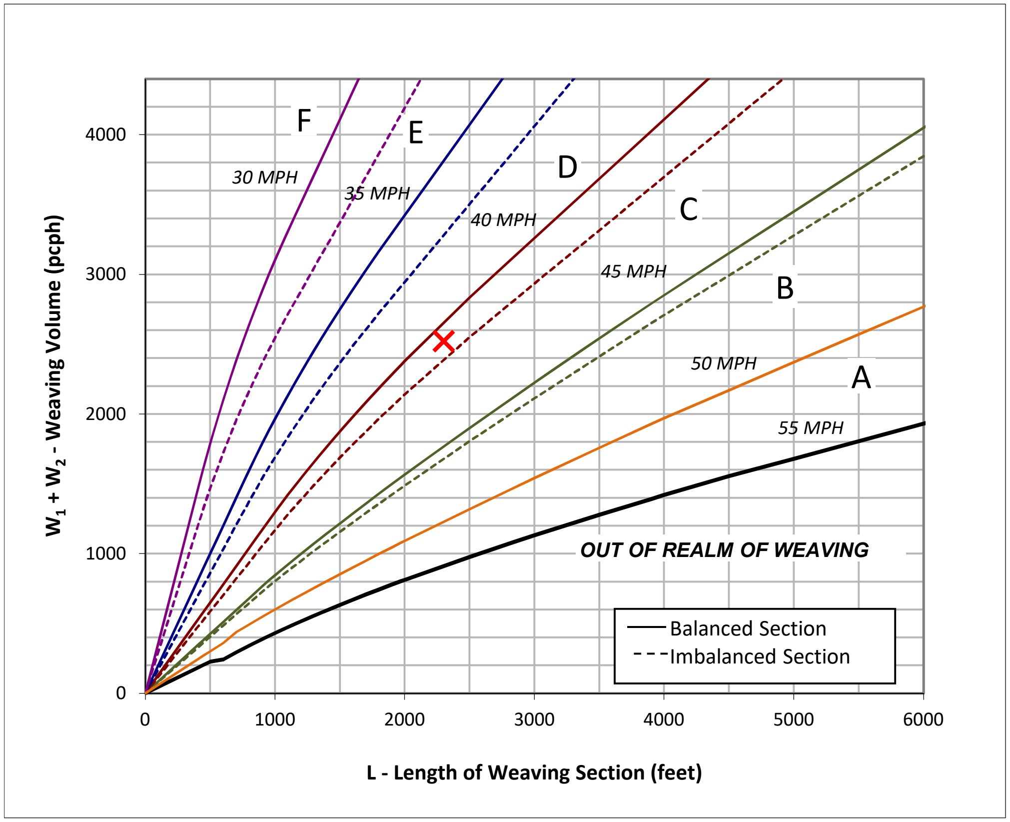
Fehr & Peers *2/26/2019*

Leisch Method for Weaving Analysis

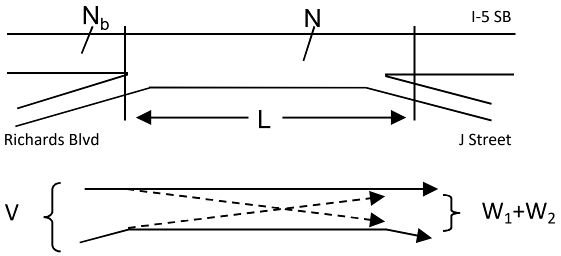
Data Input		
Number of Entering Mainline Lanes	N_b	4
Number of Lanes in Weaving Section	N	5
Length of Weaving Section (feet)	L	2,300

Project Information	
Project	Richards Blvd State Office Complex EIR
Scenario	Cumulative Plus Project PM Peak Hour
Freeway	I-5 SB
On-ramp	Richards Blvd
Off-ramp	J Street

Total Weaving Section (V)		On-ramp to Mainline (W_1)		Mainline to Off-ramp (W_2)	
Volume (vph)*	7,483	Volume (vph)*	1,115	Volume (vph)*	1,358
Truck Percentage	10%	Truck Percentage	4%	Truck Percentage	4%
PCE for Trucks	1.5	PCE for Trucks	1.5	PCE for Trucks	1.5
Volume (pcph)	7,842	Volume (pcph)	1,137	Volume (pcph)	1,385



Figure



Capacity Analysis

1. Is the weaving section balanced (Y / N)? **Y**

If optional exit lane, then "Y". Otherwise "N".

2. In the chart to the left, which two speed curves is the red "x" between?

35 MPH and **40 MPH**

If left of the 30 MPH curve, LOS is F. Select "-".

If below the 55 MPH curve, out of the realm of weaving.

3. Interpolated Weaving Speed (S_w, mph)	40.6
4. Weaving Intensity Factor (k)	2.48
5. Service Volume (SV, pcph) SV = (1/N)*[V + (k - 1)*min(W_1, W_2)]	1,904
6. Level of Service (LOS)	F

The LOS in the chart above refers to the capacity of weaving traffic only; through and ramp to ramp traffic is not included.

* Note: **Do not adjust by a Peak Hour Factor (PHF).** The methodology incorporates the PHF in the Service Volume tables.

Sources: *Completion of Procedures for Analysis and Design of Traffic Weaving Sections* , Jack E. Leisch & Associates, September 1983 and *Highway Design Manual* , California Department of Transportation, 2014

Existing Conditions															Existing Conditions	Project Condition							
Existing Employee Auto Commute Trips	**Existing Employee Commute VMT**	**Existing Employee Commute Average Auto Trip Length**	**Existing Employee Work/Other Auto Trips**	**Existing Employee Work/Other VMT**	**Existing Employee Work/Other Average Auto Trip Length**	**Existing Visitor Auto Trips**	**Existing Visitor VMT**	**Existing Visitor Average Auto Trip Length**	**Existing Service/ Delivery Auto Trips**	**Existing Service/ Delivery VMT**	**Existing Service/ Delivery Average Auto Trip Length**	**Existing Total Auto Trips**	**Existing Total VMT**	**Existing Total Average Auto Trip Length**		**Project Employee Auto Commute Trips**	**Project Employee Commute VMT**	**Project Employee Commute Average Auto Trip Length**	**Project Employee Work/Other Auto Trips**	**Project Employee Work/Other VMT**	**Project Employee Work/Other Average Auto Trip Length**	**Project Visitor Auto Trips**	**Project Visitor VMT**
5,025	69,898	13.9	1,106	3,317	3.0	314	4,369	13.9	92	1,276	13.9	6,537	78,860	12.1		3,256	43,405	13.3	710	2,129	3.0	314	4,187
3,095	47,473	15.3	681	2,043	3.0	193	2,967	15.3	56	867	15.3	4,026	53,349	13.3		2,005	30,279	15.1	437	1,311	3.0	193	2,921
2,854	41,329	14.5	628	1,884	3.0	178	2,583	14.5	52	754	14.5	3,713	46,551	12.5		1,849	26,445	14.3	403	1,209	3.0	178	2,551
10,975	**158,700**	**14.5**	**2,414**	**7,243**	**3.0**	**686**	**9,920**	**14.5**	**200**	**2,897**	**14.5**	**14,275**	**178,760**	**12.5**		**7,111**	**100,129**	**14.1**	**1,550**	**4,650**	**3.0**	**686**	**9,660**

Adjusted VMT 163,168

PROJECT GENERATED VMT

TRIP TYPE	# OF TRIPS	LENGTH	VMT
EMP - Primary	7,111	14.1	100,129
EMP - other	1,550	3.0	4,650
VISITOR	686	14.1	9,660
SERVICE	200	14.1	2,821
		TOTAL	117,260

s							Project Conditions	Net Change															Net Change
Project Visitor Average Auto Trip Length	Project Service/ Delivery Auto Trips	Project Service/ Delivery VMT	Project Service/ Delivery Average Auto Trip Length	Project Total Auto Trips	Project Total VMT	Project Total Average Auto Trip Length		Project Employee Auto Commute Trips	Project Employee Commute VMT	Project Employee Commute Average Auto Trip Length	Project Employee Work/Other Auto Trips	Project Employee Work/Other VMT	Project Employee Work/Other Average Auto Trip Length	Project Visitor Auto Trips	Project Visitor VMT	Project Visitor Average Auto Trip Length	Project Service/ Delivery Auto Trips	Project Service/ Delivery VMT	Project Service/ Delivery Average Auto Trip Length	Project Total Auto Trips	Project Total VMT	Project Total Average Auto Trip Length	
13.3	92	1,223	13.3	4,372	50,945	11.7		-1,769	-26,493	-0.6	-396	-1,187	0.0	0	-182	-0.6	0	-53	-0.6	-2,165	-27,915	-0.4	
15.1	56	853	15.1	2,692	35,365	13.1		-1,090	-17,194	-0.2	-244	-731	0.0	0	-46	-0.2	0	-14	-0.2	-1,333	-17,985	-0.1	
14.3	52	745	14.3	2,483	30,951	12.5		-1,005	-14,885	-0.2	-225	-674	0.0	0	-32	-0.2	0	-9	-0.2	-1,230	-15,601	-0.1	
14.1	**200**	**2,821**	**14.1**	**9,547**	**117,260**	**12.3**		**-3,864**	**-58,571**	**-0.4**	**-864**	**-2,593**	**0.0**	**0**	**-260**	**-0.4**	**0**	**-76**	**-0.4**	**-4,728**	**-61,500**	**-0.2**	

PROJECT EFFECT ON VMT
-55,753

Adjusted VMT 107,414

Cumulative Year No Project

SACOG Boundary Daily VMT (II, IX, XI, XX)	74,458,925
Add Intrazonal Trips	1,164,264
Subtract XX Through Trips VMT	-4,086,005
Add IX & XI Trips Beyond Gateway VMT	22,650,362
Total SACOG Generated Daily VMT	94,187,546

Cumulative Year Plus Project

SACOG Boundary Daily VMT (II, IX, XI, XX)	74,550,664
Add Intrazonal Trips	1,163,942
Subtract XX Through Trips VMT	-4,086,833
Add IX & XI Trips Beyond Gateway VMT	22,646,585
Total SACOG Generated Daily VMT	94,274,359
Change in VMT	86,813

City of Sacramento
SB 610/SB 221 Water Supply Assessment and Certification Form

This form may be used to complete water supply assessments for projects located in an area covered by the City's most recent Urban Water Management Plan.

Note: Please do not use this form if the projected water demand for your project area was not included in the City's latest Urban Water Management Plan. To review the City's Urban Water Management Plan, please visit:
http://www.cityofsacramento.org/utilities/urbanwater/index.html

Project: Richards Boulevard Office Complex Project

Date: January 2, 2019

Project Applicant (Name of Company): State of California, Department of General Services

Applicant Contact (Name of Individual): Christina Erwin on behalf of ESA for the City of Sacramento

Phone Number: 916-564-4500

E-mail: cerwin@esassoc.com

Address: ESA, 2600 Capitol Avenue, Suite 200, Sacramento, CA 95816

Project Applicant to fill in the following:

1. Does the project include:

Type of Development	Yes	No
A proposed residential development of 500 or more dwelling units		X
A shopping Center employing more than 1,000 persons or having more than 500,000 square feet?		X
A Commercial Office building employing more than 1,000 persons or having more than 250,000 square feet?	X	
A proposed hotel or motel, or both, having more than 500 rooms		X
A proposed industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area		X
A mixed use project that includes one or more of the projects specified above		X
A project that would demand an amount of water equivalent to, or greater than, the water required by a 500 dwelling unit project	X	

If the answer is no to all of the above, a water supply assessment is not required for the project.

2. Is the projected water demand for the project location included in the City's 2015 Urban Water Management Plan, adopted June 2016?

Yes: ___X___ No:________

If the answer is no, you cannot use this form. Please refer to the requirements of SB 610 for preparing a water supply assessment.

3. Please fill in the project demands below:

Type of Development	**Land Use Category**	**Demand Factor**		**Proposed Development**			**Current Zoning**		
		Residential Water Use Factor, afy/ dwelling unit	Non-Residential Water Use Factor, afy/ employee	Number Dwelling Units	Number Employees	Total Demand	Number Dwelling Units	Number Employees	Total Demand
Residential - Low	Rural Residential (RR)	.61	.09						
	Suburban Neighborhood Low Density (SNLD)								
	Traditional Neighborhood Low Density (TLDR)								
Residential - Medium	Suburban Neighborhood Medium Density (SMDR)	.39	.09						
	Urban Neighborhood Low Density (ULDR)								
Residential - High	Suburban Neighborhood High Density (SHDR)	.12	.04						
	Traditional Neighborhood Medium Density (TMDR)								
	Urban Neighborhood Medium Density (UMDR)								
	Traditional Neighborhood High Density (THDR)								
Mixed Use	Employment Center Mid Rise (ECMR)	.19	.09						
	Suburban Center (SCnt)								
	Suburban Corridor (Scor)								
	Traditional Center (TCnt)								
Mixed Use - Higher Density	Urban Center High (UCntHigh)	.15	.04						
	Urban Center Low (UcntLow)								
	Urban Corridor High (UCorHigh)								
	Urban Corridor Low (UCorLow)								
Central Business District	Central Business District (CBD)	.15	.02						
	Urban Neighborhood High Density (UHDR)								

Commercial	Regional Commercial (RC)	.15	.09						
	Employment Center Low Rise (ECLR)								
Industrial	Industrial (IND)		.14						
Public	Public/Quasi-Public (PUB)	.37	.17						
Park	Parks and Recreation (PRK)	.37	.17						
Open Space	Open Space (OS)	0	0						
Other / Office	Urban Center High (UCntHigh)	.15	.04		6,000	240			
Other									
Other									
Total Demand (AFY)					6,000	240			

4. Required Elements of Water Supply Assessment (Water Code § 10910)

A. Water supply entitlements, water rights or water service contracts (Water Code § 10910(d)):

The City's water supply entitlements, water rights and water service contract are identified and discussed in the Urban Water Management Plan, Chapters 4, and 5.

All infrastructure necessary to deliver a water supply to the project is in place, excepting any distribution facilities required to be constructed and financed by the project applicant: Yes: __X__ No: ______

B. Identification of other sources of water supply if no water has been received under City's existing entitlements, water rights or water service contracts (Water Code § 10910(e)):

Not applicable.

C. Information and analysis pertaining to groundwater supply (Water Code § 10910(f)):

Addressed by Urban Water Management Plan, Chapters 2, 4 and 5.

Verification of Water Supply
(for residential development of more than 500 dwelling units)

Based on the City's most recent Urban Water Management Plan, are there sufficient water supplies for the project during normal, single dry and multiple dry years over a 20-year period?

Yes: X   No:________

By: Brett Ewart

Title: Senior Engineer

Date: 03/11/2019

This box to be filled in by the City

Distribution:

Applicant
Development Services Department (Org: 4913) – Assigned Planner: _____________
Utilities Department (Org: 3334) - Development Review (Tony Bertrand)
Utilities Department (Org: 3332) - Capital Improvements (Brett Ewart)