City of SACRAMENTO

ADDENDUM TO A CERTIFIED ENVIRONMENTAL IMPACT REPORT

The City of Sacramento, California, a municipal corporation, does hereby prepare, make declare, and publish the Addendum to a certified Environmental Impact Report (EIR) for the following described project:

Project Name and Number: **Valley Oaks Logistics Center II at Depot Park (P22-032)**

The project is to develop two industrial warehouse buildings on an approximately 21.25-acre project site directly west of the Valley Oak Logistics Facility in the Depot Park area of Sacramento, southeast of downtown in the City of Sacramento.

The City of Sacramento, Community Development Department, has reviewed the proposed changes to the prior approved project and on the basis of the whole record before it, has determined that there is substantial evidence to support the determination that the original Environmental Impact Report (EIR) remains relevant in considering the environmental impacts of the proposed project changes and that there is no substantial evidence to support a fair argument that the changes to the project, as identified in the attached Addendum, may have a significant effect on the environmental beyond that which was evaluated in the referenced certified EIR. A subsequent EIR is not required pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Sections 21000, et seq. California).

This Addendum to the certified EIR has been prepared pursuant to Title 14, Sections 15162-15164 of the California Code of Regulations, and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

A copy of this document and all supportive documentation may be reviewed or obtained at the City of Sacramento, Community Development Department, Planning Division, 300 Richards Boulevard, Third Floor, Sacramento, California 95811.

Environmental Services Manager, City of Sacramento, California, a municipal corporation

By: Scott Johnson

Date: October 5, 2022

Valley Oaks Logistics Center II at Depot Park (P22-032)
Addendum to a Certified Environmental Impact Report (SCH# 94122038)
File Number/Project Name: Valley Oaks Logistics Center II at Depot Park (P22-032)

Proposed Project: The proposed project would include development of two industrial warehouse buildings on an approximately 21.25-acre project site directly west of the Valley Oak Logistics Facility in the Depot Park area of Sacramento, southeast of downtown. A detailed description of the proposed project is provided below under *Project Description*.

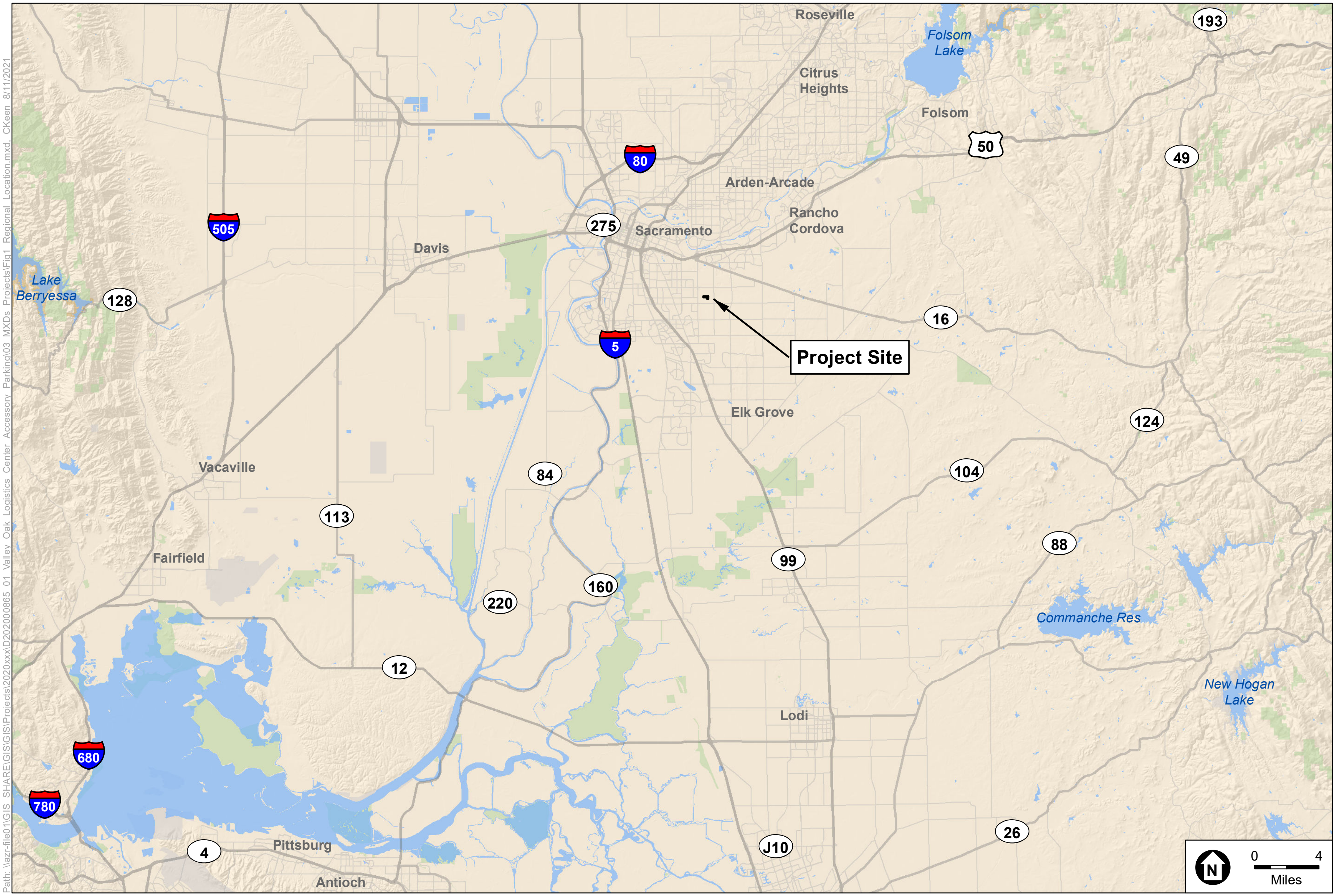
Project Location: The project site is located in Sacramento, California, approximately 80 miles east of San Francisco and 85 miles west of Lake Tahoe. Sacramento is a major transportation hub, the point of intersection of transportation routes that connect Sacramento to the San Francisco Bay area to the west, the Sierra Nevada mountains and Nevada to the east, Los Angeles to the south, and Oregon and the Pacific Northwest to the north. The City is bisected by major freeways including Interstate 5 (I-5) that traverses the state from north to south; Interstate 80 (I-80), which provides an east-west connection between San Francisco and Reno; and U.S. Highway 50 which provides an east-west connection between Sacramento and South Lake Tahoe. Two railroads, the Union Pacific (UP) Railroad and the BNSF Railway transect Sacramento. **Figure 1** shows the location of the project site in the Sacramento region.

The project site is approximately 21.25 acres of undeveloped and disturbed land in the Depot Park area of Sacramento, southeast of downtown. The two proposed warehouse buildings would be a combined total of 373,708 square feet, with Building A proposed to be 200,426 square feet and Building B proposed to be 173,282 square feet. The proposed project site is bound by Midway Street to the east, Park Avenue and a solar field to the south, undeveloped land to the west, and an unnamed road that will be referred to as Tripoli Avenue to the north. Additionally, the recently constructed, 477,020 square-foot Valley Oak Logistics Center lies directly east of the site. **Figure 2** and **Figure 3** show the location of the project site within the Depot Park area of Sacramento and the project vicinity and site, respectively.

Existing Plan Designations and Zoning: The project site is under the Industrial general plan land use designation, which allows for employment-generating uses that may produce loud noise or noxious odor and tend to have a high volume of truck traffic. Such uses are described on page 2-106 of the Sacramento 2035 General Plan to include the following:

- Industrial or manufacturing that may occur within or outside a building;
- Office, retail and service uses that provide support to employees; and
- Compatible public, quasi-public and special uses.[1]

[1] City of Sacramento, 2015. *Sacramento 2035 General Plan, Land Use Element*. March 3, 2015. Page 2-106.



SOURCE: ESRI, 2021; ESA, 2021

Valley Oak Logistics Center II at Depot Park

Figure 1
Regional Location

ESA

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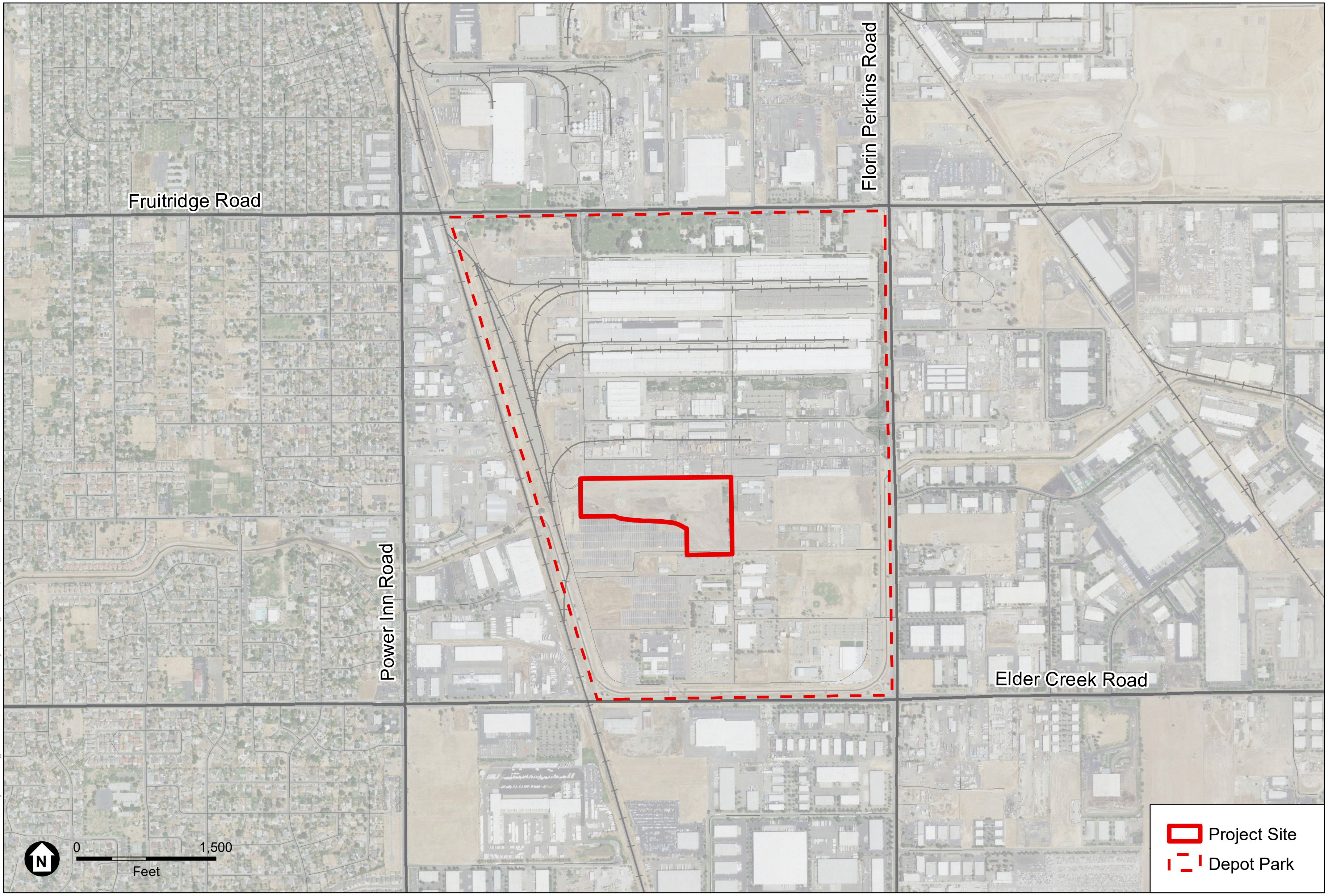
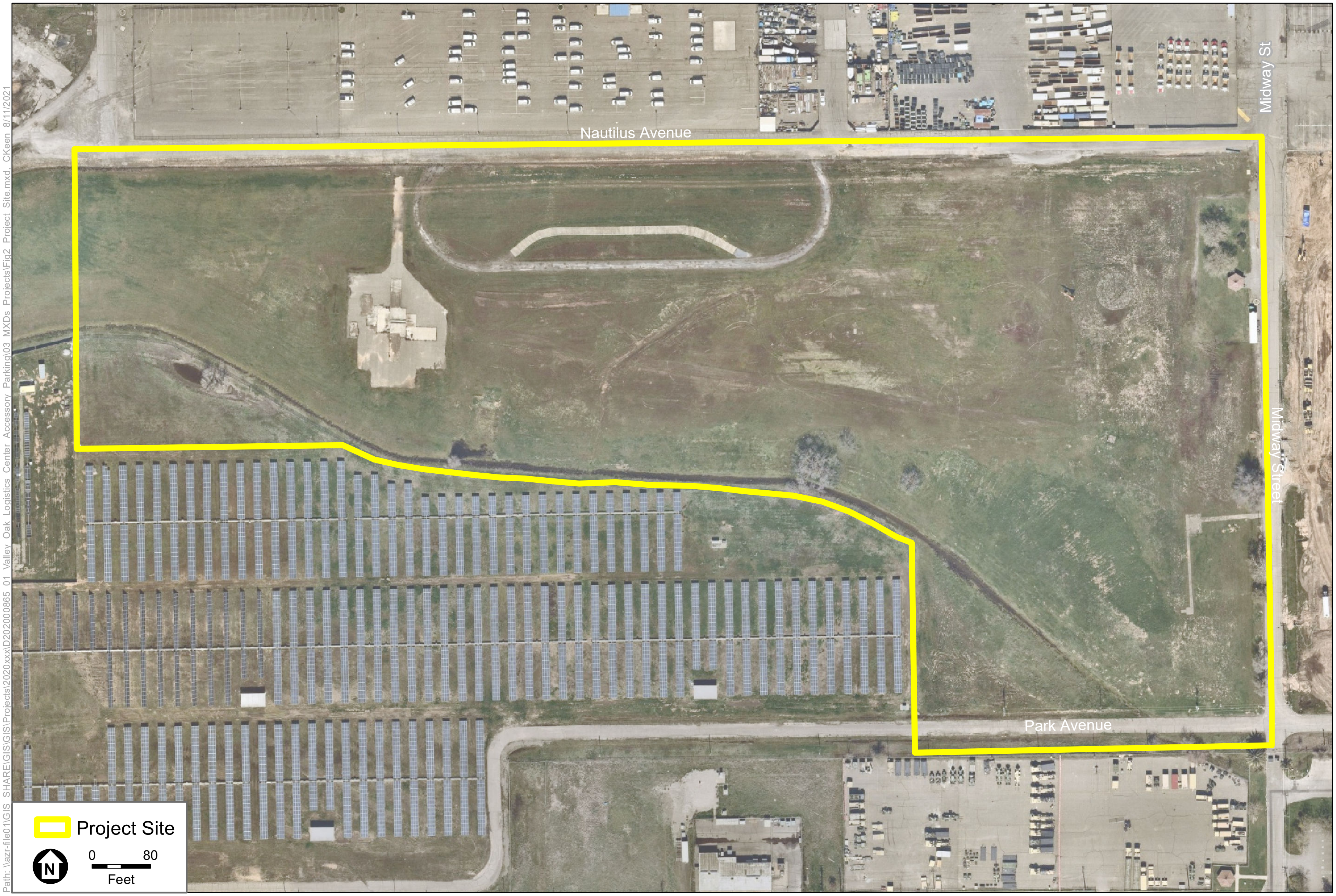


SOURCE: NAIP, 2018; Esri, 2015; ESA, 2020

Valley Oak Logistics Center II at Depot Park

Figure 2
Project Location in Depot Park

ESA



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SOURCE: Nearmap 03/13/2021; ESA, 2021

Valley Oak Logistics Center II at Depot Park

Figure 3
Project Site

ESA

The 2035 General Plan notes that the Industrial general plan land use designation should not be located adjacent to a residential neighborhood or center without substantial buffers, which can include land under the Employment Center Low Rise general plan land use designation, parks, greenways, or open space.[2] The development standard for the Industrial general plan land use designation limits development to a maximum floor area ratio (FAR) of 1.0.[3]

The project site is zoned M-2-SPD (Heavy Industrial – Special Planning District) and is within the Sacramento Army Depot Special Planning District. The M-2 zone is intended to permit the manufacture or treatment of goods and allows for a variety of industrial, agricultural, and commercial uses. The M-2 zone also allows for a variety of conditional or special uses. City policy limits development in M-2 zones to a maximum height of 70 feet, with no limitations on maximum density.

The Sacramento Army Depot Special Planning District (SPD) is intended to guide the establishment of land uses during the development of the Sacramento Army Depot reuse plan. Permitted uses within the SPD include uses permitted by right in the M-2 zone or office use. For office use to qualify under that provision, the total amount of office space in the SPD, with inclusion of proposed development, must not exceed 349,748 square feet. The total number of employees for proposed development within the SPD must not raise the total number of employees in the SPD above 3,000. These standards may be exceeded with the granting of a conditional use permit by the Planning and Design Commission.

The proposed warehouse buildings are designed to offer a high level of flexibility regarding tenant divisibility. Anticipated use for the project site is high-cube and potential users may include warehousing, storage, logistics, or manufacturing.

Project Background

The project site is located in the City of Sacramento, within the Depot Park area, the former site of the Sacramento Army Depot. The project site has been included in prior City land use approvals and has been the subject of review pursuant to the California Environmental Quality Act (CEQA).

Sacramento Army Depot Reuse Plan and Programmatic Environmental Impact Report

The Sacramento Army Depot Reuse Plan (Reuse Plan) and Programmatic EIR (SCH# 94032090) were adopted by the City Council in October 1994. The Reuse Plan was developed to guide development within the former Sacramento Army Depot site, as it transitioned from Department of Army ownership and operations to non-federal ownership

2 City of Sacramento, 2015. *Sacramento 2035 General Plan, Land Use Element*. March 3, 2015. Page 2-106.

3 The Sacramento 2035 General Plan (see page 2-33) defines floor area ratio (FAR) as the gross building area on a site, excluding structured parking, to the net developable area of the site. The net developable area is the total area of a site excluding portions that cannot be developed (e.g., right-of-way, public parks, etc.).

and urbanized uses that would be integrated into the surrounding City. The plan was intended to result in the designation for City/private uses of 323 acres of industrial land, 79.1 acres of public/quasi-public land, and 83 acres designated for open space.

The project site was included within the 323 acres designated by the Reuse Plan for industrial use.

At the time the Reuse Plan was developed and adopted, a large portion of the Sacramento Army Depot Site was intended for use or redevelopment by Packard Bell. The Plan was adopted, including designations for areas under Packard Bell's control, to provide guidance in the event that Packard Bell vacated all or portions of the site. The Land Use Plan, included in the Reuse Plan included development standards and guidelines intended to accomplish the following:

- Define districts within the reuse area;
- Specify appropriate land uses within the development;
- Encourage reuse of existing structures for building "recycling";
- Specify design parameters of new structures;
- Define a continuous pedestrian circulation system that encourages walking and alternative modes of transportation;
- Provide a strong tree and landscape concept that creates a pedestrian-scaled and tree-shaded environment; and
- Sensitively integrate natural resource areas as open space within the reuse area.

The Programmatic EIR prepared for the Reuse Plan identified the following significant unavoidable impacts that may occur from implementation of the Reuse Plan:

- Implementation of the [Reuse Plan], in conjunction with cumulative buildout, would result in a significant and unavoidable level of traffic;
- Implementation of the [Reuse Plan] would result in a significant and unavoidable increase in regional ozone levels;
- Implementation of the [Reuse Plan], in conjunction with cumulative development, would result in a significant and unavoidable increase in the level of ozone precursors;
- Implementation of the [Reuse Plan] would result in a significant and unavoidable increase in PM_{10} due to an increase in traffic associated with the project;
- Implementation of the [Reuse Plan], in conjunction with cumulative development, would result in a significant and unavoidable increase in PM_{10};
- Implementation of the [Reuse Plan] would result in a significant and unavoidable loss of burrowing owl habitat; and

- Implementation of the [Reuse Plan], in conjunction with the cumulative buildout of the region, would result in a significant and unavoidable loss of wildlife habitat.

Sacramento Army Depot Redevelopment Plan and Environmental Impact Report

The City of Sacramento approved the Sacramento Army Depot Redevelopment Plan (Redevelopment Plan) and certified an EIR for the Redevelopment Plan (Redevelopment EIR, SCH# 94122038) on June 6, 1995. The Redevelopment Plan was intended to revitalize and upgrade the industrial and commercial properties and public properties/facilities for civilian use. The Redevelopment Plan area included the former Sacramento Army Depot site and additional area to the north of Fruitridge Road and east of Florin Perkins Road. Redevelopment activities incorporated into the Redevelopment Plan included removal or rehabilitation of buildings characterized by age and obsolescence, mixed character or shifting uses, defective design and character of physical construction, and deterioration; elimination of parcels of irregular form, shape, or inadequate size which make development problematic; improvements to the circulation system, streets, sidewalks, curbs, and gutters; upgrading the wastewater system, drainage, and water system facilities; landscape, lighting, and signage improvements; and construction of public facilities. The Sacramento Housing and Redevelopment Agency (SHRA) was responsible for preparation of the Redevelopment Plan and Redevelopment EIR.

The Redevelopment Plan authorized the SHRA to undertake the following activities pursuant to the Redevelopment Plan:

1. The acquisition of real property (by eminent domain if necessary) as may be needed to carry out he Plan throughout the Project Area;
2. The management and operation of such property under the ownership and control of the Agency until it is resold;
3. The relocation and re-housing of displaced occupants and displaced businesses;
4. The demolition or removal of buildings and improvements;
5. The rehabilitation and preservation of buildings and structures;
6. The installation, construction, expansion, addition, extraordinary maintenance or reconstruction of streets, utilities, and other public improvements and public facilities;
7. The execution of agreements with owners and occupants of property desiring to participate in the project in accordance with the Redevelopment Plan;
8. The disposition of land to private developers and public agencies for the construction of new improvements in accordance with the Redevelopment Plan;
9. Redevelopment of land by private enterprise and public agencies for uses in accordance with the Plan;

10. Rehabilitation, development, or construction of low and moderate income housing within the Project Area and City;
11. The establishment and retention of control, restrictions and covenants running with the land so the property will continue to be used in accordance with the Redevelopment Plan.

In addition to the above, the SHRA was required to replace on a one-for-one basis within four years any low and moderate income housing units destroyed or removed from the market by the Redevelopment Plan.

The Redevelopment EIR analyzed the policies and actions implemented by the Redevelopment Plan, including the land use and zoning designations and development assumptions included in the 1994 Reuse Plan and 1994 Reuse Plan EIR. The initial study and Notice of Preparation (NOP) identified the following issues to be evaluated in the EIR:

- Land Use, Plans and Policies
- Transportation and Circulation
- Air Quality
- Noise
- Cultural Resources
- Biological Resources
- Hydrology and Water Quality
- Public Services
- Public Health and Safety

The Redevelopment Plan EIR identified the following significant unavoidable impacts that could result from implementation of the Redevelopment Plan:

- Significant unavoidable cumulative impacts due to increased traffic volumes on roadways in the project study area;
- Significant unavoidable cumulative impacts due to increases in criteria air pollutants; and
- Significant unavoidable construction noise impacts.

Sacramento 2030 General Plan and Sacramento 2035 General Plan Update

The City of Sacramento has updated its General Plan two times since adoption of the Redevelopment Plan and certification of the Redevelopment Plan EIR. The Sacramento 2030 General Plan was adopted and the Sacramento 2030 General Plan EIR (Master EIR) was certified on March 3, 2009. Under the 2030 General Plan, the project site remained under the Industrial general plan land use designation.

In 2015, the City adopted the Sacramento 2035 General Plan and certified the Sacramento 2035 General Plan Master EIR. The Sacramento 2035 General Plan is the existing General Plan for the City. The 2035 General Plan maintained the Industrial land use designation for the project site, and the 2035 General Plan Master EIR evaluated the physical effects associated with development of the project site under the Industrial land use designation.

Based on existing entitlements, allowable development on the project site would be guided by the zoning and general plan land use designations for the project site. Development policy under the existing general plan land use designation for the project site limits the ranges of allowable floor area ratios for each land use designation. Development under the existing zoning designations for the project site is limited by the maximum allowable number of employees and office square feet within the Sacramento Army Depot Special Planning District.

Existing CEQA Approval

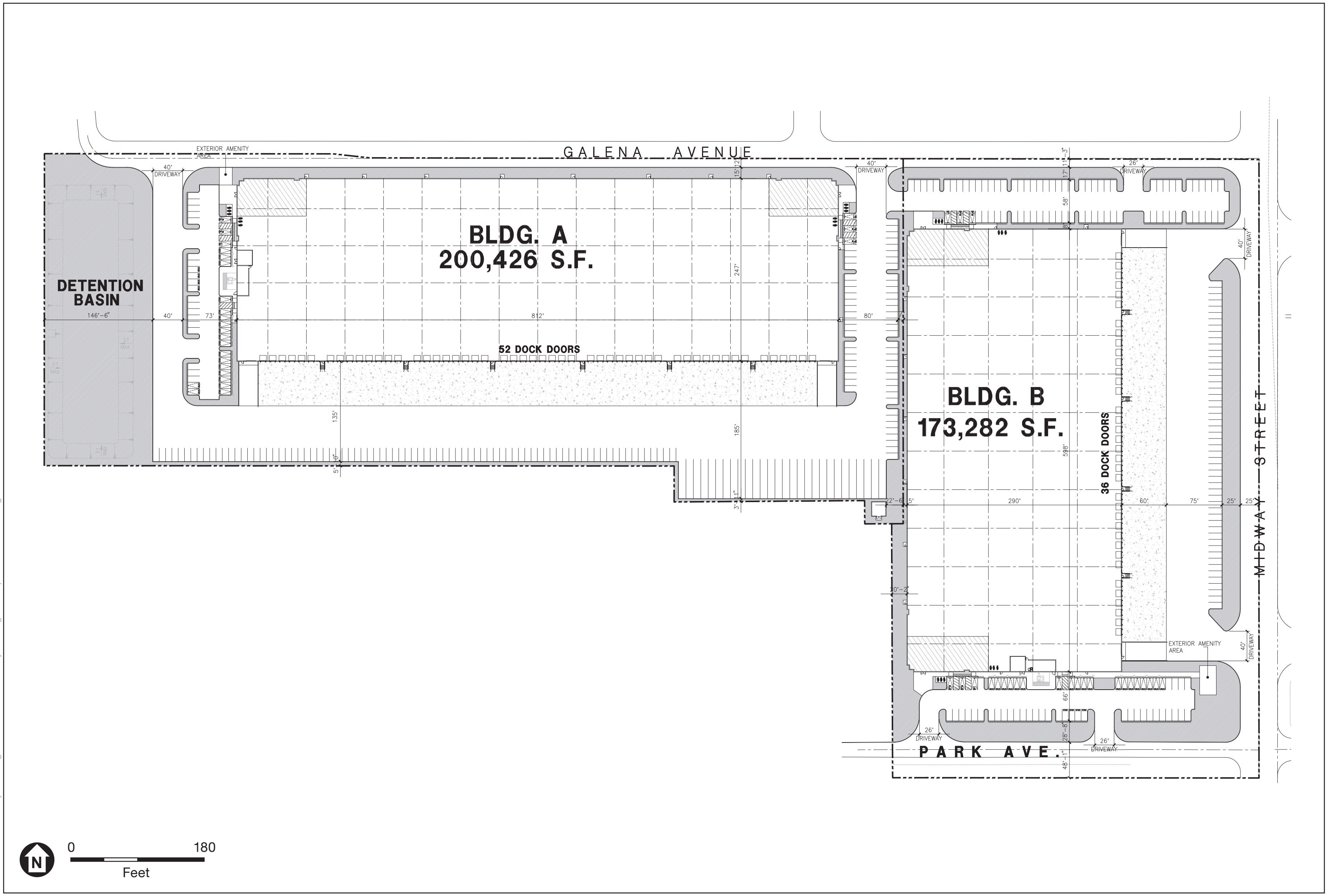
As described above, the project site has been assumed to be developed for industrial uses since adoption of the Sacramento Army Depot Reuse Plan. This development scenario has remained in place for all subsequent land use plans and CEQA documents.

Project Description

I. Project Design

The proposed project site is bound by Midway Street to the east, Park Avenue and a solar field to the south, undeveloped land to the west, and Nautilus Avenue to the north, and encompasses approximately 21.25 acres. The proposed project entails development of two warehouse buildings within the undeveloped portion of parcel 062-0010-035, directly west across Midway Street from the existing 477,020-square-foot Valley Oak Logistics Facility project site, in the eastern portion of the parcel, and previously approved by the City in 2020 (see **Figure 4**). Total building square footage would be 373,708 square feet. Each building would have a clear height of 36 feet.

Building A would be a single-story 200,426 square foo structure, situated in the northwest portion of the project site (see **Figure 5**). The building would have frontage along Nautilus Avenue, include 52 loading bays along the southern side of the building, and standard vehicle parking along the east and west sides of the structure. Building A would be anticipated to be programmed to include approximately 9,000 square feet of office space, and 191,560 square feet of warehouse space. However, the specific programming for both of the structures would be determined by the end users. The Building A site would also include a large stormwater detention area on the westernmost section of the parcel.



SOURCE: HPA Architecture, 2022

Valley Oak Logistics Center II at Depot Park

Figure 4
Project Layout

ESA

SOURCE: HPA Architecture, 2022

Valley Oak Logistics Center II at Depot Park

Figure 5
Conceptual Building A Elevations

ESA

Building B would be a single-story, 173,282 square foot structure, situated on the western side of the project site, with 36 loading bays along the east side of the building, and standard vehicle parking located primarily to the north and south of the structure. **Figure 6** shows the conceptual elevations for the proposed structure. Building B would be anticipated to be programmed to include approximately 10,000 square feet of office, and 163,400 square feet of warehouse uses.

Parking and Access

The proposed Building A would include 214 auto parking spaces, including 157 standard spaces, 4 clean air/vanpool spaces, 17 EV parking spaces, 1 accessible EV van space, 1 accessible standard EV space, 4 van accessible spaces, 2 accessible standard spaces, and 28 trailer parking spaces, in addition to the 52 loading bays. The proposed Building B would have include 188 auto parking spaces, including 159 standard spaces, 4 clean air/vanpool spaces, 17 EV parking spaces, 1 accessible EV van space, 1 accessible standard EV space, 4 van accessible spaces, and 2 accessible standard spaces, in addition to the 36 loading bays. As currently designed, Building A would have two 40-foot driveway access points from Nautilus Avenue, and Building B has two 40-foot driveway access points from Midway Street. The Building B site would also be accessible to standard vehicles at two 25-to-26-foot driveways along Park Avenue, and a 26-foot driveway along Nautilus Avenue.

The proposed bicycle parking facilities would include 24 total long-term bicycle parking spaces, with 12 spaces provided for each building.

Lighting

Onsite security lighting would be provided in the parking lot and on the exterior of the proposed structures. Proposed outdoor lighting fixtures would include downward shielding for overhead lighting fixtures and low-intensity exterior lighting to minimize light spillover onto adjacent uses.

Landscaping

Within the project site, parking aisles would be lined with planter boxes with trees and shrubs in compliance with City of Sacramento shading requirements throughout the parking areas. **Figure 7** shows the preliminary landscape plan for the proposed project. Landscaping would be designed to meet California Assembly Bill (AB) 1881, Executive Order B-29-15, and the City's Model Water Efficient Landscape Ordinance.

Signs

The proposed project would include signage for the two buildings to distinguish their use for office and warehouse purposes within the Depot Park area.

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SOURCE: HPA Architecture, 2022

Valley Oak Logistics Center II at Depot Park

Figure 6
Conceptual Building B Elevations

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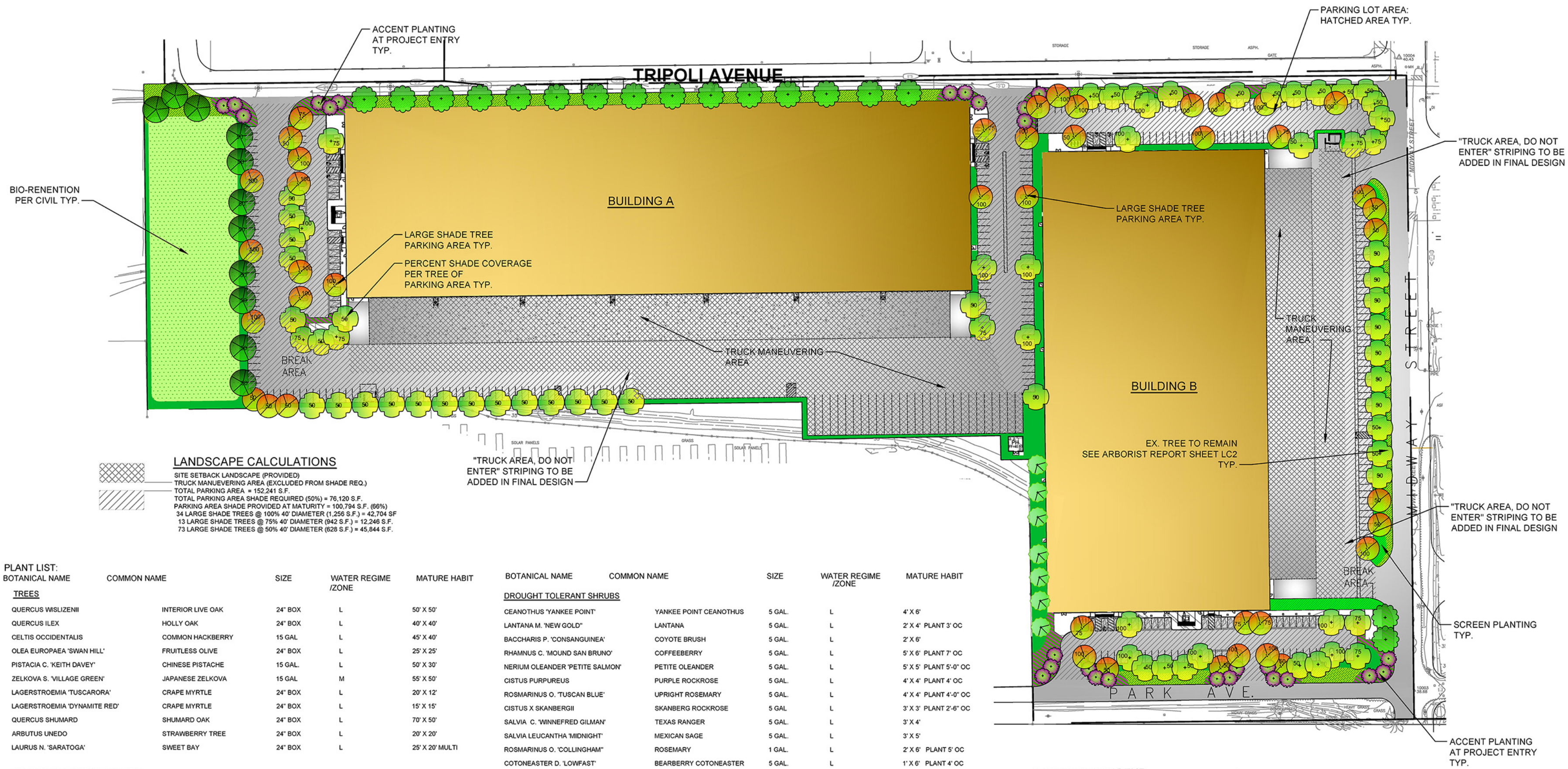


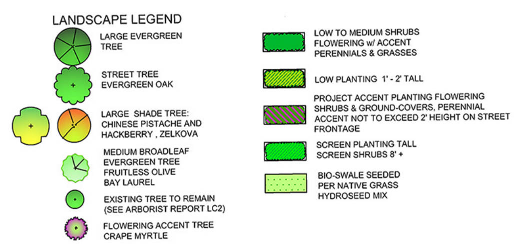
LANDSCAPE CALCULATIONS

SITE SETBACK LANDSCAPE (PROVIDED)
TRUCK MANUEVERING AREA (EXCLUDED FROM SHADE REQ.)
TOTAL PARKING AREA = 152,241 S.F.
TOTAL PARKING AREA SHADE REQUIRED (50%) = 76,120 S.F.
PARKING AREA SHADE PROVIDED AT MATURITY = 100,794 S.F. (66%)
34 LARGE SHADE TREES @ 100% 40' DIAMETER (1,256 S.F.) = 42,704 SF
13 LARGE SHADE TREES @ 75% 40' DIAMETER (942 S.F.) = 12,246 S.F.
73 LARGE SHADE TREES @ 50% 40' DIAMETER (628 S.F.) = 45,844 S.F.

PLANT LIST:

BOTANICAL NAME	COMMON NAME	SIZE	WATER REGIME /ZONE	MATURE HABIT
TREES				
QUERCUS WISLIZENII	INTERIOR LIVE OAK	24" BOX	L	50' X 50'
QUERCUS ILEX	HOLLY OAK	24" BOX	L	40' X 40'
CELTIS OCCIDENTALIS	COMMON HACKBERRY	15 GAL	L	45' X 40'
OLEA EUROPAEA 'SWAN HILL'	FRUITLESS OLIVE	24" BOX	L	25' X 25'
PISTACIA C. 'KEITH DAVEY'	CHINESE PISTACHE	15 GAL.	L	50' X 30'
ZELKOVA S. 'VILLAGE GREEN'	JAPANESE ZELKOVA	15 GAL	M	55' X 50'
LAGERSTROEMIA 'TUSCARORA'	CRAPE MYRTLE	24" BOX	L	20' X 12'
LAGERSTROEMIA 'DYNAMITE RED'	CRAPE MYRTLE	24" BOX	L	15' X 15'
QUERCUS SHUMARD	SHUMARD OAK	24" BOX	L	70' X 50'
ARBUTUS UNEDO	STRAWBERRY TREE	24" BOX	L	20' X 20'
LAURUS N. 'SARATOGA'	SWEET BAY	24" BOX	L	25' X 20' MULTI
EVERGREEN SCREENING SHRUBS				
ARBUTUS U. 'COMPACTA'	DW. STRAWBERRY	5 GAL,	L	8' X 10' PLANT 6'-0" OC
ARCTOSTAPHYLOS 'HOWARD MCMINN'	MANZANITA	5 GAL.	L	8' X 8 PLANT 9'-0" OC'
XYLOSMA COMPACTA	SILVERBERRY	5 GAL.	L	5' X 6' PLANT 5'-0" OC
DODONEA VISCOSA	HOP BUSH	5 GAL,	L	8' X 10' PLANT 8'-0" OC
OLEA 'LITTLE OLLIE'	DW OLIVE	5 GAL.	L	6' X 5' PLANT 6'-0" OC
HETEROMELES ARBUTIFOLIA	TOYON	15 GAL.	L	15' X 15' MULTI-STEM
GRASSES				
FESTUCA MAIREI	ATLAS FESCUE	1 GAL.	L	2' X 3' PLANT 2'-6" OC
PENNISETUM ORIENTALE	FOUNTAIN GRASS	1 GAL.	L	3' X 3'
MUHLENBERGIA L. 'AUTUMN GLOW'	MUHLY GRASS	1 GAL.	L	4' X 4' PLANT 3' OC
CALAMAGROSTIS A. 'KARL FOESTER'	FEATHEREED	1 GAL.	L	2' X 3' PLANT 3' OC
LOMANDRA LONGIFOLIA 'BREEZE'	BREEZE MAT RUSH	1 GAL.	L	3' X 3' PLANT 2'-6" OC

BOTANICAL NAME	COMMON NAME	SIZE	WATER REGIME /ZONE	MATURE HABIT
DROUGHT TOLERANT SHRUBS				
CEANOTHUS 'YANKEE POINT'	YANKEE POINT CEANOTHUS	5 GAL.	L	4' X 6'
LANTANA M. 'NEW GOLD"	LANTANA	5 GAL.	L	2' X 4' PLANT 3' OC
BACCHARIS P. 'CONSANGUINEA'	COYOTE BRUSH	5 GAL.	L	2' X 6'
RHAMNUS C. 'MOUND SAN BRUNO'	COFFEEBERRY	5 GAL.	L	5' X 6' PLANT 7' OC
NERIUM OLEANDER 'PETITE SALMON'	PETITE OLEANDER	5 GAL.	L	5' X 5' PLANT 5'-0" OC
CISTUS PURPUREUS	PURPLE ROCKROSE	5 GAL.	L	4' X 4' PLANT 4' OC
ROSMARINUS O. 'TUSCAN BLUE'	UPRIGHT ROSEMARY	5 GAL.	L	4' X 4' PLANT 4'-0" OC
CISTUS X SKANBERGII	SKANBERG ROCKROSE	5 GAL	L	3' X 3' PLANT 2'-6" OC
SALVIA C. 'WINNEFRED GILMAN'	TEXAS RANGER	5 GAL.	L	3' X 4'
SALVIA LEUCANTHA 'MIDNIGHT'	MEXICAN SAGE	5 GAL.	L	3' X 5'
ROSMARINUS O. 'COLLINGHAM"	ROSEMARY	1 GAL.	L	2' X 6' PLANT 5' OC
COTONEASTER D. 'LOWFAST'	BEARBERRY COTONEASTER	5 GAL.	L	1' X 6' PLANT 4' OC
ARCTOSTAPHYLOS 'EMERALD GREEN'	MANZANITA	5 GAL.	L	1' X 4' PLANT 4' OC
EREMOPHILA GLABRA CARNOSA	WINTER BLAZE	5 GAL.	L	3' X 4'
PERENNIALS				
COREOPSIS 'ROSEA'	TICKSEED	1 GAL.	L	1' X 2'
DIETES V. 'VARIEGATA'	FORT NIGHT LILY	1 GAL.	L	3' X 3'
TULBAGHIA V. 'TRICOLOR'	SOCIETY GARLIC	1 GAL.	L	1.5' X 1.5'
ACHILLEA 'MOONSHINE'	YARROW	1 GAL.	L	3' X 3'



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SOURCE: HPA Architecture, 2022

Valley Oak Logistics Center II at Depot Park

Figure 7
Landscape Plan

ESA

Project Utilities

The proposed project would utilize existing utility infrastructure around the project site. **Figure 8** shows the preliminary utility plan for the proposed project.

Water Supply

The proposed project would be served by the City of Sacramento for domestic and fire-suppression water needs. The project site is located in an area of the City that is served by an extensive private system of service mains located within Midway Street. The proposed project would establish primary connections to utility infrastructure from the service points that are planned to serve the proposed logistics facility structures in the northeast corner of the project site. Water supply would be provided from a 10-inch private main located on Midway Street. Fire suppression water supply would be accessed via two 12-inch supply mains extending from Depot 1 through the two driveways that connect to Midway Street.

Wastewater

Wastewater service for the project site would be collected by the Sacramento Area Sewer District's (SASD) Separated Sewer System, conveyed to the Sacramento Regional County Sanitation District (Regional San) system, and ultimately treated in the Regional San Wastewater Treatment Plan (WWTP) located in Elk Grove. Wastewater generation points would be limited to a restroom at a proposed guard structure at the proposed south driveway at Midway Street. The proposed project would connect to the existing 8-inch sanitary sewer main in Midway Street.

Drainage

The proposed project would construct a stormwater drainage system that would direct all flows from the project site through an onsite detention system, located on the west side of the project site. Storm drainage would be treated onsite before being released into a swale that outfalls into Morrison Creek approximately 200 feet west of the Project. Based on review by the Central Valley Flood Protection Board (CVFPB), no permit would be required for the construction of the proposed outfall.

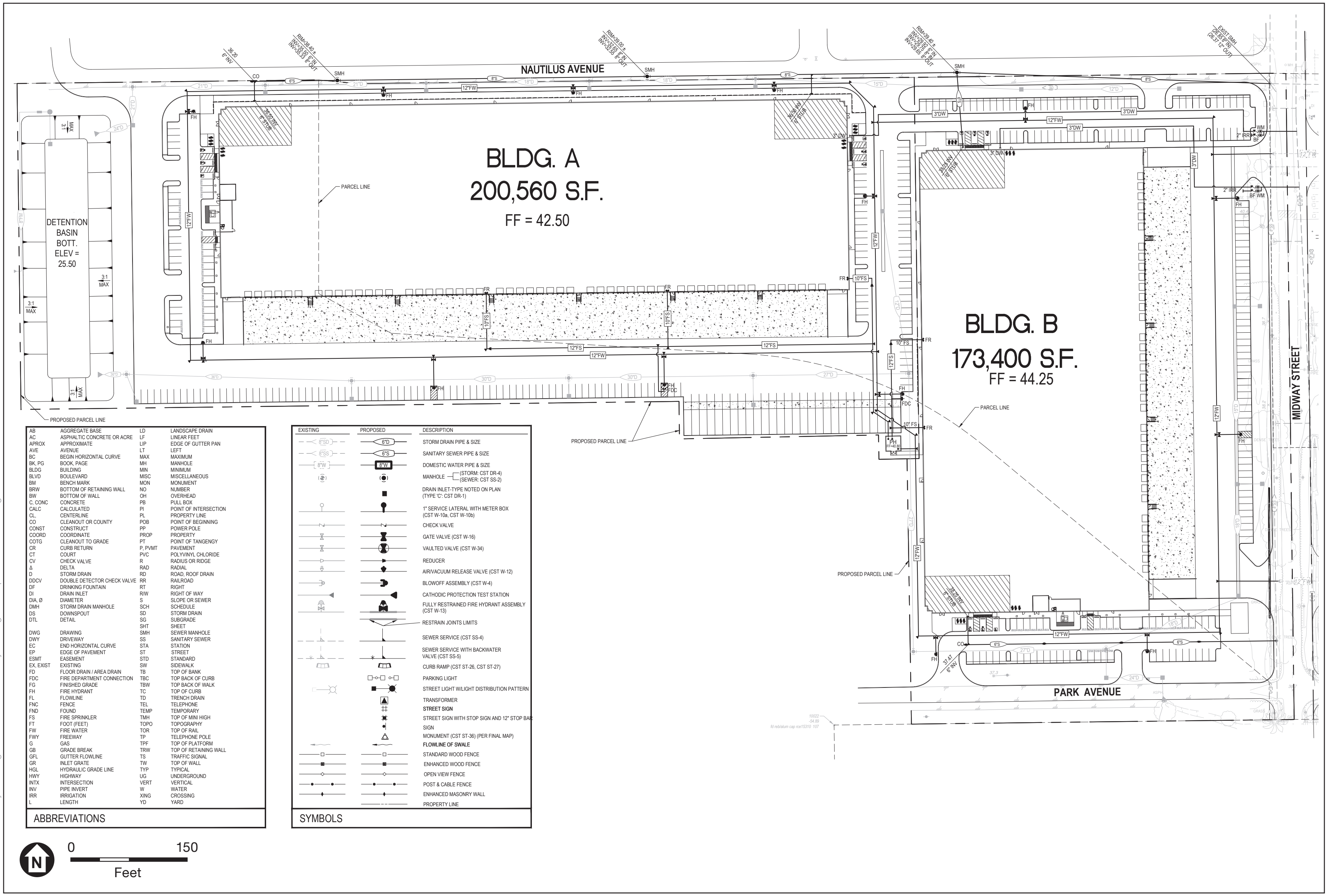
Energy

Electrical Service

The project site would be provided electrical service by the Sacramento Municipal Utility District (SMUD). The main electrical system connection to the project site would be located within East Midway Street. Aside from connections that may be necessary to tie project systems to the SMUD system under adjacent streets, no further offsite improvements to the SMUD electrical system would be required.

Natural Gas

Natural gas supply would be accessed via service connections to the natural gas infrastructure, within Midway Street, to the east of the project site.



D202000865.01- Valley Oak Logistics Center Accessory Parking\05 Graphics-GIS-Modeling-USE AZURE

SOURCE: HPA Architecture, 2022

Valley Oak Logistics Center II at Depot Park

Figure 8
Preliminary Utility Plan

ESA

Telecommunications

The proposed project would acquire telephone and data service from the current existing carrier(s) that are established in the City of Sacramento. Connection(s) would be completed in existing telephonic and data manholes. The project applicant would coordinate with the City and other utility providers to determine the optimal solution for gaining access to adjacent lines, potentially including either open cuts or directional drilling that could be done in these manholes concurrent with other utility infrastructure connections. If feasible, service to the project site would be coordinated with SMUD in a common joint trench, in which conduits would be added to the joint trench for telecommunication service.

II. Proposed Project Operations

Hours of operation would be anticipated to be primarily during daytime hours. However, the end users for each building may receive or originate freight deliveries during evening and early morning hours, consistent with other lots of similar size.

On-Site Project Circulation

Vehicular Circulation

Project frontage and driveways would be located on the north, south, and east sides of the project site at Nautilus Avenue, Midway Street, and Park Avenue. Vehicular access would be provided at these three streets, with driveways anticipated to be located near the driveways for the constructed logistics facility on the other side of Midway Street.

Pedestrian and Bicycle Facilities

There are no pedestrian or bicycle facilities proposed as part of the proposed project. The project site is located within the enclosed Depot Park, for which pedestrian and bicycle entry is controlled. Pedestrian and bicycle access would be available to the project site via the gated entries to Depot Park. The project site would be anticipated to be accessed by pedestrian and bicycle travel via Nautilus Avenue and Mortono Street.

Transit

The proposed project would not include transit facilities or improvements to existing transit infrastructure. The project site is within the closed and gate-controlled Depot Park. There is no transit service within Depot Park. All nearby transit routes are on the roadways bordering Depot Park. The nearest transit stops are located along Power Inn Road, approximately 0.3 miles west of the project site.

III. Project Construction

Timing

The proposed project would be constructed in a single phase, which would be anticipated to last approximately 12 months, which could begin in February 2023.

Demolition

The project site is currently vacant and demolition that would occur as part of the proposed project would be limited to elimination of existing concrete pads..

Site preparation

Site preparation would include removal of most existing trees on site. The project site is previously graded and would not be anticipated to require substantial import or export of fill.

Construction

Construction Circulation

Project Site

All project staging would be anticipated to occur on site. Truck trips, equipment movement, and construction worker traffic to and from the site would be anticipated to access Building A from Nautilus Avenue and Building B from Midway Street.

Road Closures

No road closures would be proposed as part of the proposed project.

Project Actions

The proposed project would require the following planning approvals from the City of Sacramento:

- Planning Entitlement Application
- Site Plan and Design Review

The proposed project would also require the following actions by entities other than the City of Sacramento:

- Granting of authorization by Letter of Permission (LOP) by the U.S. Army Corps of Engineers (USACE) under the Minor Impact LOP procedures for compliance with the Clean Water Act;
- Section 7 Consultation with the U.S. Fish and Wildlife Service for Impacts to Federally Listed Species Initiated by the USACE
- Granting of a Section 401 Water Quality Certification by the Central Valley Regional Water Quality Control Board (CVRWQCB);
- Execution of a Fish and Game Code section 1602 Lake and Streambed Alteration Agreement with the California Department of Fish and Wildlife (CDFW).

Discussion

In the case of a project proposal requiring discretionary approval by the City concerning changes to a project for which the City has previously certified an EIR for the overall project, as here, the City must determine whether, in light of the proposed changes to the project, the environmental analysis in the original EIR remains relevant because it retains some informational value and, if so, whether a subsequent EIR or MND is required, which would be the case if substantial evidence supports a fair argument that the changes to the project may result in a significant environmental impact that was not previously considered when the project was originally approved. The proposed changes to the prior project will remain within the same original parcel configuration and will retain many of the original features, rendering the previously certified EIR highly relevant to the environmental analysis of the changes to the project now proposed.

As described in State CEQA Guidelines Section 15164, a lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions identified in State CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred. The following identifies the standards set forth in State CEQA Guidelines Section 15162, for which the preparation of a subsequent EIR would be required:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
    a. The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project but the project proponents decline to adopt the mitigation measure or alternative; or

d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Differences in the potential impacts associated with the proposed project relative to those previously described in the Sacramento Army Depot Redevelopment Plan EIR (Redevelopment EIR), are discussed below.

IV. Land Use, Population, Employment, Housing

Project Site

At the time of the preparation of the Redevelopment EIR, the project site was vacant. Since certification of the of the Redevelopment EIR, the project site and surrounding uses have remained similar to those analyzed in the EIR. The project site remains vacant and is covered with seasonal grasses that are regularly disced as part of ongoing site maintenance. Surrounding uses include industrial and commercial uses to the north, a solar field and parking lot to the south, an undeveloped area to the west, and industrial development and undeveloped land to the east, including the existing Valley Oak Logistics Facility.

Land Use and Zoning Designations

At the time of the preparation of the Redevelopment EIR, the General Plan designation for the project site was Industrial. In 2015, the City adopted the Sacramento 2035 General Plan and certified the Sacramento 2035 General Plan Master EIR. The Sacramento 2035 General Plan is the existing General Plan for the City. The 2035 General Plan maintained the Industrial land use designation for the project site, and the 2035 General Plan Master EIR evaluated the physical effects associated with development of the project site under the Industrial land use designation.

As previously described, the project site is zoned M-2-SPD (Heavy Industrial – Special Planning District), and is within the Sacramento Army Depot Special Planning District.

Land Use Evaluation

The proposed project would develop two warehouse buildings that would conform to the General Plan land use designation and zoning designation requirements for industrial uses. The proposed project is within the contemplated industrial uses that were assumed would be developed on the project site in the Redevelopment EIR and in subsequent land use plans and CEQA documents. The proposed warehouse industrial buildings would be consistent with the allowable land uses and development intensities identified the General Plan land use designations and zoning for the project site.

The proposed industrial project would be compatible with surrounding industrial land uses. Consequently, as with the project analyzed in the Redevelopment EIR, the proposed project would not introduce uses that would be incompatible with or disruptive to surrounding land uses.

The project site is located within an area historically subject to industrial uses and is partially developed for industrial uses under existing conditions. The are no agricultural uses within or near the project site that would be impacted by development of the proposed project. As with the project analyzed in the Redevelopment EIR, the proposed project would not result in impacts to farmland or important agricultural resources.

The proposed project would not have more significant land use effects that were not discussed in the Redevelopment EIR or increase the severity of land use impacts discussed therein. Under existing conditions, the proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on Land Use. For these reasons, impacts to land use from the proposed project would not require the preparation of a subsequent EIR.

Population, Employment, and Housing

The Redevelopment EIR did not include a discussion of impacts related population, employment, and housing. However, the proposed Redevelopment Plan and implementation of the Reuse Plan would not result in an increase in residential development within the Plan area, or an increase in residential population. The assumed development on the project site, as assumed in the Redevelopment EIR would not result in the elimination or creation of new residential units. For this reason, development on the project site, as anticipated in the Redevelopment EIR would not result in impacts related to population or housing.

Development on the project site was assumed to be industrial. Estimated employment generated from the implementation of the Redevelopment Plan was anticipated to be consistent with employment generation for industrial uses. The Draft Redevelopment EIR anticipated that employment growth would occur through the reuse of existing facilities at the Depot Park site, as well as the development of vacant land designated for industrial uses. The Redevelopment EIR identified no potentially significant impacts relating to population, employment, or housing.

Similar to the assumed industrial uses described in the Redevelopment EIR, the proposed project involves warehouse and truck trailer uses in an area that is primarily industrial uses and undeveloped land. The proposed project would be consistent with the allowable land uses and development intensities identified the General Plan land use designations and zoning for the project site.

The proposed project does not propose new housing and would not alter the anticipated effects on population and housing associated with the project described and evaluated in the Redevelopment EIR. Employment generated by the proposed project would be within the assumed employment generation evaluated for the project site in the Redevelopment EIR. The proposed project would not result in new significant impacts or substantially more severe impacts related to population, employment, and housing that were not evaluated in the Redevelopment EIR. For these reasons, impacts to population, employment, and housing from the proposed project would not require the preparation of a subsequent EIR.

V. Aesthetics

The Redevelopment EIR did not include a discussion of impacts related to aesthetics or visual resources. Since certification of the of the Redevelopment EIR, the project site and surrounding uses have remained similar to those analyzed in the EIR. The project site remains vacant and is covered with seasonal grasses that are regularly disced as part of ongoing site maintenance. Surrounding uses remain the same around the majority of the project site, aside from the recent development of the Valley Oak Logistics Center directly east, which is consistent with industrial uses in the project area. Undeveloped land to the south of the project site has been developed for solar use. The existing Valley Oak Logistics Center generates employment uses in the vicinity of the project site.

The proposed project would develop two warehouse buildings totaling 373,708 square feet. As described in the project description, proposed outdoor lighting fixtures would include downward-shielding for overhead lighting fixtures and low-intensity exterior lighting to minimize spillover light.

As with the project analyzed in the Redevelopment EIR, the proposed project would develop an industrial use in an area designated in the Sacramento General Plan for industrial uses. As with the project analyzed in the Redevelopment EIR, the proposed project would be subject to City site plan and design review to ensure that the proposed project complies with applicable design guidelines and is compatible with surrounding uses.

Pursuant to Chapter 17.808 of the City Code, with specific and limited exemptions, development in the City is subject to Site Plan and Design Review.[4] The intent of this process is to (1) ensure that the development is consistent with applicable plans and design guidelines; (2) is high quality and compatible with surrounding development; (3) is supported by adequate circulation, utility, and related infrastructure; (4) is water and energy efficient; and (5) avoids environmental effects to the extent feasible. The aspects

4 Pursuant to Chapter 17.808.160 of the City Code, the following development projects are exempt from the site plan and design review requirement: alterations to an existing building or structure that is not in a historic district and that does not substantially alter the exterior appearance of the building or structure, as determined by the director; an alteration to an existing site that does not significantly alter the functioning of the site with respect to traffic circulation, parking, infrastructure, and environmentally sensitive features, as determined by the director; secondary dwelling units; sidewalk cafes; convenience recycling facilities; and registered house plans (subject to site plan review, but not design review). For development projects located in a historic district or that involve a landmark, activities exempt from site plan and design review include repainting of surfaces that were originally painted when the color scheme is not a significant character-defining feature of the historic resource; routine nonabrasive cleaning and maintenance; and site plantings when plantings and landscape elements are not significant character-defining features of the historic resource.

of design considered in the site plan and design review process include architectural design, site design, adequacy of streets and access ways for all modes of travel, energy consumption, protection of environmentally sensitive features, safety, noise, and other relevant considerations.

As with the project analyzed in the Redevelopment EIR, compliance with the City's Site Plan and Design Review process would ensure that the proposed project is consistent with applicable plans and design guidelines, is of high quality, and is compatible with surrounding development, thus avoiding adverse impacts to visual character within the context of an urban setting.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to aesthetics, light, and glare and no mitigation is required. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on aesthetics, light, and glare. For these reasons, project effects related to aesthetics, light, and glare would not require the preparation of a subsequent EIR.

VI. Air Quality

The Air Quality chapter of the Redevelopment EIR concluded that the short-term air quality impacts associated with construction dust would be less than significant with implementation of standard dust abatement measures required by the City; and hydrocarbon (HC) emissions from the Redevelopment Plan would be less than significant with project compliance with SMAQMD Rules and Regulations. In addition, the Redevelopment EIR concluded that exposure of sensitive receptors to toxic air contaminants (TACs) and odorous emissions generated from business operations under the Redevelopment Plan would be regulated by the Sacramento Metropolitan Air Quality Management District (SMAQMD) permitting process and the provisions of AB 2588, and would result in a less-than-significant impact. The air quality analysis determined that long-term traffic volumes would be within those planned for the region; however, ozone precursor (HC and nitrogen oxides [NO_X]) emissions from operational mobile and stationary sources under the Redevelopment Plan would contribute to regional ozone concentrations and would hinder efforts to achieve NAAQS and CAAQS attainment status for ozone. With regard to cumulative impacts, the Redevelopment EIR concluded that implementation of the Redevelopment Plan would generate development consistent with applicable planning documents; however, project emissions would delay attainment of federal and state air quality standards and CO (carbon monoxide) concentrations could cause localized ambient CO violations. Though the Redevelopment Plan would generate potential air quality impacts with regard to long term mobile and stationary source emissions, as well as cumulative impacts, the Redevelopment EIR states that these impacts would be within the scope of the Findings of Fact and Statement of Overriding

Considerations adopted by the City council for the 1988 Sacramento General Plan Environmental Impact Report (SGP EIR) and the Sacramento Army Depot Reuse Plan Environmental Impact Report (SAD EIR).

Since publication of the Redevelopment EIR, the SMAQMD has revised their recommended air quality model and thresholds of significance. The recommended model is the newest version of the California Emissions Estimator Model (CalEEMod). At the time of publication of the Redevelopment EIR, the SMAQMD used emissions significance thresholds of 85 pounds per day (ppd) of reactive organic gases (ROG), 85 ppd of NO_x, and 275 ppd of particulate matter less than 10 microns in diameter (PM_{10}). The current SMAQMD thresholds of significance limit operational ROG emissions and NO_X emissions to 65 ppd. There is no threshold for construction ROG emissions; and the threshold for construction NO_X emissions remains the same at 85 ppd. In addition, air quality construction and operational-significance thresholds now include PM_{10} and $PM_{2.5}$, and according to the SMAQMD CEQA guidance, project-related construction and operational emissions that exceed zero pounds per day of PM_{10} and $PM_{2.5}$ would result in a significant impact, unless all feasible Basic Construction Emission Control Practices (Best Management Practices [BMPs]) are implemented. After implementation of all feasible SMAQMD BMPs, the SMAQMD's significance threshold for PM_{10} and $PM_{2.5}$ increases to 80 pounds per day (14.6 tons per year) of PM_{10} and 82 pounds per day (15 tons per year) of $PM_{2.5.}$ Since the proposed project would implement all feasible SMAQMD BMPs during construction and operation, SMAQMD's 80-pounds-per-day (14.6 tons per year) of PM_{10} and 82-pounds-per-day (15 tons per year) of $PM_{2.5}$ significance thresholds would apply. Table 1 presents the current SMAQMD thresholds.

TABLE 1
SMAQMD CRITERIA AIR POLLUTANT THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction Phase	Operational Phase
Oxides of nitrogen (NO_X)	85 lb/day	65 lb/day
ROG (VOC)	None	65 lb/day
PM_{10}	0 *	0 *
$PM_{2.5}$	0 *	0 *

NOTE:
* If all feasible Best Achievable Control Technology/Best Management Practices are applied, then the threshold of significance is 80 lbs/day and 14.6 tons/year for PM_{10}, and 82 lbs/day and 15 tons/year for $PM_{2.5}$ for both construction and operational phases. Consequently, these thresholds are used to evaluate operational emissions.

SOURCE: SMAQMD, 2020.[5]

Additionally, as part of the revised SMAQMD CEQA guidance, other pollutants such as CO, sulfur dioxide (SO_2) and lead are of less concern for the region because operational activities are not likely to generate substantial quantities of these criteria air pollutants and the Sacramento Valley Air basin has been in attainment for these criteria air pollutants

5 SMAQMD, 2020. Guide to Air Quality Assessment in Sacramento County. April 2020. Available at: http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools.

for multiple years.[6] Consequently, quantification of CO concentrations near roadways is no longer part of their analysis expectations.

In 2015, the City of Sacramento adopted the 2035 City General Plan. The following goals and policies from the 2035 General Plan are relevant to air quality.

Goal ER 6.1: Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that affect climate change.

Policy ER 6.1.1: Maintain Ambient Air Quality Standards. The City shall work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet State and Federal ambient air quality standards in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.

Policy ER 6.1.2: New Development. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides and particulate matter (PM_{10} and $PM_{2.5}$) through project design.

Policy ER 6.1.3: Emissions Reduction. The City shall require development projects that exceed SMAQMD ROG and NO_X operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

Policy ER 6.1.4: Sensitive Uses. The City shall coordinate with SMAQMD in evaluating exposure of sensitive receptors to toxic air contaminants, and will impose appropriate conditions on projects to protect public health and safety.

Policy ER 6.1.10: Coordination with SMAQMD. The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures if not already provided for through project design.

Short-Term Emissions

As the specifications of individual development projects had not yet been determined at the time of the certification of the Redevelopment EIR, construction dust emissions were not quantified. Additionally, short-term exhaust emissions from on-site vehicular traffic

6 SMAQMD, 2019. Guide to Air Quality Assessment in Sacramento County - Chapter 4 Operational. July 2019. Available at: http://www.airquality.org/LandUseTransportation/Documents/Ch4OperationalFinal7-2019.pdf

and short-term hydrocarbon emissions from asphalt or oil-based architectural coatings used during construction were evaluated qualitatively.

To evaluate the potential increase or decrease in criteria pollutant emissions as a result of the proposed project, construction emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ were modeled using CalEEMod 2020.4.0. The model assumed the proposed project would be constructed over the course of approximately 15 months, with construction beginning on or around February 2023. The site was not assumed to require import or export of fill material. CalEEMod defaults for construction phasing and construction-worker trip generation rates were used. The results of the modeling are shown in **Table 2**. Modeling assumptions and results can be found in **Attachment 1**.

TABLE 2
ESTIMATED UNMITIGATED CONSTRUCTION EMISSIONS

	NO_X, ppd	ROG, ppd	PM_{10}, ppd	PM_{10}, tpy	$PM_{2.5}$, ppd	$PM_{2.5}$, tpy
2023 Emissions	27.56	2.72	20.01	0.60	11.19	0.32
2024 Emissions	16.47	173.61	2.34	0.06	1.06	0.03
Maximum for Proposed Project	27.56	173.61	20.01	0.60	11.19	0.32
SMAQMD Significance Thresholds	85	NA	0	0	0	0
Proposed Project Exceeds SMAQMD Significance thresholds?	No	NA	Yes	Yes	Yes	Yes

NOTES:
ppd = Pounds per day
tpy = Tons per year
NA = not applicable
1. Construction emissions for summer and annual emissions were made using CalEEMod 2020.4.0. See Attachment 1 for details. Unmitigated emissions do not include any mitigation measures identified in the Redevelopment Plan EIR.
2. SMAQMD has established a zero emissions threshold for PM_{10} and $PM_{2.5}$ when projects do not implement their Best Available Control Technologies/Best Management Practices (BACT/BMPs). If all feasible BACT/BMPs are applied, then significance threshold for PM10 is increased to 80 pounds per day/14.6 tons per year and $PM_{2.5}$ is increased to 82 pounds per day/15 tons per year.

SOURCE: ESA, 2022.

As shown in Table 2, construction of the proposed project would not generate daily NO_X emissions that would exceed the SMAQMD thresholds of significance; $PM_{2.5}$ and PM_{10} would exceed the daily threshold as well as the annual. The proposed project would be subject to the regulations discussed in the Redevelopment EIR to control fugitive dust emissions including measures described Sacramento City Code regulations such as watering all construction sites, covering stockpiles and haul trucks, sweeping dirt from paved surfaces, and suspending earthmoving activities on very windy days. Additionally, the project would be required to implement all feasible SMAQMD BMPs to control fugitive dust and exhaust emissions from diesel powered fleets during construction of the proposed project.

SMAQMD considers the following Basic Construction Emissions Control Practices feasible for controlling fugitive dust from a construction site:

a) Control of fugitive dust is required by District Rule 403 and enforced by District staff.

b) Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

c) Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

d) Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

e) Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).

f) All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following are SMAQMD Exhaust Control Practices from diesel powered fleets working at construction sites:

a) Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 2 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

b) Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1].

c) Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

The measures described above capture SMAQMD's Basic Construction Emissions Control Practices. **Table 3** shows construction emissions with implementation of feasible measures to control fugitive dust. As shown in Table 3, with implementation of all feasible measures to control fugitive dust emissions as well as exhaust emissions from heavy-duty construction equipment, construction-related emissions would be reduced to a less than significant level for PM_{10} and $PM_{2.5}$ pollutants. For daily NO_X emissions from the construction of the proposed project, the impact would still not exceed the SMAQMD thresholds of significance.

The construction of the proposed project could expose nearby sensitive receptors to TACs during construction. According to the Office of Environmental Health Hazard

Assessment (OEHHA), health risk assessments should be based on a 30-year exposure period. However, such assessments should be limited to the period/duration of activities associated with the project. Thus, the 15-month duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. Due to this relatively short period of exposure, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

SMAQMD provides a list of Enhanced On-site Exhaust Controls in Chapter 3 of its Guide to Air Quality Assessment in Sacramento County (CEQA Guide), the implementation of which could reduce construction NO_X emissions from the proposed project by 10 percent.[7] Mitigation Measure AIR-1, below, would implement the SMAQMD Enhanced On-Site Exhaust Controls. With implementation of Mitigation Measure AIR-1, construction emissions from the proposed project would be reduced to less-than-significant levels.

TABLE 3
ESTIMATED MITIGATED CONSTRUCTION EMISSIONS

	NO_X, ppd	ROG, ppd	PM_{10}, ppd	PM_{10}, tpy	$PM_{2.5}$, ppd	$PM_{2.5}$, tpy
2023 Emissions	27.56	2.72	9.78	0.41	5.70	0.21
2024 Emissions	16.47	173.61	2.34	0.06	1.06	0.03
Maximum for Proposed Project	27.56	173.61	9.78	0.41	5.70	0.21
SMAQMD Significance Thresholds	85	NA	80	14.6	82	15
Proposed Project Exceeds SMAQMD Significance thresholds?	No	N/A	No	No	No	No

NOTES:
ppd = Pounds per day
tpy = Tons per year
NA = not applicable

1. Construction emissions for winter and annual emissions were made using CalEEMod 2020.4.0. See Attachment 1 for details. Mitigated emissions presented assume exposed areas would be watered and vehicle speed on unpaved roads would be reduced to control fugitive dust.
2. SMAQMD has established a zero emissions threshold for PM_{10} and $PM_{2.5}$ when projects do not implement their Best Available Control Technologies/Best Management Practices (BACT/BMPs). If all feasible BACT/BMPs are applied, then significance threshold for PM_{10} is increased to 80 pounds per day/14.6 tons per year and $PM_{2.5}$ is increased to 82 pounds per day/15 tons per year.

SOURCE: ESA, 2022.

Mitigation Measure AIR-1: Implement SMAQMD Enhanced On-site Exhaust Controls

The project applicant, or its designee, shall provide a plan for approval by the Sacramento Metropolitan Air Quality Management District (SMAQMD) that demonstrates the heavy-duty off-road vehicles (50 horsepower or more) to be used eight hours or more during the construction project will achieve a project-wide fleet-average 10-percent NO_X reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions may include use of cleaner engines, low-emissions diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The plan shall have two

7 Sacramento Metropolitan Air Quality Management District (SMAQMD), 2020.

components: an initial report submitted before construction and a final report submitted at the completion.

- Submit the initial report at least four business days prior to construction activity using the SMAQMD's Construction Mitigation Tool, available at http://www.airquality.org/businessses/ceqa-land-use-planning/mitigation.
  - Provide project information and construction company information;
  - Include the equipment type, horsepower rating, engine model year, projected hours of use, and the CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased, and subcontracted equipment to be used;
  - Submit the final report at the end of the job, phase, or calendar year, as pre-arranged with SMAQMD staff and documented in the approval letter, to demonstrate continued project compliance.
- The SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other SMAQMD, state, or federal rules or regulations.

Long-Term Emissions

As discussed in the Redevelopment EIR, implementation of the Redevelopment Plan would increase population and employment within the region, which would generate emissions from vehicle trips. The Redevelopment Plan would also include stationary sources of emissions. Operational emissions of criteria air pollutants, TACs, and odorous substances were evaluated qualitatively by the Redevelopment EIR.

To evaluate the significance of operational air quality impacts that may result from the proposed project, operational emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ were modeled using CalEEMod 2020.4.0. Mobile source emissions were calculated using trip generation rates for the proposed project, estimated based on information provided by the Institute of Transportation Engineers 2017 Trip Generation Manual. Total weekday trips for the proposed project warehouse operations were forecast to be 1,821 daily trips, with 277 AM peak hour trips and 243 PM peak hour trips. For office operations, trips and trip lengths were provided in a traffic report prepared by DKS Associates for the City of Sacramento. CalEEMod defaults for energy use and water use were used to calculate emissions. Estimated operational emissions for the proposed project are summarized in **Table 4**. Modeling assumptions and results can be found in Attachment 1.

As shown in Table 4, operations of the proposed project would not generate emissions that would exceed the SMAQMD thresholds of significance for any of the emissions. In order to reduce operational emissions, the proposed project would be subject to the same regulations and mitigation measures as those discussed in the Redevelopment Plan EIR including Transportation Systems Management (TSM) programs and Transportation Control Measures (TCM) enforced by the City for development within the Redevelopment

TABLE 4
ESTIMATED OPERATIONAL EMISSIONS

	NO_X, ppd	ROG, ppd	PM_{10}, ppd	PM_{10}, tpy	$PM_{2.5}$, ppd	$PM_{2.5}$, tpy
Area	<0.01	8.96	<0.01	<0.01	<0.01	<0.01
Energy	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
Mobile	7.89	6.84	11.33	1.98	3.09	0.54
Total Operational Emissions	7.94	15.80	11.34	1.98	3.09	0.54
SMAQMD Significance Thresholds	65	65	80	14.6	82	15
Proposed Project Exceeds SMAQMD Significance thresholds?	No	No	No	No	No	No

NOTES:
ppd = Pounds per day
tpy = Tons per year
1. Operational emissions for winter and annual emissions were made using CalEEMod 2020.4.0. See Attachment 1 for details.

SOURCE: ESA, 2022.

Plan area, as well as installation of traffic signals, bus shelters, and construction improvements to roadways. Furthermore, growth induced by the proposed project and subsequent air pollutant emissions were accounted for in the City of Sacramento 2035 General Plan (General Plan). The 2035 Draft Master Environmental Impact Report for the Sacramento 2035 General Plan Update (Master EIR) evaluated air quality impacts that would result from the implementation of the General Plan and determined that the General Plan would result in significant air quality impacts with regard to operational emissions of ozone precursors and PM; however, the Sacramento City Council published a Findings of Fact and Statement of Overriding Considerations and ultimately adopted the Master EIR. Operational emissions of ozone precursors and PM associated with the proposed project are within the scope of these findings.

The Redevelopment EIR modeled CO concentrations using the CALINE 4 model and determined that implementation of the Redevelopment Plan may result in localized ambient CO concentrations that would violate the ambient air quality standards at certain locations. Because of these criteria air pollutants and the Sacramento Valley Air basin has been in attainment for these criteria air pollutants for multiple years, the operational activities are not likely to generate quantities substantial enough to have impacts on CO attainment status. Therefore, the proposed project would not contribute to an exceedance of the CO ambient air quality standards and impacts would not be greater than those previously analyzed in the Redevelopment EIR.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to air quality that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on air quality. Since preparation of the Redevelopment EIR, the SMAQMD has developed construction emissions control practices, which, as condition of project approval, would be implemented during construction of the proposed project. For these reasons, project effects related to air quality emissions would not require the preparation of a subsequent EIR.

VII. Biological Resources

The project site is currently a vacant and undeveloped plot of land. The entire site is generally level ground; elevation ranges from approximately 32 to 41 feet. The site has undergone a high level of disturbance since at least the 1930s. Land use surrounding the study area is characterized by a patchwork of industrial, commercial, and undeveloped areas. The recently built, 477,020-square-foot Valley Oak Logistics Center is located immediately east of the project site. There are paved roads around the eastern, southern, and northern margins of the project site. The majority of the site is comprised of non-native annual grassland. Dominant vegetation includes rattail sixweeks grass (*Festuca myuros*) and filaree (*Erodium botrys*). Individual California black walnuts (*Juglans hindsii*) occur within the non-native annual grassland near the center of the project site.

Developed areas include remnant concrete pads that once supported small structures or equipment, a gazebo with benches, and a landscaped area with a lawn in the northeast corner of the site. Ornamental landscape trees occur within the urban/developed areas along Midway Street.

Vernal pools, swales, and seasonal wetlands occur within the project site. Dominant vegetation includes water starwort (*Callitriche* sp.), bractless hedge-hyssop (*Gratiola ebracteata*), toad rush (*Juncus bufonius*), spikerush (*Eleocharis macrostachya*), and annual hair grass (*Deschampsia danthonioides*). Woody vegetation comprised of Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and willow (*Salix* sp.) also occurs within the seasonal wetlands.

The Redevelopment EIR identified that there were potential wetlands within the project area, and that development could result in fill or alteration of these wetlands. An aquatic resources delimitation was conducted over several visits by ESA between February 12 and April 8, 2021 which identified multiple aquatic resources within the project site, including ditch, wetland swale, seasonal wetland, and vernal pool features.[8] As identified within the Redevelopment EIR, if the project were to result in impacts to wetlands and other waters subject to jurisdiction under Section 404 of the Clean Water Act, the project would be subject to compensatory mitigation requirements set forth by the USACE. Additionally, the EIR stated that a Streambed Alteration Agreement (SAA) may be requested by California Department of Fish and Game (since renamed the California

8 Environmental Science Associates. 2021a. Depot Park Logistics Facility Aquatic Resources Delineation Report. Prepared for BRE Depot Park LLC. February 2020.

Department of Fish and Wildlife [CDFW]) if there are impacts to wetlands along Morison Creek. The project's construction-related activities are expected to result in permanent fill of 0.582 acres, or 1,546 linear feet of potential waters of the United States; the impacted features are comprised of fifteen vernal pools, four wetland swales, and two seasonal wetlands. The applicant will be acquiring a Section 404 permit from the USACE, an SAA from CDFW, and a Clean Water Act 401 water quality certification from Central Valley Regional Water Quality Control Board to address the permanent impacts to aquatic resources resulting from construction.

As identified within the Redevelopment EIR, there are four special-status plant species with the potential to occur within the project area; these include dwarf downingia (*Downingia pusilla*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*); slender Orcutt grass (*Orcuttia tenuis*), and Sanford's arrowhead (Sagittaria sanfordii). Additionally, the EIR identified 11 special-status wildlife species with potential to be present within the project area, including vernal pool fairy shrimp (*Branchinecta lynchi*, VPFS), vernal pool tadpole shrimp (*Lepidurus packardi*, VPTS), California linderiella (*Linderiella occidentalis*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Spea hammondii*), northwest pond turtle (*Actinemys marmorata*), giant garter snakes (*Thamnophis gigas*), tricolored blackbird (*Agelaius tricolor*), burrowing owl (*Athene cunicularia*), and Swainson's hawk (*Buteo swainsoni*).

A biological resources constraints analysis (see **Attachment 3**) was conducted in 2021 by ESA which involved reviewing lists obtained by the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation, the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB), and the California Native Plant Society's (CNPS) Rare Plant Inventory for the Sacramento East quad and eight adjacent quads.[9,10,11] The project site was surveyed on October 29, 2020 for biological resources. The biological resources survey helped determine existing conditions with the project site. None of the 13 special-status species identified in the Redevelopment EIR were observed within the project site.[12] Based on this survey it was determined that the project area was not suitable for most of the species considered in the EIR, with the

9 U.S. Fish and Wildlife Service (USFWS), 2022. Information for Planning and Consultation: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by proposed project (Consultation Code: 08ESMF00-2020-SLI-1595; Event Code: 08ESMF00-2020-E-04981). Sacramento Fish and Wildlife Office, Sacramento, CA, May 24, 2022.

10 California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB). Accessed February, 2021. Available: https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

11 California Native Plant Society (CNPS). 2021. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). California Native Plant Society. Sacramento, CA. Accessed February 2021. Available: http://rareplants.cnps.org/index.html.

12 Environmental Science Associates. 2021. Biological Resources Letter Report for Valley Oak Logistics Center Accessory Parking. Prepared for BRE Depot Park LLC. August 2021.

notable exception of special-status plants, pond turtle, vernal pool fairy shrimp, vernal pool tadpole shrimp, and burrowing owl.[13]

Although special-status pond turtle could occur in Morrison Creek, this species is unlikely to occur outside of the Morrison Creek corridor due to the lack of cover, steep slopes near Morrison Creek, and other barriers to movement including fencing and roads.[14] Given that the project would avoid the Morrison Creek corridor by design, no impacts to western pond turtle are anticipated.

Some of the wetlands on the project site provide potential habitat for VPFS and VPTS listed under the Endangered Species Act. A total of 0.58 acre of habitat will be directly lost as a result of grading by the proposed action. Another 0.18 acre of habitat will be indirectly affected because portions of filled features extend outside of the grading footprint. Partial fill of the features may affect hydrology of the remaining habitat. A total of 0.76 acre of habitat will be affected. As identified in the Redevelopment EIR, special-status vernal pool shrimp have been identified within the project site and loss of this habitat from development could lead to impacts to these species. The Redevelopment EIR concluded that completion of USFWS consultation on a project-by-project basis would further ensure protection of VPTS and VPFS and reduce impacts to a less than significant level. As part of Section 7 Consultation for Section 404 Clean Water Act permitting, the proposed project would seek coverage under the “Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California” dated February 28, 1996, with subsequent minor updates (Programmatic BO).[15] The proposed project would address direct impacts to these seasonal wetland features via acquisition of off-site third-party mitigation credits at a USFWS/USACE approved bank at a ratio of 1:1 for vernal pool creation credits and a 2:1 preservation ratio. This mitigation amount would amount to 0.76 acres of vernal pool creation credits and 1.52 acres of vernal pool preservation credits.

The Redevelopment EIR determined that the site provides suitable habitat for burrowing owls because this species was observed within the site. During the 2020 and 2021 field visits, a single burrowing owl was observed at a particular burrow on several occasions.[16] However, the burrow appeared to be satellite burrow (not a nesting burrow) due to the relatively small amount of feathers and whitewash present, and the fact that a second owl was never observed, either prior to or during the nesting season. The proposed project would still be required to implement the avoidance, minimization, and conservation

13 Environmental Science Associates. 2021. Biological Resources Letter Report for Valley Oak Logistics Center Accessory Parking. Prepared for BRE Depot Park LLC. August 2021.

14 Environmental Science Associates. 2021. Biological Resources Letter Report for Valley Oak Logistics Center Accessory Parking. Prepared for BRE Depot Park LLC. August 2021.

15 U.S. Fish and Wildlife Service (USFWS), 1996a. Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California.

16 Environmental Science Associates. 2021. Biological Resources Letter Report for Valley Oak Logistics Center Accessory Parking. Prepared for BRE Depot Park LLC. August 2021.

measures to reduce take of burrowing owl, in accordance with the Redevelopment EIR Mitigation Measure 4.6-2. As identified within the EIR, if the City of Sacramento determines that the construction of the proposed development project may affect a known or existing burrow owl nest, CDFW and/or USFWS shall be consulted to conduct a burrowing owl survey. If burrowing owls or burrowing owl habitat are identified which may be disturbed by construction activities, then a mitigation plan will be prepared to reduce this impact to a level of insignificance. The mitigation plan may include measures such as: adequate buffer zones and demonstrate of financial means to ensure protection and management of on-site preserve lands into perpetuity and preservation of the species at off-site location if on-site preservation is infeasible. The proposed project would comply with these measures.

A botanical survey was conducted on April 8, 2021 to determine if any special-status plants or sensitive habitats have the potential to occur in the project site. During preparation for the survey, 16 different plant species were initially considered to have a potential to occur within the project site based on agency database searches, including the four plant species analyzed in the Redevelopment EIR.[17] The field survey followed the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife botanical survey guidelines.[18,19] The fieldwork was conducted during the evident and identifiable period of special-status plants with the potential to occur in the study area. No special-status plants were found in the project site.[20] Additionally, there were no sensitive natural communities – other than Morrison Creek, the seasonal wetlands, and ephemeral ditches identified during the aquatic resources delineation.

The Redevelopment EIR determined that development could result in removal of City protected trees and that adherence to the City Code would result in less than significant impacts to these resources. Based on the current design, the project could result in the removal of “private protected trees”. A total of 22 trees occur within the project site, six of which meet the definition of “private protected trees”. It is estimated that the cumulative total inches a diameter at standard height of such private protected trees is 195 inches.[21] Most of these trees are located along the ditch along the southern portion of the project site, or along the Midway Street and Park Avenue roadsides and have the potential to be avoided. If these trees are to be removed, replacement may occur via a tree replacement plan or by paying into the City of Sacramento’s in-lieu fee program, pursuant to

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17 Environmental Science Associates. 2021. Botanical Survey for Depot Park Midway Street, City of Sacramento, CA. Prepared for Buzz Oates. May 2021.

18 U.S. Fish and Wildlife Service (USFWS). 1996b. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. Sacramento Fish and Wildlife Office, Sacramento, CA.

19 California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. March 20, 2018.

20 Environmental Science Associates. 2021. Botanical Survey for Depot Park Midway Street, City of Sacramento, CA. Prepared for Buzz Oates. May 2021.

21 Environmental Science Associates. 2021. Updated Tree Inventory for the Valley Oak Logistics Center Accessory Parking Project. Prepared for BRE Depot Park LLC. July 2021.

compliance with the City's tree ordinance. These actions would reduce project impacts related to tree removal, resulting in a less-than-significant impact.

Conclusion

No new or significant resources not previously identified were documented within the 2019 and 2020 field surveys for biological resources within the project site. The proposed project would not result in new significant impacts or substantially more severe impacts related to biological resources that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on biological resources. For these reasons, project effects related to biological resources would not require the preparation of a subsequent EIR.

VIII. Cultural Resources

ESA cultural resources staff completed a records search for the project site and surrounding ½-mile area at the North Central Information Center (NCIC) of the California Historical Resources Information System at Sacramento State University on November 30, 2020 (File No. SAC-20-163). The purpose of the records search was to (1) determine whether known cultural resources have been recorded within the vicinity of the proposed project; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby resources; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

Records at the NCIC indicate that 7 cultural resources investigations have been completed, that included portions of the project site. Eleven other previous studies have included areas within a half-mile radius of the project site. The project site was subject to an intensive pedestrian survey in 1979; no archaeological materials or other evidence of human use or occupation were identified during that survey effort. No prehistoric or historic-period archaeological resources have been previously recorded within the project site or within a half-mile radius of the project site. The nearest known prehistoric archaeological sites are more than 3 miles to the north of the project site, nearer to the American River.

Architectural Resources

The Sacramento Army Depot Disposal & Reuse Final EIS (October 1994), which evaluated the environmental impacts of transferring the Sacramento Army Depot from Department of Army to City of Sacramento control, determined that none of the Sacramento Army Depot buildings qualified for listing on the National Register of Historic Places (NRHP). The California State Historic Preservation Officer (SHPO) concurred with this assessment.

Archaeological Resources and Human Remains

The Redevelopment EIR determined that although the likelihood of encountering cultural materials during construction in the Plan Area is low, redevelopment activities and development resulting from implementation of the Plan could encounter cultural materials during construction. The EIR noted that cultural resources are addressed through the City's environmental review and permit process, including a site-specific study in areas of prehistoric archaeological sensitivity, which has been completed as part of this addendum. In addition, the City requires that if subsurface prehistoric or historical archaeological materials are discovered during excavation or construction, work in the affected areas shall stop immediately and a qualified archaeologist and a representative of the Native American Heritage Commission (NAHC) shall be consulted to develop, if necessary, further mitigation measures to reduce impacts to a less-than-significant level before construction continues.

On December 10, 2020, an ESA archaeologist conducted an intensive pedestrian survey of the majority of the project site. Additional portions of the project site were surveyed on June 10, 2021 by an ESA archaeologist. During the initial survey in 2020, visibility was quite good, generally 90-100 percent throughout the project site. Soil throughout the project site, where visible, was dry light brown with gravel inclusions. The project site includes a few areas that have been built or paved over. The northwest portion of the project site along Midway Street has been developed into a small park with grass, a gazebo, and picnic tables. In the north-central portion of the project site there is a track with various irregular terrain that was used to test whether communications vehicles or equipment would tip over or not (personal communication with Depot Park staff). There is also an area measuring, 160 feet (north-south) by 130 feet (east-west) southwest of the track, which includes a parking lot and concrete foundations. This track and associated parking lot with concrete foundations was likely constructed by the Seabees, the Navy's construction battalion, as per an inscription in the concrete. There is also a red missile-shaped weathervane west of the park.

During the survey in 2021, which covered the western end of the project site and portions of the southeastern project site, a small ditch approximately 1 foot deep and 2-3 feet wide was observed along the southern perimeter of the project site, around the solar field, and cutting diagonally along the southeast corner. The soil was very dry and densely compacted. Animal burrows and the ditch were inspected for cultural resources and associated deposits, but none were observed. Overall ground visibility was 60 percent limited by asphalt paving and low growing annual grasses. In areas with denser vegetation, boot scrapes were conducted consisting of light scrapes with the boot toe to remove top vegetation and expose ground surface. A lens of ash lay on the ground surface due to controlled burning practices regularly conducted by CalFire. The ash layer did not exhibit any depth and was easily scraped with the boot to expose grayish brown silty loam. In the northwest corner of the project site, river cobbles ranging from 3- to 9-inches in diameter and concrete rubble ranging from 6- to 9-inches were observed on the ground surface. The area within the solar field exhibited sparse fragments of aqua, amber, and green bottle glass and aluminum cans. There was little to no rock observed in this area. Appendix C provides sample photographs of the project site.

Historic aerial research indicates that the small park was constructed sometime between 1993 and 1998 (Google Earth Historical Imagery, 2020). The irregular terrain test track and the building foundations and parking area were constructed between 1981 and 1993 (UCSB Aerial FrameFinder, 2020; Google Earth Historical Imagery, 2020). The missile weathervane was likely installed sometime between 1961 and 1971, although due to its small footprint it is difficult to see in aerial images and it is likely that the weathervane has been replaced or repaired since its original installation.

No cultural resources or other evidence of past human use or occupation, besides the modern features previously discussed, were identified during the survey.

Furthermore, according to Section 7050.5 of the Health and Safety Code, in the event human remains are discovered during excavation, work must stop immediately and the County Coroner must be contacted. Section 5097.94 and 5097.98 of the Public Resources Code require consultation with the NAHC, protection of Native American remains, and notification of the most likely descendant.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to cultural resources that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on cultural resources. For these reasons, project effects related to cultural resources would not require the preparation of a subsequent EIR.

IX. Energy Demand

Energy resources, including gas and electricity services, were analyzed in the Public Services section of the Redevelopment EIR. Electrical service for the Redevelopment Plan area is provided by the Sacramento Municipal Utility District (SMUD), and natural gas service is provided by Pacific Gas & Electric (PG&E). The Redevelopment EIR determined that the implementation of the Redevelopment Plan may require improvements to existing gas and electric facilities. However, the Redevelopment Plan would not require SMUD or PG&E to procure more energy sources beyond their suppliers. SMUD and PG&E expressed willingness to improve infrastructure and serve growth assumed in the City's general plan, including the Redevelopment Plan area. Therefore, the Redevelopment EIR determined that the Redevelopment Plan would not result in a significant impact associated with procurement of energy sources.

Since publication of the Redevelopment EIR, the State Building Energy Efficiency Standards, specified in Title 24, Part 6 of the California Code of Regulations (CCR) have been updated. The standards are updated approximately every three years to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The current standards (2022) become effective on January 1, 2023. In addition to the State Building Energy Efficiency Standards, in 2007, the California Building Standards Commission developed the California Green Building Standards Code (CALGreen), specified in Title 24, Part 11 of the CCR. Since 2011, the CalGreen Code is mandatory for all residential and non-residential buildings constructed in the state and includes mandatory measures for energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The current CALGreen standards (2022) become effective on January 1, 2023. The proposed project would not include energy requirements beyond those that were described and evaluated in the Redevelopment EIR, and would furthermore be subject to the more stringent energy-efficiency standards described above.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to energy resources that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on energy resources. For these reasons, project effects related to energy resources would not require the preparation of a subsequent EIR.

X. Geology, Soils, Seismicity, and Paleontological Resources

Environmental Setting

The proposed project site is located within the Sacramento Valley, and lies central in the Great Valley geomorphic province, a relatively flat, alluvial plain that is approximately 50 miles wide and 400 miles long. It is composed of a deep sequence of sediments in a bedrock trough within the northern third of the Great Valley, which is bounded by the Great Valley Fault Zone and the northern Coast Range and to the east by the northern Sierra Nevada and the Foothills Fault zone. Slopes within the proposed project area increase gradually from elevations as low as sea level in the southwestern portion of the area to approximately 75 feet above sea level in the northeastern portion. Most of the surface of the Great Valley is covered with Holocene and Pleistocene-age alluvium, primarily composed of sediments from the Sierra Nevada and the coast Ranges, which were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits. Older Tertiary Cenozoic deposits underlie the Quaternary alluvium.

Seismic Hazards

Within the City of Sacramento region, there are no known active faults and the area does not commonly experience strong ground shaking resulting from earthquakes. The greatest earthquake threat to the City comes from earthquakes along Northern California’s major faults (i.e., San Andreas, Calaveras, and Hayward Faults). Ground shaking along any of these faults could cause ground shaking within the City, up to a 5 or 6 moment magnitude (Mw). Because of the distance from these major faults to the City, Sacramento’s seismic ground shaking hazards are low, ranking among the lowest in the state. The City is in Seismic Zone 3 and accordingly, any future development, rehabilitation, reuse, or possible change of use of a structure would be required to comply with all design standards applicable to Seismic Zone 3.[22]

The Redevelopment EIR did not include an analysis of seismicity. These issues were evaluated in an initial study and determined to be less than significant for the Redevelopment plan. Seismic ground shaking conditions at the project site would be the same as those in the context that the Redevelopment EIR was prepared, and the City of Sacramento requires implementation of the Uniform Building Code (UBC) requirements that recognize state and federal earthquake protection. The State of California provides minimum standards for building design in Chapter 23 of the California Building Code (CBC) (Title 24 of California Code of Regulations), which is based on the UBC, but is more stringent and detailed than the federal code. Chapter 16 of the CBC further requires that the design of foundation and excavation-wall supports must reduce the exposure to potentially damaging seismic vibrations through seismic-resistant design (Section A33 – Excavation and Grading). Consequently, impacts related to seismic hazards are anticipated to be similar to those identified in the Redevelopment EIR and would not result in any new or substantially more severe impacts not previously evaluated and disclosed.

Liquefaction

As with the discussion of seismicity, the Redevelopment Plan did not include a discussion of the potential for liquefaction. This analysis was conducted in the initial study and determined to result in a less than significant impact. Depot Park is located in an area that, under certain conditions, is susceptible to liquefaction. However, the proposed project site is not located in a currently-designated State of California Seismic Hazard Zone area for liquefaction.[23] Furthermore, development of the proposed project would conform to the regulatory requirements and associated design standards of the CBC. Consequently, impacts related to liquefaction are anticipated to be similar to those identified in the Redevelopment EIR and would not result in any new or substantially more severe impacts to seismic hazards not previously evaluated and disclosed.

22 City of Sacramento, 2015. *Sacramento 2035 General Plan; Chapter 7: Public Health and Safety*. http://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/General-Plan/2035-GP/Chapter-7---Public-Health-and-Safety.pdf?la=en. March 3, 2015.

23 Department of Conservation (DOC), 2019. EQ Zapp: California Earthquake Hazards Zone Application. https://maps.conservation.ca.gov/cgs/EQZApp/app/. July 2022.

Erosion

Soil erosion occurs when soils from exposed bedrock are removed by water or wind and occurs naturally in most systems; however, it can be accelerated due to human activities such as soil disturbance activities. The proposed project would be located in the City of Sacramento within which permeability, available water capacity, runoff, erosion, and shrink-swell potential have been identified as soil characteristics.[24] Because the project site could be located on expansive soils, there is potential for erosion and/or unstable earth conditions to occur resulting from construction activities and development of the project site. However, the Redevelopment EIR did not evaluate the potential effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, existing mineral resources and paleontological resources in the City. These impacts were analyzed in the initial study and determined to be less than significant. Under the City's existing General Plan, Policy EC 1.1.1 requires regular review of the City's seismic and geologic safety standards, and Policy EC 1.1.2 requires geotechnical investigations for project sites to identify and respond to geologic hazards, when present. The proposed project would be required to implement all applicable policies and regulations that would reduce potentially significant impacts to a less-than-significant level. Consequently, impacts related to erosion are anticipated to be similar to those identified in the Redevelopment EIR and would not result in any new or substantially more severe impacts not previously evaluated and disclosed.

Paleontological Resources

The Redevelopment EIR did not include analysis of the potential for paleontological resources to exist within the project site. Paleontological resources are sites or geological deposits that consist of unique and unusual individual fossils or assemblages of fossils, diagnostically or stratigraphically important, and add to the existing body of knowledge in particular areas (e.g., stratigraphically, taxonomically, or regionally). Fossils can be used to determine the geological events and relative ages of depositional layers to better understand the development of the region and area. The age, abundance, and distribution of fossils depend on the topography of the area and geologic formation in which they occur. As discussed above, the City of Sacramento is located in the Great Valley primarily covered with Holocene and Pleistocene-age alluvium, resulting from Quaternary sediments that have been carried by water and deposited on the valley floor. These deposits contain well-preserved vertebrate and plant fossils that are similar to existing flora and fauna. The City of Sacramento is not considered a highly sensitive paleontological unit due to the absence of sedimentary and metasedimentary deposits that have a high potential to contain fossil-bearing soils and rock formations.[25] Furthermore, a majority of the City of Sacramento has been developed and disturbed over time and has little potential for undiscovered underlying paleontological resources.

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24 City of Sacramento, 2015. *Sacramento 2035 General Plan; Chapter 7: Public Health and Safety.* http://www.cityofsacramento.org/-/media/Corporate/Files/CDD/Planning/General-Plan/2035-GP/Chapter-7---Public-Health-and-Safety.pdf?la=en. March 3, 2015.

25 City of Sacramento, 2015. *Sacramento 2035 General Plan Master Environmental Impact Report*; Section 4.5. March 3, 2015.

Conditions on the project site have not substantially changed from site conditions at the time the Redevelopment EIR was certified. The potential for the occurrence of paleontological resources remains the same, as was anticipated to exist in the Redevelopment EIR. Therefore, the proposed project site is not considered a sensitive paleontological unit and this impact would remain less than significant. No new mitigation measures would be required.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to geology, soils, seismicity, and paleontological resources that were not previously addressed and disclosed in the Redevelopment EIR or Initial Study prepared for the Redevelopment Plan. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project on geology, soils, seismicity, and paleontological resources. For these reasons, project effects related to geology, soils, seismicity, and paleontological resources would not require the preparation of a subsequent EIR.

XI. Global Climate Change

A discussion of greenhouse gases (GHGs) was not included in the Redevelopment EIR, however, since the publication of the Redevelopment EIR, the City of Sacramento (City) has incorporated Global Climate Change or GHG Emissions as a required topic for environmental analysis. GHG emissions associated with the proposed project would be generated directly as a by-product of fossil fuel combustion, and indirectly from energy use, water use, and waste.

As discussed in the Redevelopment EIR, energy consumption of new buildings in California is regulated by the Title 24, State Building Energy Efficient Standards, which regulate energy consumption for heating, cooling, ventilation, water heating, and lighting. Since the publication of the Redevelopment EIR, the Title 24 Energy Efficiency Standards have been updated. The latest version of the Title 24, Part 6 Building Energy Efficiency Standards, were published in 2022 and includes changes to improve efficiency associated with envelope assemblies, mechanical equipment, lighting, and photovoltaic and battery installations. In 2012, the City incorporated the Sacramento Climate Action Plan (CAP) policies into the City of Sacramento 2035 General Plan (General Plan). The General Plan describes the City's goal to reduce community GHG emissions by 15 percent below 2005 baseline levels by 2020, 49 percent below 2005 baseline levels by 2035, and 83 percent below 2005 baseline levels by 2050. The General Plan outlines various policies and initiatives to meet these goals; in addition, Appendix B of the General Plan includes additional policies and programs to reduce GHG emissions within the City.

The proposed project would comply with the City's 2035 General Plan. The General Plan designates the project site as Industrial, which is consistent with the planned land use for the proposed project.[26] The 2035 General Plan Master EIR evaluated GHG emissions from planned development within the City based on land use designations and anticipated growth.[27] The proposed project would not change the general plan land use designation for the site, which has remained the same since certification of the Redevelopment EIR. Consequently, the GHG emissions resulting from the proposed project would be consistent with those estimated by the City's General Plan and evaluated in the Master EIR, and would be consistent with anticipated emissions from anticipated buildout of the project site, as analyzed in the Redevelopment EIR. Furthermore, the proposed project would be designed and constructed in compliance with the current California Building Code standards, which are more stringent than the relevant standards and the time of certification of the Redevelopment EIR. Since development under the Sacramento 2035 General Plan, including the development of the project site, has been analyzed in the Master EIR, and GHG emissions have already been evaluated, the proposed project would not conflict with the implementation of the City's CAP policies, and would not result in new or mor severe GHG emissions relative to those anticipated to occur in the Redevelopment EIR.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to global climate change that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project related to global climate change. For these reasons, project effects related to global climate change would not require the preparation of a subsequent EIR.

XII. Hazards and Hazardous Materials

Accidental Release of Hazardous Substances

The Redevelopment EIR noted that the proposed project would include industrial and commercial facilities which could result in increased handling of hazardous materials, but would not be expected to create hazardous conditions demonstrably different from existing conditions. As such, development within the project site would be subject to the following requirements to promote proper handling of hazardous materials.

- In compliance with State law (SB 14), new businesses that handle enough hazardous materials to generate wastes in reportable quantities (12,000 kilograms of hazardous waste per year or 12 kg of extremely hazardous waste per year) are required to have an approved Source Reduction Evaluation and Review Plan on file with the Department of Toxic Substances Control (DTSC). Qualifying new industries

26 City of Sacramento, 2015. *2035 General Plan.* March 3, 2015. Available at http://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan. Accessed July 7, 2022.

shall prepare such plans and file a copy with the Hazardous Materials Division of the DTSC.

- The Hazardous Materials Division implements its Risk Management and Prevention Program in the County by requiring businesses that handle acutely hazardous materials to prepare a written Risk Management and Prevention Program (RMPP) and file it with the County.
- The Hazardous Materials Division issues permits to businesses for handling hazardous materials, and requires businesses to prepare Hazardous Materials Management Plan (HMMPs) that detail hazards inventories, site layouts, training and monitoring procedures, and emergency response plans, all in conformance with State law.
- The Sacramento County Hazardous Waste Management Plan defines the County's hazardous materials emergency response capabilities and provides County-wide guidance for response to an accidental hazardous materials release. The RMPP and HMMP require 8-hour reviews and training sessions for key emergency response personnel to ensure that they are capable of meeting provisions of the Plan within the Project Area.

Based on the potential industrial uses that would be anticipated to occur on the project site as part of the proposed project, hazardous materials would be used, stored, or transported in a manner that could cause a threat to public safety, either during construction or operation of the proposed project. However, in addition to the requirements listed above, the use and transportation of hazardous materials are subject to stringent local, state, and federal regulations, the intent of which is to minimize the public's risk of exposure. Therefore, with implementation of proposed requirements and regulations, the risk that the proposed project would cause an accidental release of hazardous materials that could create a public or environmental health hazard is unlikely, and the impact of construction and operation-related hazardous chemical use would be considered less than significant and no new or previously dismissed mitigation measures would be required. For these reasons, impacts related to hazards from accidental release resulting from implementation of the proposed project would not require the preparation of a subsequent EIR.

Contaminated Soil or Groundwater

The Redevelopment EIR evaluated the potential for exposure to contaminated soil or contaminated groundwater within the Sacramento Army Depot. The Redevelopment EIR identified several sites within the vicinity of the project site as contaminated with petroleum from fuel leaks and solvents, resulting from historic industrial activities in the project area. However, the EIR found that impacts would be reduced to less than significant with implementation of mitigation measures.

Based on a review of the Cortese List conducted on July 6, 2022, there are no active sites on the proposed project site, but there is one active site and 12 closed sites within 0.5

mile of the project site.[28,29] The one open site is Sacramento Army Depot-Groundwater, located at 8350 Fruitridge Road and 0.3 miles south of the project site. Potential contaminant of concern is tetrachloroethylene, which could impact ground water. The potential contaminant of concern at the Sacramento Army Depot is trichloroethylene. Several remedial actions have occurred at the site, including soil vapor extraction and air sparging as well as groundwater extraction. The proposed project would not be anticipated to encounter any known contaminated soil or groundwater, during project construction or operation. This impact would be less than significant with implementation of Redevelopment EIR mitigation measures 4.9-1(a) – (b).

Accordingly, changes introduced by the proposed project and/or new circumstances relevant to the project would not, as compared to the EIR, result in new significant impacts relating to hazardous materials or significant impacts that are substantially more severe than significant impacts previously disclosed. No new mitigation measures would be required. For these reasons, impacts related to hazards from exposure to contaminated soil or groundwater resulting from implementation of the proposed project would not require the preparation of a subsequent EIR.

Emergency Response and Evacuation

As described in the Redevelopment EIR, development of the project site would be located within an area planned for industrial development. Development analyzed in the Redevelopment EIR would not be anticipated to impair the implementation of, or physically interfere with, an emergency response plan or emergency evacuation plan. The proposed project includes industrial development, similar to anticipated development analyzed in the EIR. Development would not require substantial road closures or other elements that may impair the implementation of, or physically interfere with, an emergency response plan or emergency evacuation plan. This project impact would remain less than significant and no mitigation would be required.

Fire Hazards

Impacts related to Fire Hazards as a result of the proposed project were evaluated in the Redevelopment EIR. As described in the Redevelopment EIR, the project would reduce existing fire hazards through construction of industrial buildings. The proposed project would develop the project site with industrial uses, similar to anticipated development analyzed in the EIR. For this reason, this impact would remain less than significant and no new or previously dismissed mitigation measures would be required.

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28 U.S. Department of Toxic Substances Control, 2018. Envirostor Database. California Department of Toxic Substances Control. DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List). Available: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=army+depot+park%2C+sacramento. Accessed July 6, 2022.

29 California State Water Resources Control Board, 2018. Geotracker Database. Depot Park, Sacramento, CA. Available: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=army+depot+park%2C+sacramento#. Accessed July 6, 2022.

Conclusion

The proposed project would not result in new significant impacts or substantially more severe impacts related to hazards and hazardous materials that were not previously addressed and disclosed in the Redevelopment EIR. The proposed project would not make feasible mitigation measures that were found to be infeasible in the Redevelopment EIR. Further, there are no new mitigation measures that were not considered in the Redevelopment EIR that would more substantially reduce the potential effects of the proposed project related to hazards and hazardous materials. For these reasons, project effects related to hazards and hazardous materials resources would not require the preparation of a subsequent EIR.

XIII. Hydrology and Water Quality

Environmental Setting

The City of Sacramento is located with the Sacramento River Basin. The Sacramento River Basin is approximately 27,000 square miles and is the largest river basin within the State of California, receiving an average of approximately 914 millimeters (mm) of precipitation per year (USGS, 2016).

Flood Protection

As discussed in the Redevelopment EIR, the project site is located in the geological floodplain of the Sacramento and American River system. The project area is separated from the active channels by artificial levees along the American and Sacramento River. The USACE determined that the existing regional flood control system provides significantly less than 100-year protection and that regionally-generating flooding within the proposed project area is the result of levee failure along the east levee of the Sacramento River or the south levee of the American River. The Sacramento Area Flood Control Agency (SAFCA) was working with the state of California and federal agencies to develop alternative flood controls for the American River at the time of certification of the Redevelopment EIR.

The proposed project is located within the Federal Emergency Management Agency (FEMA) designated area of Shaded X, protected by levees (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood) in the 100-year floodplain.[30]

The project site is located in the Morrison Creek Stream Group Basin and predominately drains to the west. The Morrison Creek natural channel has been diverted to a flood channel and under existing conditions, the creek borders the proposed project on the southeastern, southern, and southwestern boundary with the creek draining towards the western part of the proposed project site. During the certification of the Redevelopment

30 City of Sacramento, 2015. *Flood Zones*. https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Flood-Ready/DFIRM_flood_zones_2015_Dsize_Blank.pdf?la=en

EIR, engineered channels and levees along the reach of Morrison Creek were not equipped to contain 100-year flows. Additionally, the Redevelopment EIR concluded that downstream of the project site, the Morrison Creek and Beach-Stone Lakes systems were not able to accommodate the 100-year runoff under previously existing conditions. To offset impacts related to flooding, the Redevelopment EIR required all new construction to comply with the City of Sacramento Flood Control Policy for development within the 100-year flood plain (A99 Zone). The proposed project would also be required to comply with the floodplain management and building requirements of Section 60.3 of the NFIP, consistent with the A99 flood zone designation. Furthermore, the proposed project would be required to comply with the City of Sacramento requirement that all new structures are constructed to be above the existing 100-year base flood (BFE), and if a structure is proposed below the BFE, the developer would be required to sign a new construction agreement. Therefore, impacts to flooding are anticipated to be similar to those identified in the Redevelopment EIR and would not result in new significant impacts to flooding or impacts that are substantially more severe than significant impacts previously disclosed. No new mitigation measures would be required.

Storm Water Infrastructure

Development of the proposed project would increase the amount of impervious surface, increasing the rate and amount of surface water runoff entering the existing drainage system. The existing Sacramento Army Depot drainage system consists of stormwater outfalls, catch basins, drop inlets, and manholes with drainage pipes ranging from sixty-inches to 3.5 inches in diameter. Seven surface discharge outfalls drain into Morrison Creek and drain the industrial area to northeast and southern sections of the site along the eastern boundary of the Depot Park area, with the remaining surface discharge draining to the west.

Additional surface water runoff from the proposed project could result in potentially significant impacts to the existing drainage system and could contribute to localized flooding hazards. However, the proposed project would construct a stormwater drainage system that would direct all flows from the project site through an onsite detention system, located on the west side of the project site. Storm drainage would be treated onsite before being released into a swale that outfalls into Morrison Creek approximately 400 feet west of the Project.

The stormwater drainage system described above would offset potential flooding impacts and provide stormwater quality treatment. Furthermore, implementation of the Redevelopment EIR Mitigation Measure 4.7-1(1) through 4.7-1(3), included below, would further reduce impacts related to increased stormwater runoff and water quality impacts. Therefore, impacts to flooding are anticipated to be similar to those identified in the Redevelopment EIR and would not result in new significant impacts to flooding or impacts that are substantially more severe than significant impacts previously disclosed. No new mitigation measures would be required.

<u>Mitigation Measure 4.7-1 from the Redevelopment EIR</u>

4.7-1(1)

The City of Sacramento shall review each development application within the project area for effects on drainage facility capacity. Each project reviewed shall identify the rate and amount of surface water runoff generated by proposed development and the effects of drainage facility capacity. Modifications to existing facilities and new facilities to regulate rate and volume of runoff released to Morrison Creek shall be identified, and each project shall pay a fair share portion of any improvement identified. Drainage facilities could include, but would not be limited to:

a) The expansion or modification of exiting storm drain facilities;

b) Single-project detention basins; or

c) The preservation of natural drainage areas.

4.7-1(2)

The City of Sacramento shall continue to coordinate with the United State Army Corps of Engineers and the County of Sacramento to assess the level of flood protection provided by the Morrison Creek Flood Control System.

4.7-1(3)

The City of Sacramento shall participate in the development of alternatives to increase the capacity of the Morrison Creek Flood Control System to accommodate existing flows, and flows which would result from future development. These alternatives may include, but are not limited to, the following:

d) Raising levees;

e) Channel widening;

f) Floodwalls; and

g) Detention basins.

Water Quality

The City of Sacramento relies on surface water for its water supply. Over time, the conversion of land from agricultural use to urban use has resulted in degradation of surface water quality within the area. Typically, urban occupancy results in long-term impacts to surface water and groundwater quality through industrial, community, and residential development. Short-term impacts to surface water and groundwater quality are a result of construction activities (i.e., grading, excavation, and/or other similar activities) that could cause soil erosion at an accelerate rate. The use of heavy construction equipment could also result in water quality impacts from the use of heavy metals, oil, grease, and other petroleum hydrocarbons that could come into contact with surface water. The Redevelopment EIR concluded that these impacts could be significant; however, as discussed in the EIR, Mitigation Measure 4.7-4 would be implemented which would require the proposed project to include Best Management

Practices (BMP), approved by the City's Utilities Department and in compliance with the City's NPDES permit, as part of the project design. Furthermore, as stated in the EIR, the proposed project would be developed and operated in compliance with municipal NPDES regulations. Implementation of the above mitigation measures would reduce potentially significant impacts to a less-than-significant level and impacts would be similar to those previously analyzed in the Redevelopment EIR.

Conclusion

Changes introduced by the proposed project and/or new circumstances relevant to the project would not, as compared to the Redevelopment EIR, result in new significant impacts relating to hydrology or water quality, or significant impacts that are substantially more severe than impacts previously disclosed. No new mitigation measures would be required. In addition, there is no new information of substantial importance showing that the project would have one or more significant effects not previously discussed or that any previously examined significant effects would be substantially more severe than significant effects shown in the previous EIR. For these reasons, impacts to hydrology or water quality from the proposed project would not require the preparation of a subsequent EIR.

XIV. Noise and Vibration

As presented in Section 4.4 (Noise) of the Redevelopment EIR, construction activities within 1,500 feet of a sensitive receptor and pile driving activities within 7,000 feet of a sensitive receptor could result in significant noise impacts. Temporary construction noise was identified as a significant and unavoidable impact in the Redevelopment EIR, and similar impacts were recognized for urban areas in the SGPU EIR, applicable at the time the Redevelopment EIR was prepared. A Statement of Overriding Considerations was adopted with the SGPU as well as for the Redevelopment Plan for impacts related to construction noise.

Potential impacts resulting from implementation of the Redevelopment Plan are within the scope of these findings. The proposed project would not include pile driving. The nearest sensitive receptor to the project site would be residential uses on Power Inn Road, approximately 1,955 feet to the west. At this distance, noise levels from standard construction of 90 dBA at 50 feet would be attenuated to 58 dBA which would be well below daytime ambient noise levels in this suburban neighborhood adjacent to a four-lane arterial roadway (Power Inn Road) and near an active railway. Since construction of the proposed project would remain within the allowed hours specified in the City's municipal code and use similar construction equipment already anticipated and analyzed in the Redevelopment EIR, a substantial increase noise levels at the nearest sensitive receptor would not be anticipated, and the proposed project would not result in new significant impacts or a substantial increase in severity of significant impacts related to construction noise.

Given its programmatic approach, the assessment of operational noise within the Redevelopment EIR was limited to transportation noise**,** as a detailed site plan and a description of specific uses proposed within the Redevelopment Plan area were not available at the time the Redevelopment EIR was prepared.

The proposed project would include two warehouse buildings totaling 373,708 square feet. The primary noise sources involved with a logistics warehouse facility would be HVAC and potentially large-scale cooling equipment (condensers) mounted on the building rooftop, and on-site maneuvering and idling of trucks and truck-mounted transportation refrigeration units (TRUs). Loading and forklift operations could occur within or proximate to the warehouse. Additionally, vehicle trips, primarily heavy-duty trucks, would be generated on the local roadway network, increasing noise levels where sensitive land uses may be present.

Since the certification of the Redevelopment EIR, civil site plans have been created for the project site. Based on the site plans for the project site, HVAC units and onsite loading dock would be located approximately 1,955 feet from the nearest receptors on Power Inn Road, to the west of the project site. HVAC units can generate noise levels of approximately 51 dBA L_{eq} at a reference distance of 100 feet from the operating units, during maximum heating or air conditioning operations.[31] Loading dock activities could generate a noise level of 66 dBA L_{eq} from a distance of 50 feet.[32] Assuming a 6-dB-per-doubling–of-distance attenuation rate, the nearest multi-family residences to the project site would be exposed to a noise level of less than 36 dBA L_{eq} during the operation onsite HVAC units and onsite truck loading and unloading activities. Intervening structures would also substantially attenuate noise resultant levels. These residences would not be exposed to noise levels that would exceed the City of Sacramento's nighttime stationary noise standard of 50 dBA L_{eq}. Therefore, the proposed project would not result in new significant impacts or a substantial increase in severity of significant impacts related to stationary noise sources.

Section 4.4 (Noise) of the Redevelopment EIR evaluated the potential for the proposed project to result in an increase in vehicular traffic noise along roadways in the vicinity of the project site. As shown in in Table 4.4-5 of the Redevelopment EIR, traffic noise was modeled for the Baseline No Development and Baseline plus Project Conditions, which accounted for traffic that would be generated by the project site and as forecast under the General Plan. The Redevelopment EIR, concluded that the General Plan would result in a noticeable noise level increase of 5 dBA along Fruitridge Road, 7 dBA along Elder Creek Road, and 9 dBA along Florin-Perkins Road when compared with existing traffic conditions but that only a small fraction of the additional noise would be caused by projects constructed under the Redevelopment Plan. Although implementation of the Redevelopment Plan was found to potentially contribute to an incremental increase in traffic-generated noise levels at some sensitive receptor locations, because

31 Puron, 2005. *48PG03-28 Product Data*. p. 10 – 11.
32 ESA, 2008. *Fresh & Easy Distribution Truck Noise Study*. November 2008.

the growth was considered in the Sacramento General Plan Update, the Redevelopment Plan was determined to result in a less-than-significant increased vehicular noise impact on sensitive receptors.

The proposed warehouse industrial project would generate vehicle trips, primarily heavy-duty trucks, on the local roadway network, increasing noise levels where sensitive land uses may be present. Vehicle volumes that would be generated by the facility during its peak transportation hour (for the proposed facility) have been estimated as part of the transportation analysis.

Using algorithms from the Federal Highway Administration's (FHWA) *Traffic Noise Model Technical Manual* and the estimated traffic volumes under Existing and Existing plus Project Conditions, traffic noise levels were estimated for local roadways that have access to sensitive receptors. Of the seven roadways analyzed in the Transportation Impact Assessment, only Fruitridge Road and Elder Creek Road provide access outside of the industrial zoned area. As shown in **Table 5**, none of the sensitive land uses along roadway segments analyzed would be exposed to an increase in traffic noise that would exceed the incremental traffic noise increase standards identified in the City of Sacramento 2035 General Plan Policy EC 3.1.2. Therefore, proposed project would not result in new significant impacts or a substantial increase in severity of significant impacts related to vehicular traffic noise.

TABLE 5
EXISTING AND PROJECTED PEAK HOUR TRAFFIC NOISE LEVELS AT 100 FEET FROM ROADWAY CENTER

	Traffic Noise Level, dBA, Ldn[1]			
Roadway Segment	**Existing**	**Existing plus Project**	**Incremental Increase**	**Existing Sensitive Land uses Exposed to a Significant Increase in Traffic Noise? (Yes or No)[2]**
Fruitridge Road, west of Florin Perkins Road	71.4	73.3	1.9	No
Elder Creek Road, west of Florin Perkins Road	71.6	71.9	0.3	No

NOTES:
1. Noise levels were determined using methodology described in FHWA Traffic Noise Model Technical Manual using estimated traffic volumes for the peak a.m. traffic hour.
2. Existing land uses exposed to traffic noise that result in a noise increase greater than what is allowed in the City of Sacramento General Plan Policy EC 3.1.2 is considered a significant impact.

ESA, 2022

Section 4.4 (Noise) of the Redevelopment EIR did not address the potential for construction activities to require the use of equipment known to generate significant vibration levels such as blasting or impact pile driving. Since construction of the proposed development would not require the use of construction equipment such as impact pile drivers or blasting, the proposed project would not result in new significant impacts or a substantial increase in severity of significant impacts related to construction vibration.

Conclusion

Changes introduced by the proposed project and/or new circumstances relevant to the project would not, as compared to the Redevelopment EIR, result in new significant impacts related to noise and vibration, or significant impacts that are substantially more severe than impacts previously disclosed. No new mitigation measures would be required. In addition, there is no new information of substantial importance showing that the project would have one or more significant effects not previously discussed or that any previously examined significant effects would be substantially more severe than significant effects shown in the previous EIR. For these reasons, impacts related to noise and vibration from the proposed project would not require the preparation of a subsequent EIR.

XV. Public Services

The Public Services section of the Redevelopment EIR described existing public services for the project site and evaluated potential impacts of the project with respect to public resource use and available service for the project area. This analysis determined that the anticipated development at the project site would result in less-than-significant impacts to public services for fire protection, schools, and maintenance of public facilities. However, impacts to police protection services would be potentially significant due to the potential for increased crime rates as a result of the redevelopment plan. The Redevelopment EIR identified Mitigation Measure 4.8-2 (see below), the implementation of which would reduce project impacts related to police protection services to less than significant.

<u>Mitigation Measure 4.8-2 from the Redevelopment EIR</u>

> Prior to final approval, all public agency projects included as part of the Project and any agency sponsored private development projects shall be required to submit conceptual plans to the Police Department for review of adequate safety in project design. The public or private entity shall work with the Police Department to include measures such as Crime Prevention through Environmental Design (CPED) in final development plans. Typical CPED design criteria include adequate lighting, commercial visibility, and the encouragement of proprietary responsibility.

Police protection services to the project site are provided by the Sacramento City Police Department (SPD). The project area is serviced by the William J. Kinney Police Facility, operating at 3550 Marysville Boulevard, approximately 8 miles north of the project site. This remains consistent with the police protection services analyzed in the Redevelopment EIR.

Fire protection and emergency medical services to the project area are provided by the Sacramento Fire Department (SFD). First-response service is provided by the following stations, which remains consistent with the fire protection services analyzed in the Redevelopment EIR:

- Station 9, located at 5801 Florin-Perkins Road, approximately 3.4 miles west of the project site;
- Station 10, located at 5642 66th Street, approximately 1.5 mile west of the project site;
- Station 8, located at 6990 H Street, approximately 3.7 miles north of the project site; and
- Station 6, located at 3301 Martin L K, approximately 3.4 miles west of the project site.

The proposed project would be an industrial use, as planned for in the Redevelopment EIR and in subsequent land use plans for the City and region. Therefore, no additional demand for police protection, fire protection, or maintenance of public facilities were expected to occur from the demand anticipated in the Redevelopment EIR. Furthermore, implementation of the Redevelopment EIR Mitigation Measure 4.8-2, which would require consultation with the Police Department to ensure safety in project design, would be implemented as part of the proposed project and further reduce impacts related to increased police protect services impacts. Therefore, the demand for police and fire protection services would be the same as the demand anticipated and analyzed in the Redevelopment EIR.

The proposed project would be an industrial use and would not require school or library services, because the project would not include residential uses that would contribute to the demand for these services. Therefore, it is not anticipated that there would be a substantial increase in demand for school or library services beyond what was already anticipated in the Redevelopment EIR.

Conclusion

Changes introduced by the proposed project and/or new circumstances relevant to the project would not, as compared to the Redevelopment EIR, result in new significant impacts relating to public services, or significant impacts that are substantially more severe than impacts previously disclosed. No new mitigation measures would be required. In addition, there is no new information of substantial importance showing that the project would have one or more significant effects not previously discussed or that any previously examined significant effects would be substantially more severe than significant effects shown in the previous EIR. For these reasons, impacts to public services from the proposed project would not require the preparation of a subsequent EIR.

XVI. Transportation

Existing Roadway System

The roadway component of the transportation system near the proposed project is described below.

Midway Street

Midway Street is a north-south local road located on the eastern border of the project site. To the north, the roadway extends up to its intersection with Ferguson Avenue. To the south, Midway Street intersects with Caroline Drive, just before its intersection with Morrison Creek.

Nautilus Avenue

Nautilus Avenue is both and north-south and east-west local road which provides the northern border of the project site. The roadway provides access to Fruitridge Road to the north, and continues eastward from its southern end to Midway Street.

Park Avenue

Park Avenue is another east-west local road which borders the southern edge of the project site. The roadway extends to Caroline Drive to the west, just before Morrison Creek, and to Mortono Street to the east, before another portion of Morrison Creek.

Florin Perkins Road

Florin Perkins Road is a north-south arterial located approximately 0.3 miles east of the project site, To the north, the roadway provides access to SR 16 which connects to US 50. To the south, Florin Perkins Road extends to Florin Road, where it becomes French Road that further extends to Gerber Road. Florin Perkins Road has two through lanes.

Power Inn Road

Power Inn Road is a north-south arterial located about 0.3 miles west of the project site. To the north, the roadway extends to Folsom Boulevard (SR 16) where it becomes Howe Avenue that provides access to US 50. Howe Avenue extends further north to provide access through northern Sacramento County to SR 51. To the south, Power Inn Road extends to Sheldon Road in the City of Elk Grove. Power Inn Road has two to three through lanes.

Fruitridge Road

Fruitridge Road is an east-west arterial located about 0.5 miles north of the project site. To the west, the roadway provides access to SR 99 and extends to South Land Park Drive. To the east, Fruitridge Road extends to Mayhew Road. Fruitridge Road has two to four through lanes.

Elder Creek Road

Elder Creek Road is an east-west arterial located about 0.3 miles south of the project site. To the west, Elder Creek Road extends to Stockton Boulevard, where it becomes 47th Avenue. 47th Avenue provides access to SR 99. To the east, Elder Creek Road extends to Excelsior Road. Elder Creek Road has two to four through lanes.

Existing Pedestrian System

The pedestrian system in the site vicinity consists of sidewalks along Florin Perkins Road, Fruitridge Road, Power Inn Road and Elder Creek Road. Among the internal roads, parts of Okinawa Street, Midway Street and Santa Cruz Street have sidewalks.

Existing Bicycle System

There are existing bike lanes along both sides of Fruitridge Road, Power Inn Road and Florin Perkins Road in the site vicinity.

Existing Transit System

There is limited transit service in the vicinity of the project site. Bus Route 61 (Fruitridge) operates along Fruitridge Road and along Power Inn Road, west of the project site. Bus Route 81 operates on 65th Street about 1.3 miles west of the project site. RT's Gold Line Light Rail service is located about 2 miles north of the site.

Intersections and Roadway Segments

The Redevelopment EIR concluded, based on a traffic study prepared for the EIR, that intersection impacts from the Redevelopment Plan would construction, reconstruct, install or upgrade control devices, streetlights, transit shelters, roadways and roadway extensions. Those projects were anticipated to help ameliorate circulation problems in the project area, resulting in less-than-significant project-specific and cumulative traffic impacts (page 4.2-7).

Subsequent to certification of the Redevelopment EIR, the City adopted the 2035 General Plan, which included policy revisions to the City's LOS standard (Policy M.1.2.2. Level of Service (LOS) Standard), to allow for greater flexibility in the application of the City's standards based on area-specific needs. The policy revision established variable LOS thresholds. While the City would maintain the goal of roadway operations at LOS D or better, the policy revisions identified areas and roadway segments for which LOS E or F would be permittefd. However, the project site remains within an area for which LOS D or better is the applicable threshold under the 2035 General Plan.

Land uses have evolved only slightly in the vicinity of the project site since certification of the Redevelopment EIR.

The proposed project would develop two industrial warehouse buildings with office space on the project site. The proposed project would be accessible from public roadways at the Florin Perkins Road and Thys Court intersection, and may also be accessible from the Florin Perkins Road and Driveway intersection to the south of the project site. These two driveways will accommodate most employee and freight motor vehicle traffic. All traffic would be anticipated to pass through security entering and exiting the Depot Park Area. From within the Deport Park Area, the project site would be accessed via two driveways located on Midway Street and seven driveways located on Midway Street, Nautilus Avenue, and Park Avenue.

A transportation study was prepared for the proposed project to evaluate potential impacts from the project on roadways and pedestrian, bicycle, and transit facilities and circulation (see **Attachment 2**).[33] **Table 6** shows the trip generation for the land use types that would be anticipated to occur pursuant to the proposed project.

TABLE 6
VEHICULAR TRIP GENERATION BY CLASSIFICATION

Use	ITE Code	Size (1,000 square feet)	Vehicle Trips Generated						
			Weekday	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
General Light Industrial	110	373.960	1,821	244	33	277	34	209	243
Industrial Park	130		1,260	103	24	127	28	99	127
Manufacturing	140		1,776	193	61	254	86	191	277
Warehousing	150		639	49	15	64	19	48	67
Source: DKS Associates, 2022; ITE Trip Generation Manual 11th Edition, Version 6.0.1, May 2022.									

The General Light Industrial (Code 110) was identified as the use for analysis as it provides the most conservative (highest) peak hour and directional estimates. Therefore, the proposed project would generate 1,821 average daily weekday trips, 277 a.m. peak hour weekday trips, and 243 p.m. peak hour weekday trips.[34]

The Traffic Impact Analysis evaluated impacts from the proposed project on intersections in the project area including the following nine study intersections:

1. Florin Perkins Road & Fruitridge Road;
2. Florin Perkins Road & Siena Avenue/Thys Court;
3. Florin Perkins Road & Okinawa Street;
4. Siena Avenue & Mortono Street;
5. Midway Street/ Midway Street & Tripoli Avenue;

33 DKS Associates, 2022. *Draft Traffic Impact Analysis, Depot Park 2 Logistics Facility*, Prepared for the City of Sacramento. June 20, 2022.

34 DKS Associates, 2022. *Draft Traffic Impact Analysis, Depot Park 2 Logistics Facility*, Prepared for the City of Sacramento. June 20, 2022. Page 19.

6. Mortono Street & Tripoli Avenue;
7. Mortono Street & Okinawa Street;
8. Elder Creek Road & Florin Perkins Road; and
9. Nautilus Avenue & Midway Street

The Traffic Impact Analysis analyzed AM peak hour and PM peak hour traffic volumes under Existing and Existing Plus Project conditions. The proposed project would increase traffic volume and delay at study area intersections under the Existing Plus Project scenario. Based on the analysis below, the impact is less than significant.

As summarized in **Table 7**, the project would increase average delay at several study area intersections. The project would increase traffic volumes at several study area intersections. The resultant operating conditions do not exceed the LOS D goals. For these reasons, the proposed project would not result in impacts to roadway intersections that would exceed the City's level of service standard, and no mitigation is required.

TABLE 7
EXISTING AND EXISTING PLUS PROJECT INTERSECTION ANALYSIS

Intersection	Existing				Existing Plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS
1. Florin Perkins Rd. & Fruitridge Rd.	33.2	C	33.6	C	49.2	D	44.5	D
2. Florin Perkins Rd. & Siena Ave./ Thys Ct.	38.4	D	38.2	D	53.0	D	39.1	D
3. Florin Perkins Rd. & Okinawa St.	0.4	A	2.0	A	0.3	A	2.6	A
4. Siena Ave. & Mortono St.	3.6	A	3.2	A	8.9	A	6.1	A
5. Midway St./Midway St. & Tripoli Ave.	6.8	A	7.0	A	10.7	B	9.9	A
6. Mortono St. & Tripoli Ave.	6.7	A	7.1	A	7.6	A	7.5	A
7. Mortono St. & Okinawa St.	7.5	A	7.3	A	7.5	A	7.3	A
8. Elder Creek Rd. & Florin Perkins Rd.	39.5	D	44.2	D	42.7	D	45.9	D
9. Nautilus Ave. & Midway St.	7.0	A	7.1	A	10.0	A	8.9	A

NOTES:
Bold: Intersection delay reduced in Existing Plus Project Scenario, as volume has been added to non-critical approaches and intersection operates more efficiently.

Source: DKS Associates, 2022.

The proposed project would increase daily traffic volume at study roadway segment under the existing plus project scenario. Based on the analysis below, the impact is less than significant.

As summarized in Table 8, the project would increase the daily volume and v/c ratio at study roadway segment. The resultant operating conditions do not exceed the City's LOS D goals for roadway segments. No mitigation is required.

Impacts to Transit

The proposed project would not adversely affect public transit operations. The proposed project would not modify or impede any existing or planned transit facilities or routes. For this reason, impacts to transit would be less than significant. No mitigation is required.

Pedestrian Facilities

The proposed project would not affect existing or planned pedestrian facilities. Thus, impacts to pedestrian facilities would be less than significant. No mitigation is required.

Impacts to Bicycle Facilities

The proposed project would not adversely affect existing or planned bicycle facilities. Therefore, impacts to bicycle facilities would be less than significant. No mitigation is required.

Traffic Impacts from Construction

The proposed project could cause potentially significant impacts due to construction-related activities. The City Code (City Code 12.20.030) requires that a construction traffic control plan is prepared and approved prior to the beginning of project construction, to the satisfaction of the City Traffic Engineer and subject to review by all affected agencies. All work performed during construction must conform to the conditions and requirements of the approved plan. The plan shall ensure that safe and efficient movement of traffic through the construction work zone(s) is maintained. At a minimum, the plan is required to include the following:

- Time and day of street closures;
- Proper advance warning and posted signage regarding street closures;
- Provision of driveway access plan to ensure safe vehicular, pedestrian, and bicycle movements;
- Safe and efficient access routes for emergency vehicles;
- Provisions for pedestrian safety;
- Use of manual traffic control when necessary;
- Number of anticipated truck trips, and time of day of arrival and departure of trucks;

- Provision of a truck circulation pattern and staging area with a limitation on the number of trucks that can be waiting and any limitations on the size and type of trucks appropriate for the surrounding transportation network

The plan must be available at the site for inspection by the City representative during all work. With the implementation of the traffic control plan, local roadways and freeway facilities will continue to operate at acceptable operating conditions and the impact of the project would be less than significant. No mitigation is required.

Transportation Conclusions

The proposed project would not alter the impacts to transportation facilities relative to those discussed in the Redevelopment EIR. Changes introduced by the proposed project and/or new circumstances relevant to the project would not, as compared to the Redevelopment EIR, result in a new significant impact or significant impacts that are substantially more severe than significant impacts previously disclosed. In addition, there is no new information of substantial importance showing that the proposed project would have one or more significant effects not previously discussed or that any previously examined significant effects would be substantially more severe than significant effects shown in the Redevelopment EIR. Nor is there new information of substantial importance showing (i) that mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents declined to adopt the mitigation measure or alternative or (ii) that mitigation measures or alternatives considerably different from those analyzed in the Redevelopment EIR would substantially reduce one or more significant effects, but the proponents decline to adopt the mitigation measure or alternative. For these reasons, impacts to parking from the proposed project would not require the preparation of a subsequent EIR. No new mitigation measures will be required.

XVII. Utilities and Service Systems

Communication Systems

The Redevelopment EIR did not analyze communication systems for the redevelopment plan. There is existing communication infrastructure serving the Depot Park area and proposed project would acquire telephone and data service from the current existing carrier(s) that are established in the City of Sacramento. Additionally, the proposed project does not require substantial offsite improvements that would constitute new or more significant impacts. For these reasons, impacts from the proposed project would be less than significant and no mitigation would be required.

Local or Regional Water Supplies

The Redevelopment EIR determined that the Sacramento Army Depot Redevelopment project would have a less-than-significant impact related to water supply. The project site is located in an area of the City that is served by an extensive private system of service mains located within Midway Street. The proposed project would establish primary connections to utility infrastructure from the service point that is planned to serve the proposed logistics facility structure in the northeast corner of the project site. Water supply would be provided from a 10-inch private main located in Midway Street.

Since certification of the EIR, the City has adopted the 2035 General Plan and three UWMPs, the most recent 2020 UWMP adopted by the City Council on June 30, 2021[35] The 2020 UWMP is based on the development assumptions in the 2035 General Plan. The 2020 UWMP concludes that the City would have adequate water supply to serve the total anticipated demand associated with City buildout, even in multiple dry year scenarios, out to 2045.

The proposed project would be an industrial use, as planned for in the Redevelopment EIR. As such, the amount of water use would be comparable to the amount of water demand described in the Redevelopment EIR. Additionally, sufficient water supplies are available to the City and for the proposed project, as demonstrated in the most recent UWMP.

As described above, the proposed project would not increase water demand beyond the amount anticipated in the most recent UWMP or require substantial improvements that would constitute new or more significant impacts. The proposed project would not have more significant effects that were not discussed in the EIR or increase the severity of impacts discussed therein. Therefore, with the proposed water supply serving the proposed project, no additional mitigation measures would be required. For these reasons, impacts related to water supply resulting from implementation of the proposed project would not require the preparation of a subsequent EIR.

Local or Regional Water Treatment or Distribution Facilities

Sewer or Septic Tanks

As described in the Redevelopment EIR, the project site would be served by the Sacramento Regional County Sanitation District (SRCSD) and the regional collection system and wastewater treatment for the project area would be provided by the County Sanitation District No. 1 (now operated as the Sacramento Area Sewer District). The EIR determined that impacts from the redevelopment plan to wastewater treatment and distribution facilities would be less than significant. As analyzed in the Redevelopment EIR, implementation of the proposed project would increase demand for sewer service in the project area. However, the proposed project would provide funding for construction of relief sewer lines and new sewer construction where flows are less than one mgd.

The proposed industrial development at the project site is consistent with existing City plans, therefore, anticipated flows from the proposed project would not exceed capacity of conveyance infrastructure. Required developer financing of fees and infrastructure to provide wastewater collection and treatment to the project site by the SRCSD and CSD-1 would ensure that wastewater infrastructure would be adequate to meet project demand. For these reasons, the proposed project would not substantially increase

35 City of Sacramento, 2021. *2020 Urban Water Management Plan*. June 30, 2021.

demand for wastewater conveyance beyond the amount anticipated in the EIR or require substantial offsite improvements that would constitute new or more significant impacts. The proposed project would not have more significant effects that were not discussed in the Redevelopment EIR or increase the severity of impacts discussed therein. Further, there are no mitigation measures that were not considered in the Redevelopment EIR, that would more substantially reduce the potential effects of the proposed project on sewer services. For these reasons, impacts related to wastewater treatment and conveyance from the proposed project would not require the preparation of a subsequent EIR.

Storm Water Drainage

As described in the Redevelopment EIR, stormwater from the project site is conveyed via runoff to drainage channels that discharge into Morrison Creek. The existing drainage system at the project site consists of stormwater outfalls, catch basins, drop inlets, and manholes. As analyzed in the Redevelopment EIR, implementation of the proposed project would increase the area of impervious surfaces, which would increase storm runoff peak flows and volumes. This could contribute to flooding hazards within the vicinity of the project site and to downstream capacity problems for the local drainage system and Morrison Creek. However, development of industrial uses would be consistent with existing plans, policies, and ordinances. Additionally, the EIR proposed several mitigation measures to reduce stormwater drainage impacts to less than significant.

As described in the project description, the proposed project would construct a stormwater drainage system that would direct all flows from the project site through an onsite detention system, located on the west side of the project site. Storm drainage would be treated onsite before being released into a swale that outfalls into Morrison Creek approximately 400 feet west of the Project.

Therefore, no additional mitigation measures would be required. For these reasons, impacts related to stormwater drainage resulting from implementation of the proposed project would not require the preparation of a subsequent EIR.

Solid Waste Disposal

As described in the Redevelopment EIR, the City provides solid waste and recycling collection and disposal services to the project site. Implementation of the Redevelopment Plan would increase the amount of solid waste at the Kiefer Landfill, however, the project would not result in development levels higher than those currently allowed under the City General Plan.

Waste generated by the proposed project would be collected and transported to local landfills by the City and/or private haulers, and recycled in accordance with City programs and requirements or land filled at Kiefer Landfill. This facility currently has approximately

113 million cubic yards in available capacity.[36] Waste from the proposed project would represent a fraction of a percentage of the available capacity from this facility. Because there would be no need to expand or create new landfill or solid waste management facilities, there would be no related physical environmental effects. Similar to the impacts evaluated in the EIR, the proposed project would have a less-than-significant effect on solid waste disposal.

Conclusion

Proposed project impacts related to utilities would not be significantly changed from those previously analyzed in the Redevelopment EIR. The proposed project would not have more significant impacts than were identified within the EIR or increase the severity of impacts discussed therein. No additional mitigation measures are described herein that were not considered in the EIR. For this reason, impacts relating to utilities and service systems resulting from the proposed project would not require the preparation of a subsequent EIR.

Conclusion

As established in the discussions above regarding the potential effects of the proposed project, substantial changes are not proposed to the project, nor have any substantial changes occurred that would require major revisions to the original EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The proposed project would not include any substantial new information, changes, or impacts that would require major revisions to the Redevelopment EIR. In addition, there is no new information of substantial importance showing that the project would have one or more significant effects not previously discussed or that any previously examined significant effects would be substantially more severe than significant effects shown in the previous EIR. Nor is there new information of substantial importance showing (i) that mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative or (ii) that mitigation measures or alternatives considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects, but the proponents decline to adopt the mitigation measure or alternative. Therefore, the City of Sacramento's Community Development Department concludes that the analyses conducted and the conclusions reached in the EIR remain relevant and valid. As such, based on the record as a whole, there is no substantial evidence to support a fair argument that the proposed project may result in significant environmental impacts not previously studied in the EIR and, accordingly, the project changes would not result in any conditions identified in CEQA Guidelines Section 15162. Thus, a subsequent EIR is not required for the changes

[36] Cal Recycle, 2019. Sacramento County Landfill (Kiefer). Available: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2070?siteID=2507. Accessed July 6, 2022.

to the project. The proposed project would remain subject to all applicable previously required mitigation measures from the EIR.

Based on the above analysis, this Addendum to the previously certified EIR for the project has been prepared.

Attachments:

1. Air Quality Data
2. Traffic Impact Analysis
3. Biological Technical Report

ATTACHMENT 1

Air Quality Data

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Valley Oak Depot

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	373.96	1000sqft	8.58	373,960.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2024
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	357.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - project specific info

Construction Phase - No demo phase, project site is vacant

Grading - Project specific info

Vehicle Trips - Project specific info

Construction Off-road Equipment Mitigation - Project specific info

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	30.00
tblGrading	AcresOfGrading	45.00	15.00
tblVehicleTrips	ST_TR	1.74	4.87

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	4.87
tblVehicleTrips	WD_TR	1.74	4.87

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					
2023	0.2577	2.2527	2.4070	5.6200e-003	0.5072	0.0949	0.6021	0.2268	0.0887	0.3155	0.0000	502.9508	502.9508	0.0804	0.0196	510.7977
2024	1.7880	0.4578	0.6081	1.3300e-003	0.0381	0.0187	0.0568	0.0103	0.0175	0.0279	0.0000	118.9753	118.9753	0.0190	4.3300e-003	120.7399
Maximum	**1.7880**	**2.2527**	**2.4070**	**5.6200e-003**	**0.5072**	**0.0949**	**0.6021**	**0.2268**	**0.0887**	**0.3155**	**0.0000**	**502.9508**	**502.9508**	**0.0804**	**0.0196**	**510.7977**

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					
2023	0.2577	2.2527	2.4070	5.6200e-003	0.3149	0.0949	0.4097	0.1256	0.0887	0.2143	0.0000	502.9505	502.9505	0.0804	0.0196	510.7973
2024	1.7880	0.4578	0.6081	1.3300e-003	0.0381	0.0187	0.0568	0.0103	0.0175	0.0279	0.0000	118.9752	118.9752	0.0190	4.3300e-003	120.7398
Maximum	**1.7880**	**2.2527**	**2.4070**	**5.6200e-003**	**0.3149**	**0.0949**	**0.4097**	**0.1256**	**0.0887**	**0.2143**	**0.0000**	**502.9505**	**502.9505**	**0.0804**	**0.0196**	**510.7973**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**35.28**	**0.00**	**29.20**	**42.69**	**0.00**	**29.48**	**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	**2-1-2023**	**4-30-2023**	0.7850	0.7850
2	**5-1-2023**	**7-31-2023**	0.6468	0.6468
3	**8-1-2023**	**10-31-2023**	0.6492	0.6492
4	**11-1-2023**	**1-31-2024**	0.6413	0.6413
5	**2-1-2024**	**4-30-2024**	2.0355	2.0355
		Highest	2.0355	2.0355

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6342	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003
Energy	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	203.4832	203.4832	0.0180	2.3400e-003	204.6327
Mobile	1.0232	1.5563	9.4765	0.0198	1.9662	0.0179	1.9841	0.5264	0.0168	0.5431	0.0000	1,826.1969	1,826.1969	0.1186	0.0975	1,858.2013
Waste						0.0000	0.0000		0.0000	0.0000	71.3554	0.0000	71.3554	4.2170	0.0000	176.7799
Water						0.0000	0.0000		0.0000	0.0000	27.4356	75.9817	103.4173	2.8249	0.0674	194.1206
Total	**2.6583**	**1.5653**	**9.4875**	**0.0198**	**1.9662**	**0.0186**	**1.9848**	**0.5264**	**0.0175**	**0.5438**	**98.7909**	**2,105.6684**	**2,204.4594**	**7.1785**	**0.1672**	**2,433.7417**

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	1.6342	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003
Energy	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	203.4832	203.4832	0.0180	2.3400e-003	204.6327
Mobile	1.0232	1.5563	9.4765	0.0198	1.9662	0.0179	1.9841	0.5264	0.0168	0.5431	0.0000	1,826.1969	1,826.1969	0.1186	0.0975	1,858.2013
Waste						0.0000	0.0000		0.0000	0.0000	71.3554	0.0000	71.3554	4.2170	0.0000	176.7799
Water						0.0000	0.0000		0.0000	0.0000	27.4356	75.9817	103.4173	2.8249	0.0674	194.1206
Total	**2.6583**	**1.5653**	**9.4875**	**0.0198**	**1.9662**	**0.0186**	**1.9848**	**0.5264**	**0.0175**	**0.5438**	**98.7909**	**2,105.6684**	**2,204.4594**	**7.1785**	**0.1672**	**2,433.7417**

	ROG	NOx	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	Site Preparation	Site Preparation	2/1/2023	3/14/2023	5	30	
2	Grading	Grading	3/15/2023	4/11/2023	5	20	
3	Building Construction	Building Construction	4/12/2023	2/27/2024	5	230	

4	Paving	Paving	2/28/2024	3/26/2024	5	20	
5	Architectural Coating	Architectural Coating	3/27/2024	4/23/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 560,940; Non-Residential Outdoor: 186,980; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	157.00	61.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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					
Fugitive Dust					0.2790	0.0000	0.2790	0.1498	0.0000	0.1498	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4129	0.2737	5.7000e-004		0.0190	0.0190		0.0175	0.0175	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0399**	**0.4129**	**0.2737**	**5.7000e-004**	**0.2790**	**0.0190**	**0.2979**	**0.1498**	**0.0175**	**0.1673**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

3.2 Site Preparation - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	5.3000e-004	6.6500e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1400e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7019	1.7019	5.0000e-005	5.0000e-005	1.7178
Total	**8.1000e-004**	**5.3000e-004**	**6.6500e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1400e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7019**	**1.7019**	**5.0000e-005**	**5.0000e-005**	**1.7178**

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					0.1255	0.0000	0.1255	0.0674	0.0000	0.0674	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4129	0.2737	5.7000e-004		0.0190	0.0190		0.0175	0.0175	0.0000	50.1760	50.1760	0.0162	0.0000	50.5817
Total	**0.0399**	**0.4129**	**0.2737**	**5.7000e-004**	**0.1255**	**0.0190**	**0.1445**	**0.0674**	**0.0175**	**0.0849**	**0.0000**	**50.1760**	**50.1760**	**0.0162**	**0.0000**	**50.5817**

3.2 Site Preparation - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	5.3000e-004	6.6500e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1400e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7019	1.7019	5.0000e-005	5.0000e-005	1.7178
Total	**8.1000e-004**	**5.3000e-004**	**6.6500e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1400e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7019**	**1.7019**	**5.0000e-005**	**5.0000e-005**	**1.7178**

3.3 Grading - 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					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0708**	**7.7500e-003**	**0.0786**	**0.0343**	**7.1300e-003**	**0.0414**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

3.3 Grading - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	3.7000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9455	0.9455	3.0000e-005	3.0000e-005	0.9544
Total	**4.5000e-004**	**2.9000e-004**	**3.7000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9455**	**0.9455**	**3.0000e-005**	**3.0000e-005**	**0.9544**

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					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1794	0.1475	3.0000e-004		7.7500e-003	7.7500e-003		7.1300e-003	7.1300e-003	0.0000	26.0606	26.0606	8.4300e-003	0.0000	26.2713
Total	**0.0171**	**0.1794**	**0.1475**	**3.0000e-004**	**0.0319**	**7.7500e-003**	**0.0396**	**0.0154**	**7.1300e-003**	**0.0225**	**0.0000**	**26.0606**	**26.0606**	**8.4300e-003**	**0.0000**	**26.2713**

3.3 Grading - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	3.7000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9455	0.9455	3.0000e-005	3.0000e-005	0.9544
Total	**4.5000e-004**	**2.9000e-004**	**3.7000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9455**	**0.9455**	**3.0000e-005**	**3.0000e-005**	**0.9544**

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	0.1478	1.3522	1.5269	2.5300e-003		0.0658	0.0658		0.0619	0.0619	0.0000	217.8965	217.8965	0.0518	0.0000	219.1923
Total	**0.1478**	**1.3522**	**1.5269**	**2.5300e-003**		**0.0658**	**0.0658**		**0.0619**	**0.0619**	**0.0000**	**217.8965**	**217.8965**	**0.0518**	**0.0000**	**219.1923**

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	7.2900e-003	0.2785	0.0850	1.1800e-003	0.0376	1.7000e-003	0.0393	0.0109	1.6200e-003	0.0125	0.0000	113.1462	113.1462	9.3000e-004	0.0168	118.1844
Worker	0.0443	0.0290	0.3636	1.0100e-003	0.1165	6.2000e-004	0.1172	0.0310	5.7000e-004	0.0316	0.0000	93.0241	93.0241	2.8900e-003	2.6800e-003	93.8957
Total	**0.0516**	**0.3075**	**0.4486**	**2.1900e-003**	**0.1542**	**2.3200e-003**	**0.1565**	**0.0419**	**2.1900e-003**	**0.0441**	**0.0000**	**206.1703**	**206.1703**	**3.8200e-003**	**0.0195**	**212.0801**

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	0.1478	1.3522	1.5269	2.5300e-003		0.0658	0.0658		0.0619	0.0619	0.0000	217.8962	217.8962	0.0518	0.0000	219.1921
Total	**0.1478**	**1.3522**	**1.5269**	**2.5300e-003**		**0.0658**	**0.0658**		**0.0619**	**0.0619**	**0.0000**	**217.8962**	**217.8962**	**0.0518**	**0.0000**	**219.1921**

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	7.2900e-003	0.2785	0.0850	1.1800e-003	0.0376	1.7000e-003	0.0393	0.0109	1.6200e-003	0.0125	0.0000	113.1462	113.1462	9.3000e-004	0.0168	118.1844
Worker	0.0443	0.0290	0.3636	1.0100e-003	0.1165	6.2000e-004	0.1172	0.0310	5.7000e-004	0.0316	0.0000	93.0241	93.0241	2.8900e-003	2.6800e-003	93.8957
Total	**0.0516**	**0.3075**	**0.4486**	**2.1900e-003**	**0.1542**	**2.3200e-003**	**0.1565**	**0.0419**	**2.1900e-003**	**0.0441**	**0.0000**	**206.1703**	**206.1703**	**3.8200e-003**	**0.0195**	**212.0801**

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	0.0309	0.2823	0.3395	5.7000e-004		0.0129	0.0129		0.0121	0.0121	0.0000	48.6883	48.6883	0.0115	0.0000	48.9762
Total	**0.0309**	**0.2823**	**0.3395**	**5.7000e-004**		**0.0129**	**0.0129**		**0.0121**	**0.0121**	**0.0000**	**48.6883**	**48.6883**	**0.0115**	**0.0000**	**48.9762**

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	1.5700e-003	0.0615	0.0185	2.6000e-004	8.4000e-003	3.8000e-004	8.7800e-003	2.4300e-003	3.6000e-004	2.7900e-003	0.0000	24.8029	24.8029	2.0000e-004	3.6900e-003	25.9086
Worker	9.2200e-003	5.7500e-003	0.0753	2.2000e-004	0.0260	1.3000e-004	0.0262	6.9300e-003	1.2000e-004	7.0500e-003	0.0000	20.1000	20.1000	5.8000e-004	5.6000e-004	20.2803
Total	**0.0108**	**0.0672**	**0.0938**	**4.8000e-004**	**0.0344**	**5.1000e-004**	**0.0350**	**9.3600e-003**	**4.8000e-004**	**9.8400e-003**	**0.0000**	**44.9028**	**44.9028**	**7.8000e-004**	**4.2500e-003**	**46.1889**

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	0.0309	0.2823	0.3395	5.7000e-004		0.0129	0.0129		0.0121	0.0121	0.0000	48.6883	48.6883	0.0115	0.0000	48.9761
Total	**0.0309**	**0.2823**	**0.3395**	**5.7000e-004**		**0.0129**	**0.0129**		**0.0121**	**0.0121**	**0.0000**	**48.6883**	**48.6883**	**0.0115**	**0.0000**	**48.9761**

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	1.5700e-003	0.0615	0.0185	2.6000e-004	8.4000e-003	3.8000e-004	8.7800e-003	2.4300e-003	3.6000e-004	2.7900e-003	0.0000	24.8029	24.8029	2.0000e-004	3.6900e-003	25.9086
Worker	9.2200e-003	5.7500e-003	0.0753	2.2000e-004	0.0260	1.3000e-004	0.0262	6.9300e-003	1.2000e-004	7.0500e-003	0.0000	20.1000	20.1000	5.8000e-004	5.6000e-004	20.2803
Total	**0.0108**	**0.0672**	**0.0938**	**4.8000e-004**	**0.0344**	**5.1000e-004**	**0.0350**	**9.3600e-003**	**4.8000e-004**	**9.8400e-003**	**0.0000**	**44.9028**	**44.9028**	**7.8000e-004**	**4.2500e-003**	**46.1889**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

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	4.2000e-004	2.6000e-004	3.4300e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9145	0.9145	3.0000e-005	3.0000e-005	0.9227
Total	**4.2000e-004**	**2.6000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9145**	**0.9145**	**3.0000e-005**	**3.0000e-005**	**0.9227**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

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	4.2000e-004	2.6000e-004	3.4300e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9145	0.9145	3.0000e-005	3.0000e-005	0.9227
Total	**4.2000e-004**	**2.6000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9145**	**0.9145**	**3.0000e-005**	**3.0000e-005**	**0.9227**

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	1.7333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**1.7351**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

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	8.7000e-004	5.4000e-004	7.0800e-003	2.0000e-005	2.4500e-003	1.0000e-005	2.4600e-003	6.5000e-004	1.0000e-005	6.6000e-004	0.0000	1.8899	1.8899	5.0000e-005	5.0000e-005	1.9069
Total	**8.7000e-004**	**5.4000e-004**	**7.0800e-003**	**2.0000e-005**	**2.4500e-003**	**1.0000e-005**	**2.4600e-003**	**6.5000e-004**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**1.8899**	**1.8899**	**5.0000e-005**	**5.0000e-005**	**1.9069**

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	1.7333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**1.7351**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

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	8.7000e-004	5.4000e-004	7.0800e-003	2.0000e-005	2.4500e-003	1.0000e-005	2.4600e-003	6.5000e-004	1.0000e-005	6.6000e-004	0.0000	1.8899	1.8899	5.0000e-005	5.0000e-005	1.9069
Total	**8.7000e-004**	**5.4000e-004**	**7.0800e-003**	**2.0000e-005**	**2.4500e-003**	**1.0000e-005**	**2.4600e-003**	**6.5000e-004**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**1.8899**	**1.8899**	**5.0000e-005**	**5.0000e-005**	**1.9069**

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	1.0232	1.5563	9.4765	0.0198	1.9662	0.0179	1.9841	0.5264	0.0168	0.5431	0.0000	1,826.1969	1,826.1969	0.1186	0.0975	1,858.2013
Unmitigated	1.0232	1.5563	9.4765	0.0198	1.9662	0.0179	1.9841	0.5264	0.0168	0.5431	0.0000	1,826.1969	1,826.1969	0.1186	0.0975	1,858.2013

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1,821.19	1,821.19	1821.19	5,316,970	5,316,970
Total	1,821.19	1,821.19	1,821.19	5,316,970	5,316,970

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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.516022	0.055984	0.185115	0.140509	0.032838	0.007379	0.013399	0.013498	0.000737	0.000476	0.028833	0.001070	0.004141

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	193.7048	193.7048	0.0179	2.1600e-003	194.7962
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	193.7048	193.7048	0.0179	2.1600e-003	194.7962
NaturalGas Mitigated	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	9.7784	9.7784	1.9000e-004	1.8000e-004	9.8365
NaturalGas Unmitigated	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	9.7784	9.7784	1.9000e-004	1.8000e-004	9.8365

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					
Unrefrigerated Warehouse-No Rail	183240	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	9.7784	9.7784	1.9000e-004	1.8000e-004	9.8365
Total		**9.9000e-004**	**8.9800e-003**	**7.5500e-003**	**5.0000e-005**		**6.8000e-004**	**6.8000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**9.7784**	**9.7784**	**1.9000e-004**	**1.8000e-004**	**9.8365**

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					
Unrefrigerated Warehouse-No Rail	183240	9.9000e-004	8.9800e-003	7.5500e-003	5.0000e-005		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	9.7784	9.7784	1.9000e-004	1.8000e-004	9.8365
Total		**9.9000e-004**	**8.9800e-003**	**7.5500e-003**	**5.0000e-005**		**6.8000e-004**	**6.8000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**9.7784**	**9.7784**	**1.9000e-004**	**1.8000e-004**	**9.8365**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	1.19293e+006	193.7048	0.0179	2.1600e-003	194.7962
Total		**193.7048**	**0.0179**	**2.1600e-003**	**194.7962**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	1.19293e+006	193.7048	0.0179	2.1600e-003	194.7962
Total		**193.7048**	**0.0179**	**2.1600e-003**	**194.7962**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6342	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003
Unmitigated	1.6342	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003

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	0.1733					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4605					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003
Total	**1.6342**	**3.0000e-005**	**3.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.6800e-003**	**6.6800e-003**	**2.0000e-005**	**0.0000**	**7.1200e-003**

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	0.1733					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4605					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.2000e-004	3.0000e-005	3.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.6800e-003	6.6800e-003	2.0000e-005	0.0000	7.1200e-003
Total	**1.6342**	**3.0000e-005**	**3.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.6800e-003**	**6.6800e-003**	**2.0000e-005**	**0.0000**	**7.1200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	103.4173	2.8249	0.0674	194.1206
Unmitigated	103.4173	2.8249	0.0674	194.1206

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	86.4783 / 0	103.4173	2.8249	0.0674	194.1206
Total		**103.4173**	**2.8249**	**0.0674**	**194.1206**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	86.4783 / 0	103.4173	2.8249	0.0674	194.1206
Total		**103.4173**	**2.8249**	**0.0674**	**194.1206**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	71.3554	4.2170	0.0000	176.7799
Unmitigated	71.3554	4.2170	0.0000	176.7799

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	351.52	71.3554	4.2170	0.0000	176.7799
Total		**71.3554**	**4.2170**	**0.0000**	**176.7799**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	351.52	71.3554	4.2170	0.0000	176.7799
Total		**71.3554**	**4.2170**	**0.0000**	**176.7799**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Valley Oak Depot

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	373.96	1000sqft	8.58	373,960.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2024
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	357.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - project specific info

Construction Phase - No demo phase, project site is vacant

Grading - Project specific info

Vehicle Trips - Project specific info

Construction Off-road Equipment Mitigation - Project specific info

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	30.00
tblGrading	AcresOfGrading	45.00	15.00
tblVehicleTrips	ST_TR	1.74	4.87

tblVehicleTrips	SU_TR	1.74	4.87
tblVehicleTrips	WD_TR	1.74	4.87

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					
2023	2.7231	27.5564	21.6677	0.0513	18.7444	1.2668	20.0112	10.0272	1.1654	11.1926	0.0000	5,077.0560	5,077.0560	1.1963	0.2267	5,160.8781
2024	173.6131	16.4713	21.2242	0.0507	1.7029	0.6375	2.3404	0.4611	0.5998	1.0608	0.0000	5,013.0781	5,013.0781	0.7168	0.2211	5,095.0692
Maximum	**173.6131**	**27.5564**	**21.6677**	**0.0513**	**18.7444**	**1.2668**	**20.0112**	**10.0272**	**1.1654**	**11.1926**	**0.0000**	**5,077.0560**	**5,077.0560**	**1.1963**	**0.2267**	**5,160.8781**

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					
2023	2.7231	27.5564	21.6677	0.0513	8.5163	1.2668	9.7831	4.5338	1.1654	5.6992	0.0000	5,077.0560	5,077.0560	1.1963	0.2267	5,160.8781
2024	173.6131	16.4713	21.2242	0.0507	1.7029	0.6375	2.3404	0.4611	0.5998	1.0608	0.0000	5,013.0781	5,013.0781	0.7168	0.2211	5,095.0692
Maximum	**173.6131**	**27.5564**	**21.6677**	**0.0513**	**8.5163**	**1.2668**	**9.7831**	**4.5338**	**1.1654**	**5.6992**	**0.0000**	**5,077.0560**	**5,077.0560**	**1.1963**	**0.2267**	**5,160.8781**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	50.02	0.00	45.76	52.38	0.00	44.83	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9560	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872
Energy	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132
Mobile	6.8398	7.8907	56.1537	0.1163	11.2334	0.0983	11.3317	2.9976	0.0922	3.0898		11,848.5499	11,848.5499	0.6854	0.5678	12,034.8846
Total	**15.8012**	**7.9403**	**56.2331**	**0.1166**	**11.2334**	**0.1022**	**11.3356**	**2.9976**	**0.0961**	**3.0937**		**11,907.6939**	**11,907.6939**	**0.6868**	**0.5689**	**12,094.3849**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.9560	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872
Energy	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132
Mobile	6.8398	7.8907	56.1537	0.1163	11.2334	0.0983	11.3317	2.9976	0.0922	3.0898		11,848.5499	11,848.5499	0.6854	0.5678	12,034.8846
Total	**15.8012**	**7.9403**	**56.2331**	**0.1166**	**11.2334**	**0.1022**	**11.3356**	**2.9976**	**0.0961**	**3.0937**		**11,907.6939**	**11,907.6939**	**0.6868**	**0.5689**	**12,094.3849**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	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	Site Preparation	Site Preparation	2/1/2023	3/14/2023	5	30	
2	Grading	Grading	3/15/2023	4/11/2023	5	20	
3	Building Construction	Building Construction	4/12/2023	2/27/2024	5	230	
4	Paving	Paving	2/28/2024	3/26/2024	5	20	
5	Architectural Coating	Architectural Coating	3/27/2024	4/23/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 560,940; Non-Residential Outdoor: 186,980; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	157.00	61.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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					
Fugitive Dust					18.5965	0.0000	18.5965	9.9879	0.0000	9.9879			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.308 1	3,687.308 1	1.1926		3,717.121 9
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**18.5965**	**1.2660**	**19.8625**	**9.9879**	**1.1647**	**11.1527**		**3,687.308 1**	**3,687.308 1**	**1.1926**		**3,717.121 9**

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	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
Worker	0.0636	0.0322	0.5199	1.3600e-003	0.1479	7.6000e-004	0.1486	0.0392	7.0000e-004	0.0399		137.1127	137.1127	3.7100e-003	3.3900e-003	138.2166
Total	**0.0636**	**0.0322**	**0.5199**	**1.3600e-003**	**0.1479**	**7.6000e-004**	**0.1486**	**0.0392**	**7.0000e-004**	**0.0399**		**137.1127**	**137.1127**	**3.7100e-003**	**3.3900e-003**	**138.2166**

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.3684	0.0000	8.3684	4.4946	0.0000	4.4946			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.3684**	**1.2660**	**9.6345**	**4.4946**	**1.1647**	**5.6593**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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	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
Worker	0.0636	0.0322	0.5199	1.3600e-003	0.1479	7.6000e-004	0.1486	0.0392	7.0000e-004	0.0399		137.1127	137.1127	3.7100e-003	3.3900e-003	138.2166
Total	**0.0636**	**0.0322**	**0.5199**	**1.3600e-003**	**0.1479**	**7.6000e-004**	**0.1486**	**0.0392**	**7.0000e-004**	**0.0399**		**137.1127**	**137.1127**	**3.7100e-003**	**3.3900e-003**	**138.2166**

3.3 Grading - 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					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	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
Worker	0.0530	0.0269	0.4332	1.1300e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		114.2606	114.2606	3.0900e-003	2.8300e-003	115.1805
Total	**0.0530**	**0.0269**	**0.4332**	**1.1300e-003**	**0.1232**	**6.3000e-004**	**0.1239**	**0.0327**	**5.8000e-004**	**0.0333**		**114.2606**	**114.2606**	**3.0900e-003**	**2.8300e-003**	**115.1805**

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.1872**	**0.7749**	**3.9621**	**1.5411**	**0.7129**	**2.2541**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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	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
Worker	0.0530	0.0269	0.4332	1.1300e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		114.2606	114.2606	3.0900e-003	2.8300e-003	115.1805
Total	**0.0530**	**0.0269**	**0.4332**	**1.1300e-003**	**0.1232**	**6.3000e-004**	**0.1239**	**0.0327**	**5.8000e-004**	**0.0333**		**114.2606**	**114.2606**	**3.0900e-003**	**2.8300e-003**	**115.1805**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0801	2.8115	0.8893	0.0125	0.4132	0.0180	0.4312	0.1190	0.0172	0.1362		1,325.9184	1,325.9184	0.0110	0.1971	1,384.9162
Worker	0.5550	0.2810	4.5344	0.0118	1.2897	6.6200e-003	1.2963	0.3421	6.1000e-003	0.3482		1,195.9277	1,195.9277	0.0323	0.0296	1,205.5558
Total	**0.6351**	**3.0925**	**5.4237**	**0.0243**	**1.7029**	**0.0246**	**1.7276**	**0.4611**	**0.0233**	**0.4844**		**2,521.8460**	**2,521.8460**	**0.0433**	**0.2267**	**2,590.4720**

3.4 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0801	2.8115	0.8893	0.0125	0.4132	0.0180	0.4312	0.1190	0.0172	0.1362		1,325.9184	1,325.9184	0.0110	0.1971	1,384.9162
Worker	0.5550	0.2810	4.5344	0.0118	1.2897	6.6200e-003	1.2963	0.3421	6.1000e-003	0.3482		1,195.9277	1,195.9277	0.0323	0.0296	1,205.5558
Total	**0.6351**	**3.0925**	**5.4237**	**0.0243**	**1.7029**	**0.0246**	**1.7276**	**0.4611**	**0.0233**	**0.4844**		**2,521.8460**	**2,521.8460**	**0.0433**	**0.2267**	**2,590.4720**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0000
Vendor	0.0771	2.7780	0.8640	0.0123	0.4132	0.0179	0.4311	0.1190	0.0171	0.1361		1,300.9951	1,300.9951	0.0106	0.1936	1,358.9591
Worker	0.5161	0.2495	4.1934	0.0114	1.2897	6.2800e-003	1.2960	0.3421	5.7800e-003	0.3479		1,156.3841	1,156.3841	0.0291	0.0275	1,165.3025
Total	**0.5932**	**3.0275**	**5.0574**	**0.0237**	**1.7029**	**0.0242**	**1.7271**	**0.4611**	**0.0229**	**0.4839**		**2,457.3792**	**2,457.3792**	**0.0397**	**0.2211**	**2,524.2615**

3.4 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.698 9	2,555.698 9	0.6044		2,570.807 7
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.698 9**	**2,555.698 9**	**0.6044**		**2,570.807 7**

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	0.0000
Vendor	0.0771	2.7780	0.8640	0.0123	0.4132	0.0179	0.4311	0.1190	0.0171	0.1361		1,300.995 1	1,300.995 1	0.0106	0.1936	1,358.959 1
Worker	0.5161	0.2495	4.1934	0.0114	1.2897	6.2800e-003	1.2960	0.3421	5.7800e-003	0.3479		1,156.384 1	1,156.384 1	0.0291	0.0275	1,165.302 5
Total	**0.5932**	**3.0275**	**5.0574**	**0.0237**	**1.7029**	**0.0242**	**1.7271**	**0.4611**	**0.0229**	**0.4839**		**2,457.379 2**	**2,457.379 2**	**0.0397**	**0.2211**	**2,524.261 5**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**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**

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	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
Worker	0.0493	0.0238	0.4007	1.0900e-003	0.1232	6.0000e-004	0.1238	0.0327	5.5000e-004	0.0332		110.4826	110.4826	2.7800e-003	2.6300e-003	111.3346
Total	**0.0493**	**0.0238**	**0.4007**	**1.0900e-003**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.5000e-004**	**0.0332**		**110.4826**	**110.4826**	**2.7800e-003**	**2.6300e-003**	**111.3346**

3.5 Paving - 2024

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

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	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
Worker	0.0493	0.0238	0.4007	1.0900e-003	0.1232	6.0000e-004	0.1238	0.0327	5.5000e-004	0.0332		110.4826	110.4826	2.7800e-003	2.6300e-003	111.3346
Total	**0.0493**	**0.0238**	**0.4007**	**1.0900e-003**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.5000e-004**	**0.0332**		**110.4826**	**110.4826**	**2.7800e-003**	**2.6300e-003**	**111.3346**

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	173.3305					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	**173.5112**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1019	0.0493	0.8280	2.2600e-003	0.2547	1.2400e-003	0.2559	0.0676	1.1400e-003	0.0687		228.3306	228.3306	5.7500e-003	5.4300e-003	230.0916
Total	**0.1019**	**0.0493**	**0.8280**	**2.2600e-003**	**0.2547**	**1.2400e-003**	**0.2559**	**0.0676**	**1.1400e-003**	**0.0687**		**228.3306**	**228.3306**	**5.7500e-003**	**5.4300e-003**	**230.0916**

3.6 Architectural Coating - 2024

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	173.3305					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	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**173.5112**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1019	0.0493	0.8280	2.2600e-003	0.2547	1.2400e-003	0.2559	0.0676	1.1400e-003	0.0687		228.3306	228.3306	5.7500e-003	5.4300e-003	230.0916
Total	**0.1019**	**0.0493**	**0.8280**	**2.2600e-003**	**0.2547**	**1.2400e-003**	**0.2559**	**0.0676**	**1.1400e-003**	**0.0687**		**228.3306**	**228.3306**	**5.7500e-003**	**5.4300e-003**	**230.0916**

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	6.8398	7.8907	56.1537	0.1163	11.2334	0.0983	11.3317	2.9976	0.0922	3.0898		11,848.5499	11,848.5499	0.6854	0.5678	12,034.8846
Unmitigated	6.8398	7.8907	56.1537	0.1163	11.2334	0.0983	11.3317	2.9976	0.0922	3.0898		11,848.5499	11,848.5499	0.6854	0.5678	12,034.8846

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1,821.19	1,821.19	1821.19	5,316,970	5,316,970
Total	1,821.19	1,821.19	1,821.19	5,316,970	5,316,970

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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.516022	0.055984	0.185115	0.140509	0.032838	0.007379	0.013399	0.013498	0.000737	0.000476	0.028833	0.001070	0.004141

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	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132
NaturalGas Unmitigated	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132

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					
Unrefrigerated Warehouse-No Rail	502.028	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132
Total		**5.4100e-003**	**0.0492**	**0.0413**	**3.0000e-004**		**3.7400e-003**	**3.7400e-003**		**3.7400e-003**	**3.7400e-003**		**59.0622**	**59.0622**	**1.1300e-003**	**1.0800e-003**	**59.4132**

5.2 Energy by Land Use - NaturalGas

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					
Unrefrigerated Warehouse-No Rail	0.502028	5.4100e-003	0.0492	0.0413	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003		59.0622	59.0622	1.1300e-003	1.0800e-003	59.4132
Total		**5.4100e-003**	**0.0492**	**0.0413**	**3.0000e-004**		**3.7400e-003**	**3.7400e-003**		**3.7400e-003**	**3.7400e-003**		**59.0622**	**59.0622**	**1.1300e-003**	**1.0800e-003**	**59.4132**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.9560	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872
Unmitigated	8.9560	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9498					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.0027					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5200e-003	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872
Total	**8.9560**	**3.5000e-004**	**0.0381**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0818**	**0.0818**	**2.1000e-004**		**0.0872**

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	0.9498					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.0027					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5200e-003	3.5000e-004	0.0381	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0818	0.0818	2.1000e-004		0.0872
Total	**8.9560**	**3.5000e-004**	**0.0381**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0818**	**0.0818**	**2.1000e-004**		**0.0872**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT 2

Traffic Impact Analysis

DEPOT PARK 2

APPLICATION NUMBER TS22-004

DRAFT REPORT

JUNE 20. 2022

PREPARED FOR:

City of Sacramento

DKS

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INTRODUCTION

This transportation analysis addresses transportation and circulation conditions associated with a proposed development project (Depot Park 2) within the Army Depot Business Park in the City of Sacramento. Depot Park 2 (Valley Oaks Logistics Center II @ Depot Park) consists of two warehouse buildings located directly west of the recently constructed Valley Oaks Logistics Center (the baseline project).

The analysis focuses on the project's relationship to the City street system, including nearby intersections, the proposed access point, and on-site circulation. The analysis includes consideration of motorized vehicle traffic impacts on roadway capacity, construction impacts, and potential impacts to transit service, bicyclists, and pedestrians. Quantitative transportation analyses have been conducted for the following scenarios:

- Existing Conditions (2022)
- Baseline Conditions (assumes full occupancy of the recently constructed Valley Oaks Logistics Center)
- Baseline Plus Project conditions.

PROJECT DESCRIPTION

As illustrated in **Figure 1**, the proposed project site (approximately 21.25 acres) is located within Depot Park, a former US Army support facility in South Sacramento. The site is located at the southwest corner of Midway Avenue and Foodlink Street, and is zoned M-2 (heavy industrial). The site is located directly west of the recently built Valley Oaks Logistics Center (the baseline project). Surrounding parcels consist of industrial and commercial uses.

As illustrated in **Figure 2**, the proposed project includes two warehouse buildings totaling 373,960 square feet. Building A will be 200,560 square feet (812' long by 247' wide), rear loaded. Building B will be 173,400 square feet (598' long by 290' wide), front loaded. The buildings are designed to offer a high level of flexibility regarding tenant divisibility. The proposed building A has 52 total dock doors and can be demised for one or up to four tenants and will have 188 auto parking spaces and 28 trailer parking spaces. The proposed building B has 36 total dock doors and can be demised for one or up to four tenants and will have 190 auto parking spaces and no trailer parking stalls. Construction type for both buildings is concrete tilt-up, with 36' clear height, ESFR Sprinkler system, and a hybrid steel roof structure, with a wood deck and membrane roof system.[1]

[1] Buzz Oates / Link Industrial Properties, Valley Oaks Logistics Center II @ Depot Park, 2022.

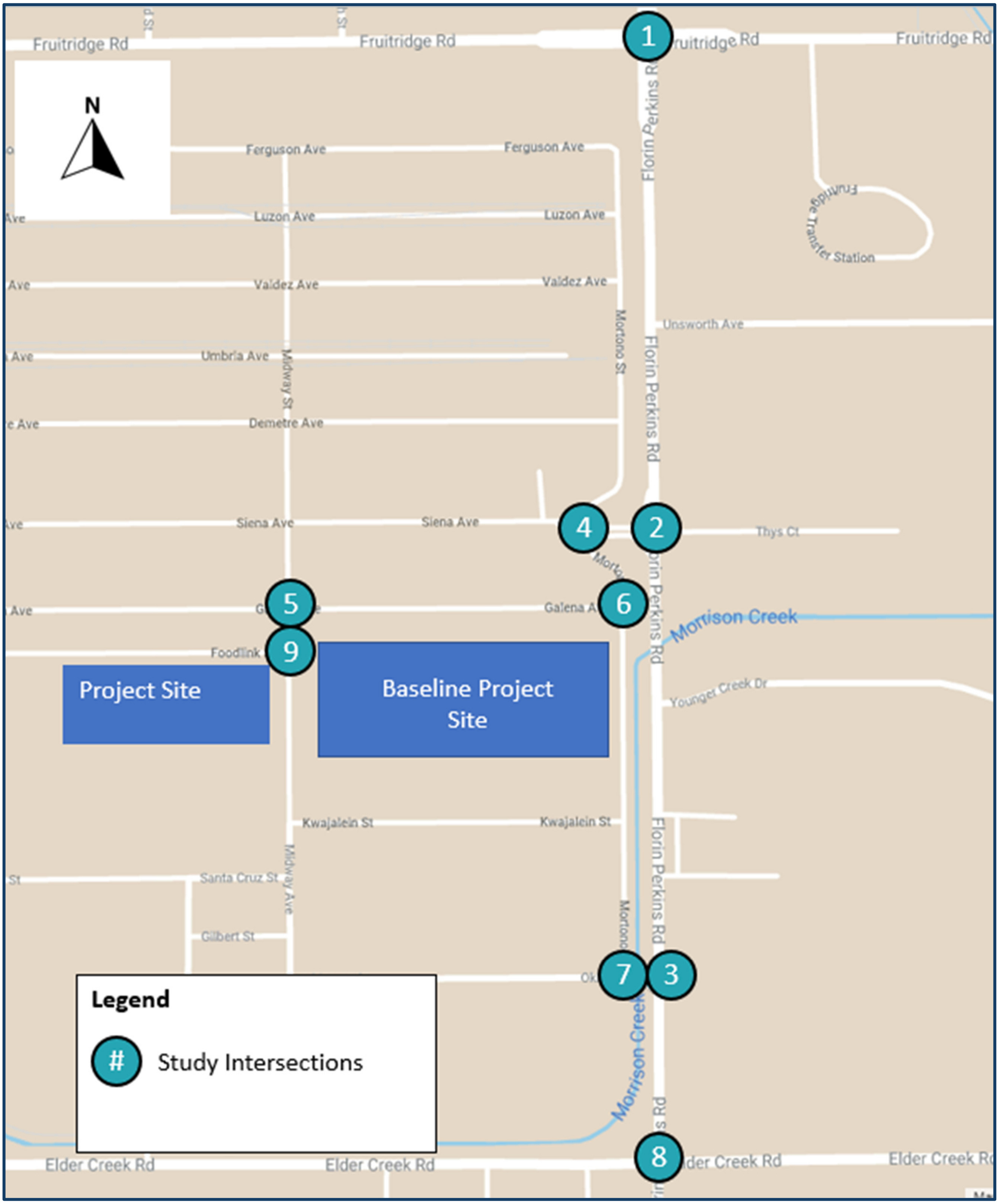
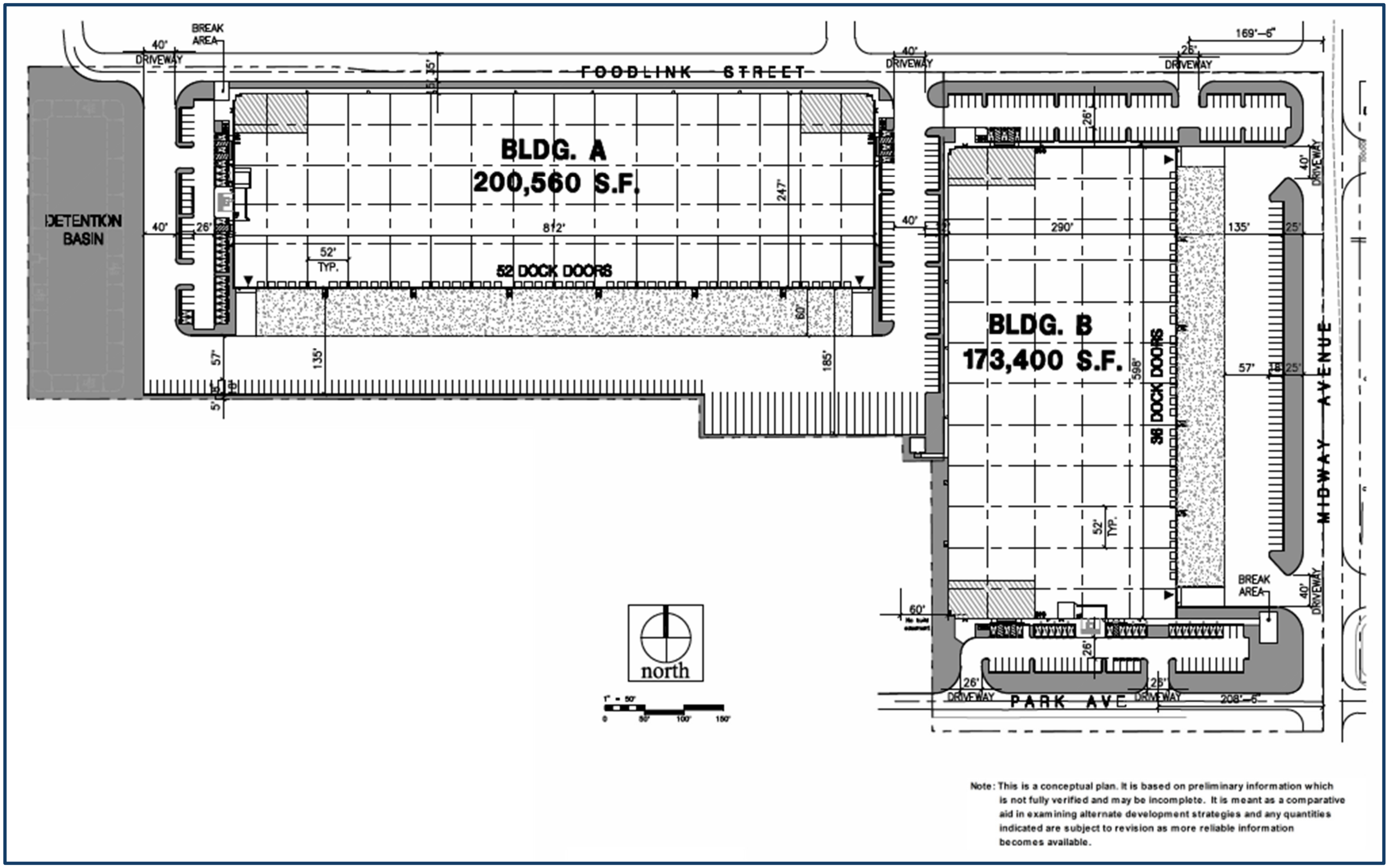


FIGURE 1: SITE LOCATION AND STUDY AREA



Source: Conceptual Site Plan, Valley Oaks Logistics Center II @ Depot Park, Buzz Oates, May 12, 2022.

FIGURE 2: SITE PLAN

EXISTING PEDESTRIAN SYSTEM

The pedestrian system in the site vicinity consists of sidewalks along Florin Perkins Road, Fruitridge Road, Power Inn Road and Elder Creek Road. Among the internal roads, parts of Okinawa Street, Midway Avenue and Santa Cruz Street have sidewalks.

EXISTING BICYCLE SYSTEM

Source: City of Sacramento Bikeway User Map, Bicycle Master Plan amended on Aug 14, 2018,

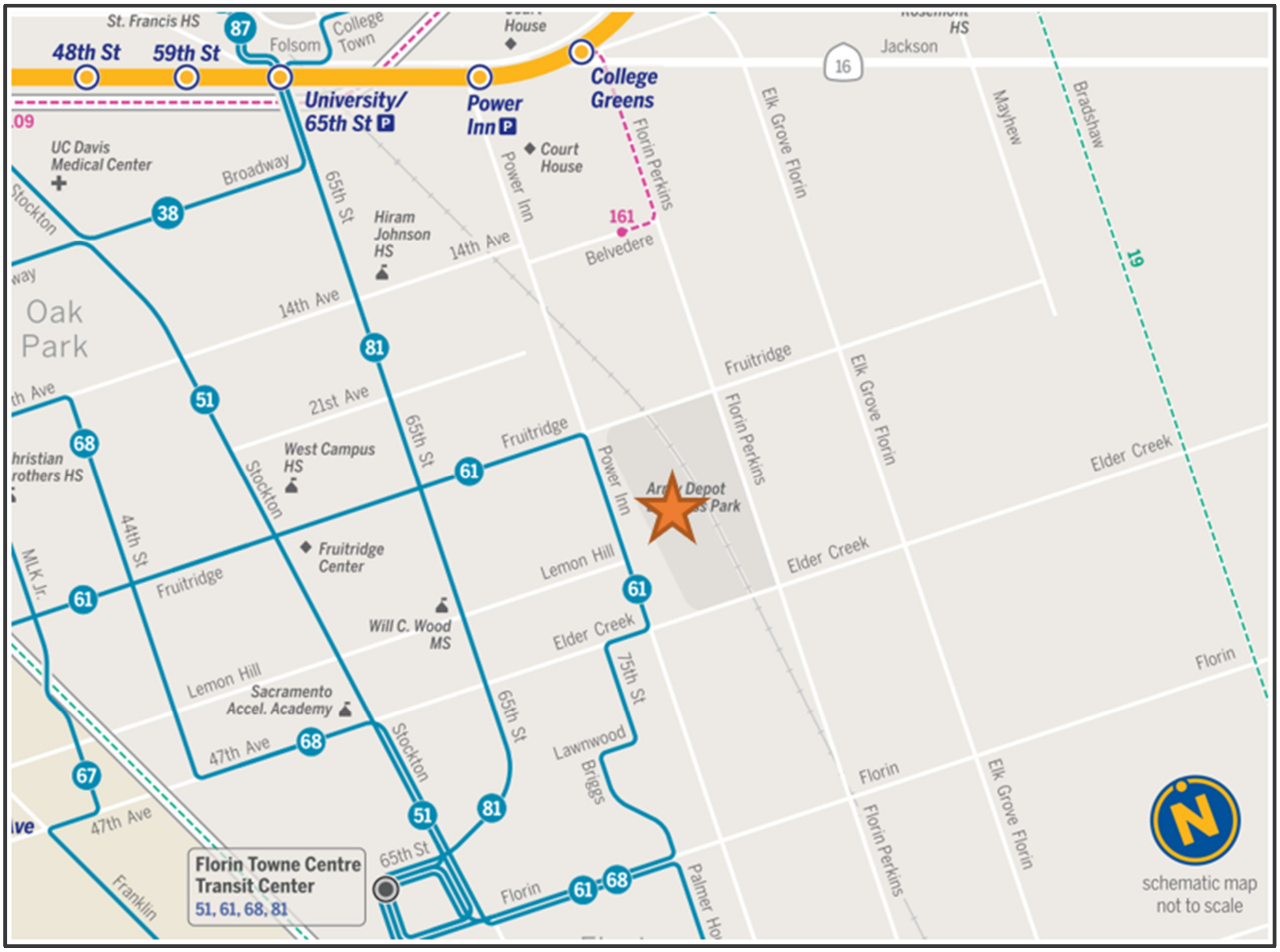
Figure 3 illustrates the existing bicycle system in the site vicinity. There are existing bike lanes along both sides of Fruitridge Road, Power Inn Road and Florin Perkins Road in the site vicinity.

Source: City of Sacramento Bikeway User Map, Bicycle Master Plan amended on Aug 14, 2018,

FIGURE 3: BIKEWAYS

TRANSIT SYSTEM

Regional Transit (RT) service in the site vicinity is illustrated in **Figure 4.**



Source: Sacramento Regional Transit Bus & Light Rail System Map

FIGURE 4: REGIONAL TRANSIT MAP

There is limited transit service in the vicinity of the project site. Bus Route 61 (Fruitridge) operates along Fruitridge Road and along Power Inn Road, west of the project site. Bus Route 81 operates on 65th Street about 1.8 miles north of the project site. RT's Gold Line Light Rail service is located about 2 miles north of the site.

STUDY AREA

The study facilities were determined as the routes that connect the project site to eastbound and westbound US 50 as well as SR-99. The following intersections are included in the study area and shown in Figure 1:

1. Florin Perkins Road & Fruitridge Road
2. Florin Perkins Road & Siena Avenue/Thys Court
3. Florin Perkins Road & Okinawa Street
4. Siena Avenue & Mortono Street
5. Midway Avenue/Midway Street & Galena Avenue
6. Mortono Street & Galena Avenue
7. Mortono Street & Okinawa Street
8. Elder Creek Road & Florin Perkins Road
9. Midway Avenue & Foodlink Street

EXISTING INTERSECTION GEOMETRY

Existing intersection geometry (number of approach lanes and traffic control) is illustrated in **Figure 5.** Many of the local Depot Park intersections do not have intersection traffic control signs, and were analyzed as all-way yield intersections.

DATA COLLECTION

Peak period intersection turning movement counts at intersections 1 through 8 were conducted for the AM weekday peak period (7:00 to 9:00 AM) and the PM weekday peak period (4:00 to 6:00 PM) on Tuesday, March 24, 2020. Volumes at intersection 9 were estimated based upon volumes at the adjacent intersection and limited access in the vicinity.

TRAFFIC VOLUME ADJUSTMENT BASED ON COVID RELATED TRAVEL REDUCTION

The March 2020 traffic counts were adjusted to address the impact of reduced travel demand volumes due to the COVID-19 pandemic and shelter-in-place order in California. Traffic counts from 2019 and 2035/2040 traffic volume forecasts from the 2040 General Plan were available for Southbound Florin Perkins Road (North of Fruitridge Road). The 2019 and 2035/2040 volumes were used to adjust (increase) the 2020 counts.

Figure 6 illustrates the peak hour traffic volumes used in the analysis. Detailed traffic count data are included in appendix A and adjusted traffic count calculations are included in the technical appendix B.

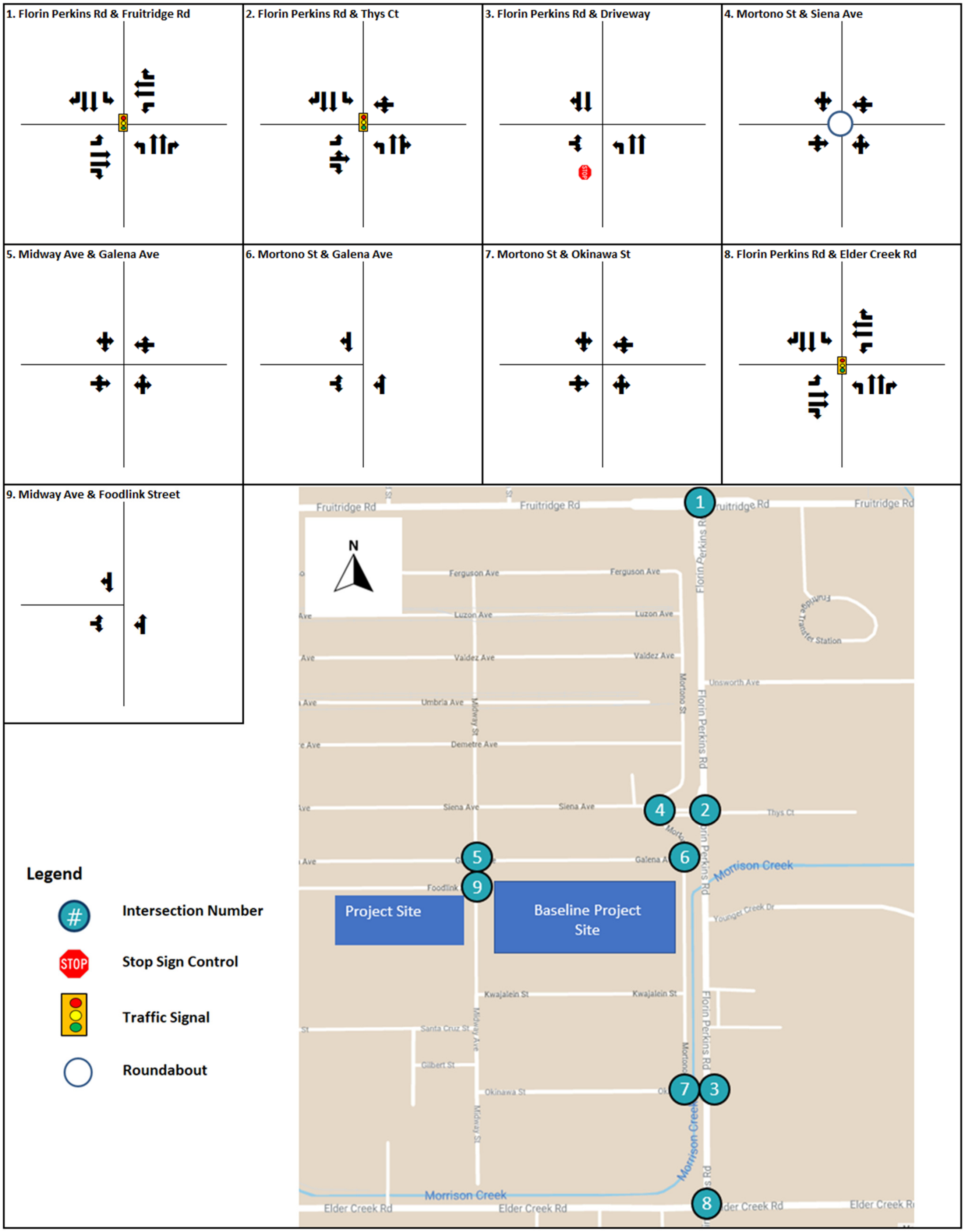


FIGURE 5: INTERSECTION LANE CONFIGURATION

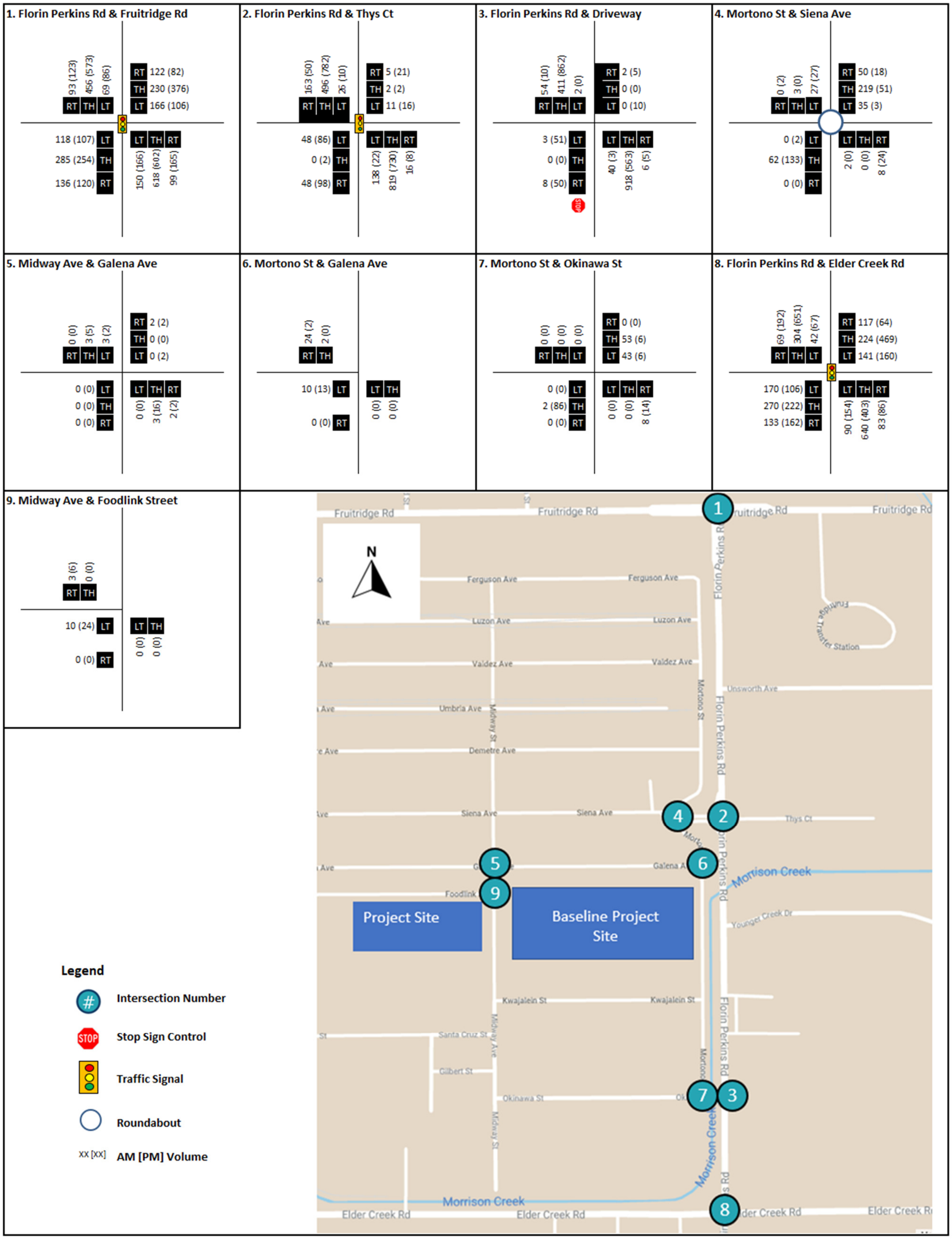


FIGURE 6: ADJUSTED 2022 PEAK HOUR TRAFFIC VOLUMES

REGULATORY SETTING

CITY OF SACRAMENTO

The Mobility Element of the Sacramento 2035 General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following level of service policy has been used in this study, as amended on January 23, 2018:

> **Policy M 1.2.2 Level of Service (LOS) Standard.** The City shall implement a flexible context sensitive Level of Service (LOS) standard, and will measure traffic operations against the vehicle LOS thresholds established in this policy. The City will measure Vehicle LOS based on the methodology contained in the latest version of the Highway Capacity Manual (HCM) published by the Transportation Research Board. The City's specific vehicle LOS thresholds have been defined based on community values with respect to modal priorities, land use context, economic development, and environmental resources and constraints. As such, the City has established variable LOS thresholds appropriate for the unique characteristics of the City's diverse neighborhoods and communities. The City will strive to operate the roadway network at LOS D or better for vehicles during typical weekday conditions, including AM and PM peak hour with the following exceptions described below and mapped on Figure M-1:
>
> A. Core Area (Central City Community Plan Area) - LOS F allowed
>
> B. Priority Investment Areas – LOS F allowed
>
> C. LOS E Roadways - LOS E is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values.
>
> - 65th Street: Elvas Avenue to 14th Avenue
> - Arden Way: Royal Oaks Drive to I-80 Business
> - Broadway: Stockton Boulevard to 65th Street
> - College Town Drive: Hornet Drive to La Rivera Drive
> - El Camino Avenue: I-80 Business to Howe Avenue
> - Elder Creek Road: Stockton Boulevard to Florin Perkins Road
> - Elder Creek Road: South Watt Avenue to Hedge Avenue
> - Fruitridge Road: Franklin Boulevard to SR 99
> - Fruitridge Road: SR 99 to 44th Street
> - Howe Avenue: El Camino Avenue to Auburn Boulevard
> - Sutterville Road: Riverside Boulevard to Freeport Boulevard
>
> LOS E is also allowed on all roadway segments and associated intersections located within 1/2-mile walking distance of light rail stations.
>
> D. Other LOS F Roadways - LOS F is allowed for the following roadways because expansion of the roadways would cause undesirable impacts or conflict with other community values.
>
> - 47th Avenue: State Route 99 to Stockton Boulevard
> - Arcade Boulevard: Marysville Boulevard to Roseville Road
> - Carlson Drive: Moddison Avenue to H Street
> - Duckhorn Drive: Arena Boulevard to San Juan Road
> - El Camino Avenue: Grove Avenue to Del Paso Boulevard

- Elvas Avenue: J Street to Folsom Boulevard
- Elvas Avenue/56th Street: 52nd Street to H Street
- Florin Road: Havenside Drive to Interstate 5
- Florin Road: Freeport Boulevard to Franklin Boulevard
- Florin Road: Interstate 5 to Freeport Boulevard
- Folsom Boulevard: 47th Street to 65th Street
- Folsom Boulevard: Howe Avenue to Jackson Highway
- Folsom Boulevard: US 50 to Howe Avenue
- Freeport Boulevard: Sutterville Road (North) to Sutterville Road (South)
- Freeport Boulevard: 21st Street to Sutterville Road (North)
- Freeport Boulevard: Broadway to 21st Street
- Garden Highway: Truxel Road to Northgate Boulevard
- H Street: Alhambra Boulevard to 45th Street
- H Street 45th: Street to Carlson Drive
- Hornet Drive: US 50 Westbound On-ramp to Folsom Boulevard
- Howe Avenue: US 50 to Fair Oaks Boulevard
- Howe Avenue: US 50 to 14th Avenue
- Raley Boulevard: Bell Avenue to Interstate 80
- San Juan Road: Duckhorn Drive to Truxel Road
- South Watt Avenue: US 50 to Kiefer Boulevard
- West El Camino Avenue: Northgate Boulevard to Grove Avenue

E. If maintaining the above LOS standards would, in the City's judgment be infeasible and/or conflict with the achievement of other goals, LOS E or F conditions may be accepted provided that provisions are made to improve the overall system, promote non-vehicular transportation, and/or implement vehicle trip reduction measures as part of a development project or a city-initiated project. Additionally, the City shall not expand the physical capacity of the planned roadway network to accommodate a project beyond that identified in Figure M4 and M4a (2035 General Plan Roadway Classification and Lanes).

In accordance with the City policies, the applicable operating standard for study area intersections 1 through 7 and 9 is LOS D. The applicable operating standard for study area intersection 8 (Florin Perkins Road & Elder Creek Road) is LOS E.

INTERSECTION ANALYSIS AND METHODOLOGY

Synchro 11 software was used to analyze intersection delay at all intersections, and queue lengths at signalized intersections. **Table 1** presents the level of service criteria for intersections in accordance with the HCM 6 methodology. In accordance with City of Sacramento policy, at unsignalized intersections, the intersection average delay / LOS is used to determine conformity with City policies.

TABLE 1: INTERSECTION LEVEL OF SERVICE

INTERSECTION LEVEL OF SERVICE CRITERIA		
LEVEL OF SERVICE (LOS)	TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	$\leq$ 10	$\leq$ 10
B	> 10 and $\leq$ 20	> 10 and $\leq$ 15
C	> 20 and $\leq$ 35	> 15 and $\leq$ 25
D	> 35 and $\leq$ 55	> 25 and $\leq$ 35
E	> 55 and $\leq$ 80	> 35 and $\leq$ 50
F	> 80	> 50

Source: Highway Capacity Manual 6th Edition, Transportation Research Board.

RESULTS OF EXISTING CONDITION ANALYSIS

Existing condition intersection analysis results are summarized in **Table 2** and **Table 3**. All of the intersections meet the LOS goals. The signalized intersection queues do not extend into adjacent intersections. Appendix C contains the Level of service results and Appendix D contains the queue results.

TABLE 2: EXISTING INTERSECTION OPERATIONS ANALYSIS

EXISTING INTERSECTION OPERATING CONDITIONS				
INTERSECTION	A.M. PEAK HOUR		P.M. PEAK HOUR	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
1. Florin Perkins Road & Fruitridge Road	33.2	C	33.6	C
2. Florin Perkins Road & Siena Avenue/Thys Court	38.4	D	38.2	D
3. Florin Perkins Road & Okinawa Street	0.4	A	2.0	A
4. Siena Avenue & Mortono Street	3.6	A	3.2	A
5. Midway Avenue / Midway Street & Galena Avenue	6.8	A	7.0	A
6. Mortono Street & Galena Avenue	6.7	A	7.1	A
7. Mortono Street & Okinawa Street	7.5	A	7.3	A
8. Elder Creek Road & Florin Perkins Road	39.5	D	44.2	D

EXISTING INTERSECTION OPERATING CONDITIONS				
INTERSECTION	A.M. PEAK HOUR		P.M. PEAK HOUR	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
9. Foodlink Street & Midway Avenue	7.0	A	7.1	A

TABLE 3: EXISTING INTERSECTION QUEUE ANALYSIS

EXISTING INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
1. Florin Perkins Road & Fruitridge Road	EBL	200	147	146
	EBT	>700	151	141
	EBR	400	55	50
	WBL	200	193	145
	WBT	>700	120	206
	WBR	400	43	15
	NBL	200	185	203
	NBT	>700	331	342
	NBR	400	91	137
	SBL	200	96	122
	SBT	>700	199	271
	SBR	400	12	42

EXISTING INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
2. Florin Perkins Road & Siena Avenue / Thys Court	EBL	170	80	241
	EBT	170	80	248
	EBR	170	9	90
	WBT	>700	32	33
	NBL	200	327	81
	NBT	>700	237	155
	SBL	200	26	15
	SBT	>700	235	429
	SBR	400	273	84
8. Florin Perkins Road & Elder Creek Road	EBL	350	297	149
	EBT	700	141	121
	EBR	450	54	58
	WBL	200	173	205
	WBT	700	122	240
	WBR	200	55	0
	NBL	200	117	190
	NBT	700	303	192
	NBR	100	17	27
	SBL	150	82	99
	SBT	700	21	442
	SBR	200	0	146

BASELINE PROJECT

The baseline project is the Valley Oaks Logistics Center, recently constructed immediately east of the project across Midway Avenue. The baseline project is a cross-dock warehouse of approximately 477,120 square feet with capability of accommodating a number of tenants and uses. The baseline project's traffic operations were analyzed in the Depot Park Logistics Facility Traffic Impact Analysis, Final Report, DKS Associates, June 1, 2020.

BASELINE PROJECT TRIP GENERATION

As contained in the prior traffic impact analysis, the baseline project's trip generation is summarized in **Table 4**.

TABLE 4: BASELINE PROJECT TRIP GENERATION

USE	ITE CODE	SIZE (1,000 SQUARE FEET)	VEHICLE TRIPS GENERATED (PCE)						
			WEEKDAY	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
GENERAL LIGHT INDUSTRIAL	110	477.120	2,367	294	40	334	39	262	301

Source: Depot Park Logistics Facility Traffic Impact Analysis, Final Report, DKS Associates, June 1, 2020.

BASELINE INTERSECTION GEOMETRY

The baseline intersection geometry is the same as the existing intersection geometry, illustrated in Figure 5.

BASELINE TRAFFIC VOLUMES

Figure 7 illustrates the baseline peak hour traffic volumes.

RESULTS OF BASELINE CONDITIONS ANALYSIS

Baseline condition intersection analysis results are summarized in **Table 5** and **Table 6**. All of the intersections meet the LOS goals. The signalized intersection queues do not extend into adjacent intersections, with the exception of Intersection 2. At this location, the eastbound queues in the PM peak hour may extend into the adjacent roundabout (Intersection 3). Appendix C contains the Level of service results and Appendix D contains the queue results.

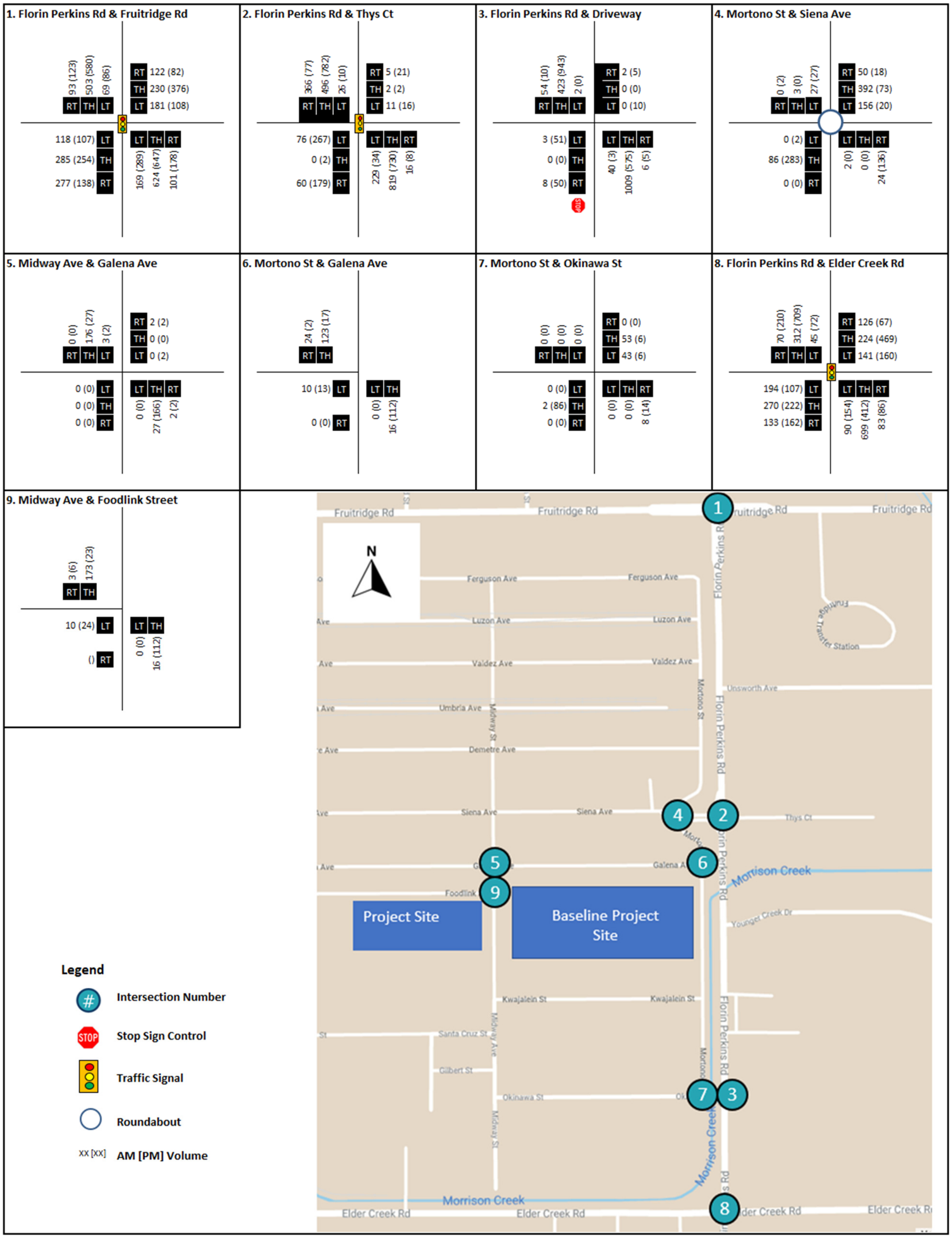


FIGURE 7: BASELINE PEAK HOUR TRAFFIC VOLUMES

TABLE 5: BASELINE INTERSECTION OPERATIONS ANALYSIS

BASELINE INTERSECTION OPERATING CONDITIONS				
INTERSECTION	A.M. PEAK HOUR		P.M. PEAK HOUR	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
1. Florin Perkins Road & Fruitridge Road	36.0	D	31.4	C
2. Florin Perkins Road & Siena Avenue/Thys Court	42.1	D	37.6	D
3. Florin Perkins Road & Okinawa Street	0.3	A	2.3	A
4. Siena Avenue & Mortono Street	6.0	A	4.5	A
5. Midway Avenue / Midway Street & Galena Avenue	7.9	A	7.8	A
6. Mortono Street & Galena Avenue	7.6	A	7.5	A
7. Mortono Street & Okinawa Street	7.5	A	7.3	A
8. Elder Creek Road & Florin Perkins Road	41.1	D	45.1	D
9. Foodlink Street & Midway Avenue	7.9	A	7.6	A

TABLE 6: BASELINE INTERSECTION QUEUE ANALYSIS

BASELINE INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
1. Florin Perkins Road & Fruitridge Road	EBL	200	147	146
	EBT	>700	150	141
	EBR	400	75	56
	WBL	200	210	146
	WBT	>700	118	206
	WBR	400	43	15
	NBL	200	197	358
	NBT	>700	334	366
	NBR	400	89	114
	SBL	200	96	122
	SBT	>700	227	291
	SBR	400	13	45
2. Florin Perkins Road & Siena Avenue / Thys Court	EBL	170	66	174
	EBT	170	67	178
	EBR	170	0	60
	WBT	>700	32	56
	NBL	200	265	66
	NBT	>700	258	166
	SBL	200	30	18
	SBT	>700	235	427
	SBR	400	202	78

BASELINE INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
8. Florin Perkins Road & Elder Creek Road	EBL	350	258	148
	EBT	700	141	121
	EBR	450	54	58
	WBL	200	173	205
	WBT	700	122	240
	WBR	200	54	0
	NBL	200	117	190
	NBT	700	280	187
	NBR	100	17	27
	SBL	150	79	82
	SBT	700	18	398
	SBR	200	0	181

PROJECT TRAVEL CHARACTERISTICS

TRIP GENERATION

Vehicular trip generation estimates of the project are based upon information published by the Institute of Transportation Engineers (ITE). Specifically, the following source has been utilized:

- ITE Trip Generation Manual 11th Edition, Version 6.0.1, May 2022.

In the calculation of trip generation of the project, no adjustments for mode choice were made, as the mode choice near the site is predominately private automobile and truck use. The primary focus of this analysis is to determine the total number of car and truck trips expected to be generated by this proposed use. Various manufacturing, industrial, and warehouse uses are permitted in the M-2 zone. Such uses could be accommodated within the proposed project. Several representative permitted land uses are included in the ITE data:

- Code 110 – General Light Industrial
- Code 130 – Industrial Park

- Code 140 – Manufacturing
- Code 150 – Warehousing
- Code 154 – High-Cube Transload and Short-Term Storage Warehouse
- Code 155 – High-Cube Fulfillment Center Warehouse
- Code 156 – High-Cube Parcel Hub Warehouse
- Code 157 – High-Cube Cold Storage Warehouse

Table 7 summarizes trip generation estimates for these land use types.

TABLE 7: VEHICULAR TRIP GENERATION BY CLASSIFICATION

USE	ITE CODE	SIZE (1,000 SQUARE FEET)	VEHICLE TRIPS GENERATED						
			WEEKDAY	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
GENERAL LIGHT INDUSTRIAL	110	373.960	1,821	244	33	277	34	209	243
INDUSTRIAL PARK	130		1,260	103	24	127	28	99	127
MANUFACTURING	140		1,776	193	61	254	86	191	277
WAREHOUSING	150		639	49	15	64	19	48	67
HIGH-CUBE TRANSLOAD AND SHORT-TERM STORAGE WAREHOUSE	154		524	23	7	30	10	27	37
HIGH-CUBE FULFILLMENT CENTER WAREHOUSE	155		677	45	11	56	23	37	60
HIGH-CUBE PARCEL HUB WAREHOUSE	156		1,731	131	131	262	162	77	239
HIGH-CUBE COLD STORAGE WAREHOUSE	157		793	-	-	41	-	-	45

Source: DKS Associates, 2022; ITE Trip Generation Manual 11th Edition, Version 6.0.1, May 2022.

Based upon the latest available data, the General Light Industrial (Code 110) and Manufacturing (Code 140) uses generate the highest traffic volumes. As the transportation will focus on peak weekday commuter period intersection operations, and for consistency with the prior analysis, the

General Light Industrial (Code 110) was identified as the use for analysis as it provides conservative peak hour and directional estimates. **Table 8** summarizes the recommended trip generation estimates.

TABLE 8: RECOMMENDED PROJECT TRIP GENERATION

USE	ITE CODE	SIZE (1,000 SQUARE FEET)	VEHICLE TRIPS GENERATED (PCE)						
			WEEKDAY	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
GENERAL LIGHT INDUSTRIAL	110	373.960	1,821	244	33	277	34	209	243

Source: DKS Associates, 2022; ITE Trip Generation Manual 11th Edition, Version 6.0.1, May 2022.

TRIP DISTRIBUTION

The distribution of trips associated with the proposed project was derived from the regional SACSIM travel model, observations of travel patterns near the site, and knowledge of the proposed access locations associated with the site.

Trip distribution varies by time of day. **Figure 8** illustrates the trip distribution.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, thresholds of significance adopted by the governing jurisdictions in applicable general plans and previous environmental documents, and professional judgement, a significant impact would occur if the proposed project would:

INTERSECTIONS – CITY OF SACRAMENTO

- The traffic generated by the project degrades LOS from an acceptable LOS (without the project) to an unacceptable LOS (with the project),
- The LOS (without project) is unacceptable and project generated traffic increases the average vehicle delay by 5 seconds or more.
- Note: General Plan Mobility Element Policy M 1.2.2 sets forth definitions for what is considered an acceptable LOS. As previously discussed, Policy M 1.2.2 applies to the study area roadway facilities as follows:

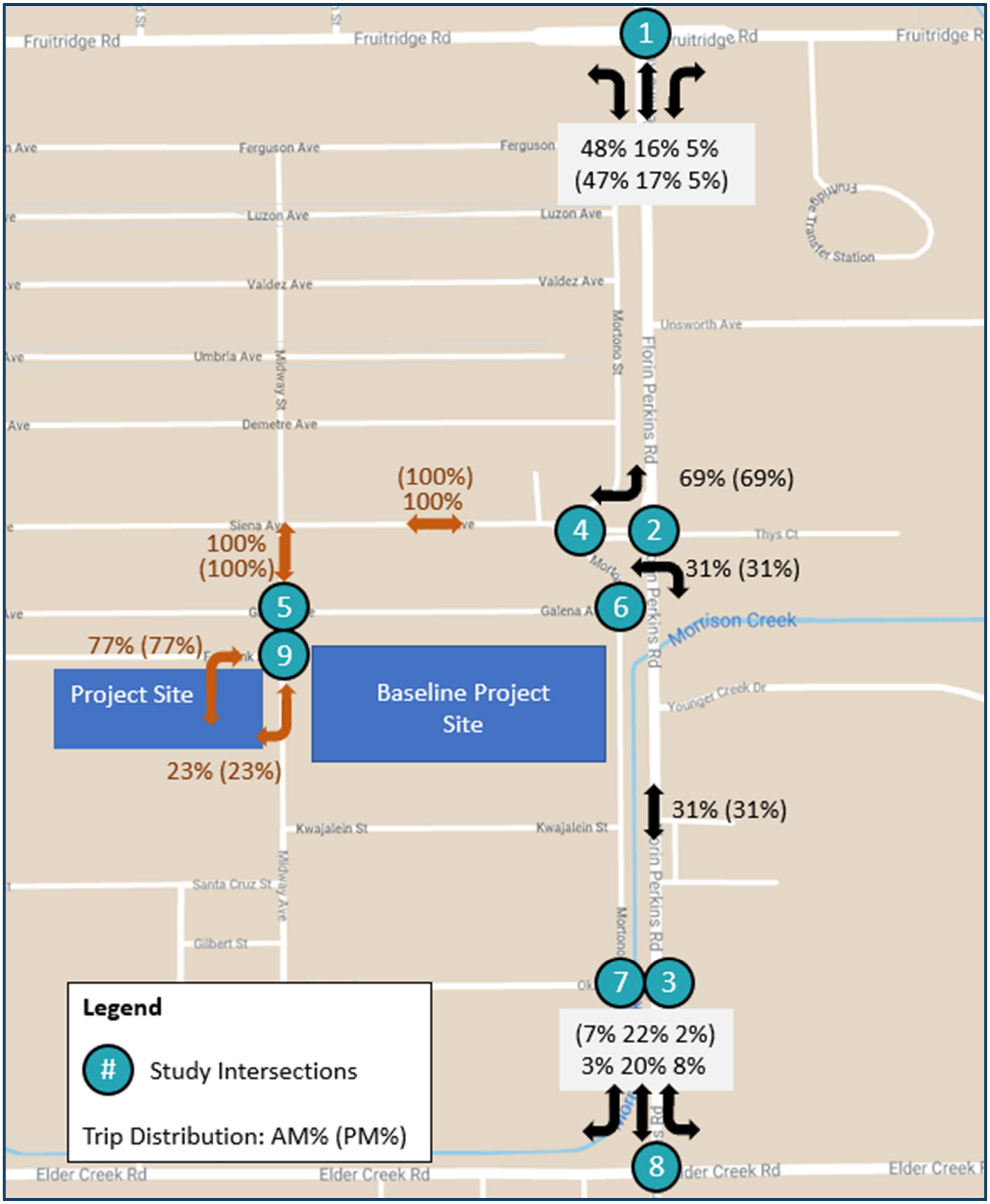


FIGURE 8: PROJECT TRIP DISTRIBUTION

- Intersections 1 through 7 and 9 - LOS A-D is always to be maintained; provided, LOS E or F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City initiated project.
- Intersection 8 - LOS A-E is always to be maintained; provided, LOS F may be acceptable if improvements are made to the overall transportation system and/or non-vehicular transportation and transit are promoted as part of the project or a City initiated project.

TRANSIT

- Adversely affect public transit operations,
- Fail to adequately provide access to transit.

BICYCLE FACILITIES

- Adversely affect existing or planned bicycle facilities,
- Fail to adequately provide for access by bicycle.

PEDESTRIAN CIRCULATION

- Adversely affect existing or planned pedestrian facilities,
- Fail to adequately provide for access by pedestrians.

CONSTRUCTION-RELATED TRAFFIC IMPACTS

- Degrade an intersection or roadway to an unacceptable level,
- Cause inconveniences to motorists due to prolonged road closures, or
- Result in increased frequency of potential conflicts between vehicles, pedestrians, and bicyclists.

BASELINE PLUS PROJECT TRAFFIC CONDITIONS

BASELINE PLUS PROJECT INTERSECTION GEOMETRY

The baseline plus project intersection geometry is the same as the existing intersection geometry, illustrated in Figure 5.

BASELINE PLUS PROJECT TRAFFIC VOLUMES

Figure 9 illustrates the baseline plus project peak hour traffic volumes.

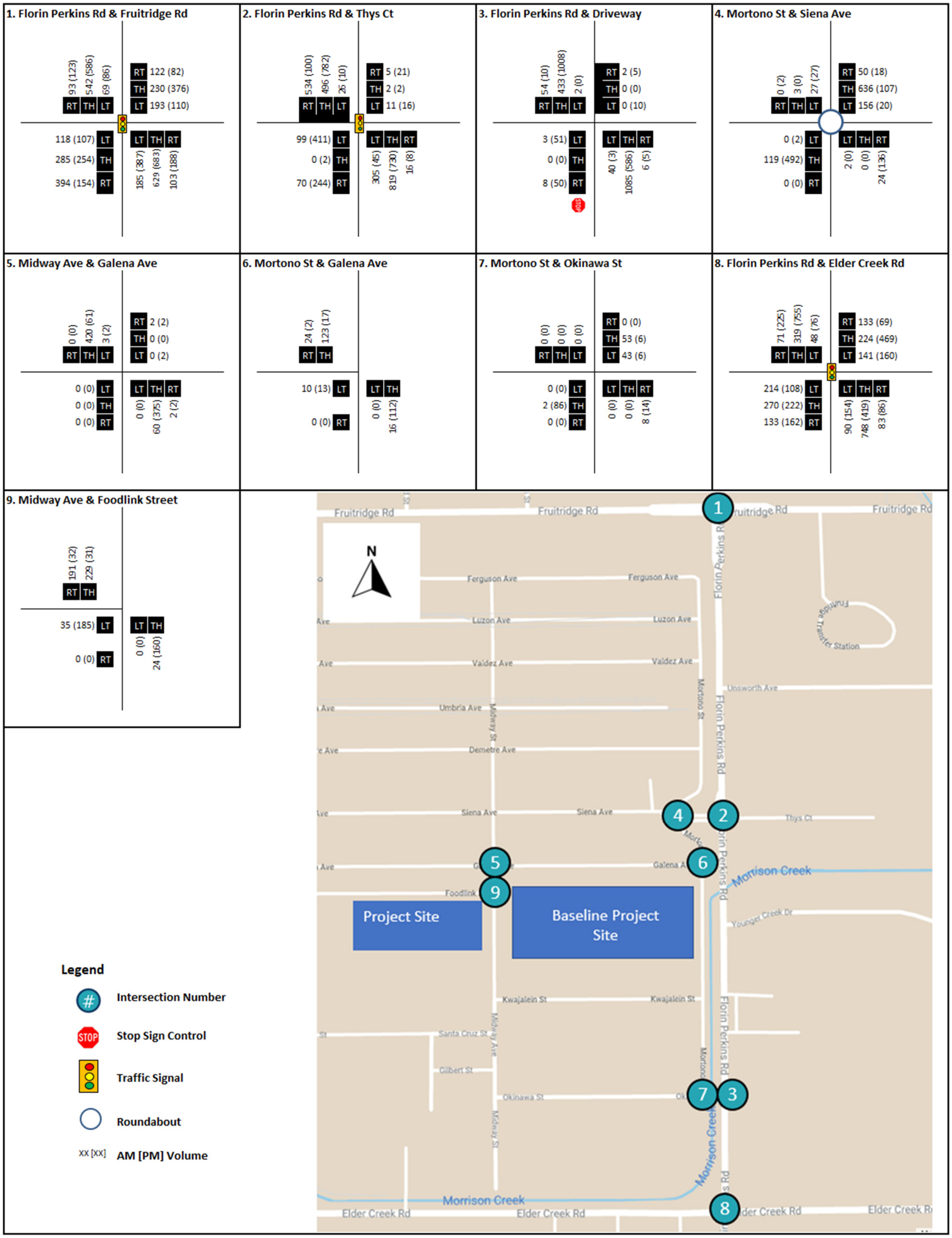


FIGURE 9: BASELINE PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

RESULTS OF BASELINE PLUS PROJECT CONDITIONS ANALYSIS

Baseline plus project condition intersection analysis results are summarized in **Table 9** and **Table 10**. All of the intersections meet the LOS goals.

The signalized intersection queues do not extend into adjacent intersections, with the exception of Intersection 2. At this location, the eastbound queues in the PM peak hour may extend into the adjacent roundabout by approximately 80 feet (Intersection 3). Appendix C contains the Level of service results and Appendix D contains the queue results.

TABLE 9: BASELINE PLUS PROJECT INTERSECTION OPERATIONS ANALYSIS

BASELINE PLUS PROJECT INTERSECTION OPERATING CONDITIONS				
INTERSECTION	A.M. PEAK HOUR		P.M. PEAK HOUR	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
1. Florin Perkins Road & Fruitridge Road	49.2	D	44.5	D
2. Florin Perkins Road & Siena Avenue/Thys Court	53.0	D	39.1	D
3. Florin Perkins Road & Okinawa Street	0.3	A	2.6	A
4. Siena Avenue & Mortono Street	8.9	A	6.1	A
5. Midway Avenue / Midway Street & Galena Avenue	10.7	B	9.9	A
6. Mortono Street & Galena Avenue	7.6	A	7.5	A
7. Mortono Street & Okinawa Street	7.5	A	7.3	A
8. Elder Creek Road & Florin Perkins Road	42.7	D	45.9	D
9. Foodlink Street & Midway Avenue	10.0	A	8.9	A

TABLE 10: BASELINE PLUS PROJECT INTERSECTION QUEUE ANALYSIS

BASELINE PLUS PROJECT INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
1. Florin Perkins Road & Fruitridge Road	EBL	200	147	146
	EBT	>700	138	141
	EBR	400	176	58
	WBL	200	235	150
	WBT	>700	109	206
	WBR	400	39	15
	NBL	200	243	547
	NBT	>700	336	381
	NBR	400	87	94
	SBL	200	98	122
	SBT	>700	252	295
	SBR	400	13	45
2. Florin Perkins Road & Siena Avenue / Thys Court	EBL	170	80	241
	EBT	170	80	248
	EBR	170	9	90
	WBT	>700	32	33
	NBL	200	327	81
	NBT	>700	237	155
	SBL	200	26	15
	SBT	>700	235	429
	SBR	400	273	84

BASELINE PLUS PROJECT INTERSECTION OPERATING CONDITIONS				
INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95TH PERCENTILE QUEUE (FEET)	
			AM PEAK HOUR	PM PEAK HOUR
8. Florin Perkins Road & Elder Creek Road	EBL	350	297	149
	EBT	700	141	121
	EBR	450	54	58
	WBL	200	173	205
	WBT	700	122	240
	WBR	200	55	0
	NBL	200	117	190
	NBT	700	303	192
	NBR	100	17	27
	SBL	150	82	99
	SBT	700	21	442
	SBR	200	0	146

IMPACTS AND MITIGATION MEASURES

Impact 1:
The proposed project would increase traffic volume and delay at study area intersections under the existing plus project scenario. Based on the analysis below, the impact is less than significant.

As summarized in Table 9, the project would increase average delay at several study area intersections. The project would increase traffic volumes at several study area intersections. The resultant operating conditions do not exceed City LOS goals.

Mitigation Measure 1:
None required.

Impact 2:
The proposed project could cause potentially significant impacts to transit. Based on the analysis below, the impact is less than significant.

The proposed project would not adversely affect public transit operations. The project would not modify or impede any existing or planned transit facilities / routes.

Mitigation Measure 2:
None required.

Impact 3:
The proposed project could cause potentially significant impacts to pedestrian facilities. Based on the analysis below, the impact is less than significant.

The proposed project would not adversely affect existing or planned pedestrian facilities.

Mitigation Measure 3:
None required.

Impact 4:
The proposed project could cause potentially significant impacts to bicycle facilities. Based on the analysis below, the impact is less than significant.

The proposed project would not adversely affect existing or planned bicycle facilities.

Mitigation Measure 4:
None required.

Impact 5:
The proposed project could cause potentially significant impacts due to construction-related activities. Based on the analysis below, the impact is less than significant.

The City Code (City Code 12.20.030) requires that a construction traffic control plan be prepared and approved prior to the beginning of project construction, to the satisfaction of the City Traffic Engineer and subject to review by all affected agencies. All work performed during construction must conform to the conditions and requirements of the approved plan. The plan shall ensure that safe and efficient movement of traffic through the construction work zone(s) is maintained. At a minimum, the plan shall include the following:

- Time and day of street closures
- Proper advance warning and posted signage regarding street closures
- Provision of driveway access plan to ensure safe vehicular, pedestrian, and bicycle movements
- Safe and efficient access routes for emergency vehicles
- Provisions for pedestrian safety
- Use of manual traffic control when necessary
- Number of anticipated truck trips, and time of day of arrival and departure of trucks
- Provision of a truck circulation pattern and staging area with a limitation on the number of trucks that can be waiting and any limitations on the size and type of trucks appropriate for the surrounding transportation network
- The plan must be available at the site for inspection by the City representative during all work. With the implementation of the traffic control plan, local roadways and freeway facilities will continue to operate at acceptable operating conditions and the impact of the project would be less than significant.

Mitigation Measure 5:
None required.

ON-SITE OPERATIONS REVIEW AND QUEUING

DRIVEWAY THROAT LENGTHS

The "throat length" of a driveway is defined as the distance from the outer edge of the traveled way of the intersecting roadway to the first point along the driveway at which there are conflicting vehicular traffic movements. Conflicting movements include turning vehicles and vehicles entering / exiting parking stalls. Adequate throat length is critical to ensure that queued exiting vehicles do not interfere with / block entering vehicles, resulting in entering queues extending onto city sidewalks and / or streets.

As illustrated in Figure 2, the project proposes three driveways on Foodlink Street, two driveways on Midway Avenue, and two driveways on Park Avenue. The driveways accessing Midway Avenue are shown opposite the two driveways that serve the baseline project, which is a preferred design for driveway location. There is no property access opposite the driveways accessing Park Avenue. The center driveway accessing Foodlink Street is offset about 50 feet (inside-curb to inside-curb) from an existing driveway on the north side of the street. Given the low-intensity use on the north side, and low volumes on Foodlink Street, this distance is acceptable. However, if the parcel to the north is redeveloped with a more intense use, it would be desirable to align the driveways, similar to the proposed alignment on Midway Avenue.

The driveway locations are proposed at an acceptable distance from adjacent intersections. Internal throat depth at the intersections is acceptable, with the exception of the center driveway on Foodlink Street. An exiting truck would block inbound access to the car parking area parallel to the street. A minimum throat length of 75 feet is recommended for all driveways accommodating truck traffic. A minimum throat length of 25 feet is acceptable for driveways limited to passenger cars.

The throat length at EB approach to Florin Perkins Road & Siena Avenue/Thys Court is about 170 feet. During the PM peak hour under the baseline plus project scenario, the EB 95th percentile queue length exceeds the storage capacity which may block the roundabout. Updating the signal timing will reduce the 95th percentile queue length but cannot completely prevent the potential spillover. It is important however to recognize that this analysis considers the highest intensity land use. As a result, it is recommended to observe queuing during full operations, and update the signal timing if persistent queuing is observed. Additional alternatives could include:

- Signing the northbound and eastbound approaches of the roundabout to encourage vehicles not to enter if the exit is blocked.
- During the PM peak, providing a secondary exit route southbound to exit the complex at Okinawa Street. This route is currently blocked by a gate and the applicant would need to coordinate operations with the park owners to address any security concerns.

BICYCLE ACCESS

Bicycle access is available via Florin Perkins Road. The project would not interfere with existing or planned bicycle facilities.

PEDESTRIAN ACCESS

There are limited existing pedestrian facilities in the vicinity of the site with the Depot. However, as parcels are redeveloped, sidewalks should be provided along the project street frontage, with pedestrian connections to major building pedestrian entrances. This is consistent with City General Plan Policies (such as M 1.2.1, M 2.1.2., M 2.1.4, and M 4.4.1) and the Pedestrian Master Plan. General Plan Policy M 4.4.1 states:

"Industrial Streets: Industrial Streets are designed to accommodate significant volumes of large vehicles such as trucks, trailers, and other delivery vehicles. Because these areas are relatively low-density, bicycle and pedestrian travel is more infrequent than in other types of neighborhoods, but still should be minimally accommodated."

TRUCK ACCESS

It is understood that heavy vehicle access to the site will be via Midway Avenue and Siena Avenue from the existing Depot Park entrance gate along Florin Perkins Road. The entrance gate area and the Siena Avenue intersections with Midway Avenue, Mortono Street, and Florin Perkins Road have all been designed to accommodate heavy vehicles (semi-trailers). As the site plan is developed, the applicant shall show using vehicle turning templates that design vehicles can be safely and efficiently accommodated at the driveway entrances without infringing on adjacent lanes

APPENDICES

APPENDIX A

TRAFFIC COUNTS

DKS

428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

All Traffic Data Services, Inc.
www.alltrafficdata.net

Site Code: 9
FLORIN PERKINS RD N.O FRUITRIDGE RD

Start Time	24-Mar-20 Tue	NB	SB							Total
12:00 AM		49	56							105
01:00		54	38							92
02:00		43	38							81
03:00		53	59							112
04:00		122	175							297
05:00		223	384							607
06:00		432	**597**							1029
07:00		**574**	525							**1099**
08:00		416	402							818
09:00		434	437							871
10:00		468	438							906
11:00		500	402							902
12:00 PM		489	505							994
01:00		555	**571**							1126
02:00		617	571							1188
03:00		**760**	542							**1302**
04:00		627	464							1091
05:00		478	395							873
06:00		268	211							479
07:00		229	147							376
08:00		153	115							268
09:00		150	76							226
10:00		87	52							139
11:00		69	59							128
Total		7850	7259							15109
Percent		52.0%	48.0%							
AM Peak	-	07:00	06:00	-	-	-	-	-	-	07:00
Vol.	-	574	597	-	-	-	-	-	-	1099
PM Peak	-	15:00	13:00	-	-	-	-	-	-	15:00
Vol.	-	760	571	-	-	-	-	-	-	1302

All Traffic Data Services, Inc.
www.alltrafficdata.net

Site Code: 9
FLORIN PERKINS RD N.O FRUITRIDGE RD

Start Time	25-Mar-20 Wed	NB	SB							Total
12:00 AM		57	47							104
01:00		58	35							93
02:00		44	49							93
03:00		52	52							104
04:00		117	182							299
05:00		216	408							624
06:00		404	**625**							1029
07:00		**569**	545							**1114**
08:00		419	419							838
09:00		446	455							901
10:00		477	450							927
11:00		510	419							929
12:00 PM		503	528							1031
01:00		597	**600**							1197
02:00		661	596							1257
03:00		**786**	573							**1359**
04:00		687	485							1172
05:00		514	390							904
06:00		284	221							505
07:00		234	156							390
08:00		158	122							280
09:00		166	80							246
10:00		88	60							148
11:00		73	57							130
Total		8120	7554							15674
Percent		51.8%	48.2%							
AM Peak	-	07:00	06:00	-	-	-	-	-	-	07:00
Vol.	-	569	625	-	-	-	-	-	-	1114
PM Peak	-	15:00	13:00	-	-	-	-	-	-	15:00
Vol.	-	786	600	-	-	-	-	-	-	1359

All Traffic Data Services, Inc.
www.alltrafficdata.net

Site Code: 9
FLORIN PERKINS RD N.O FRUITRIDGE RD

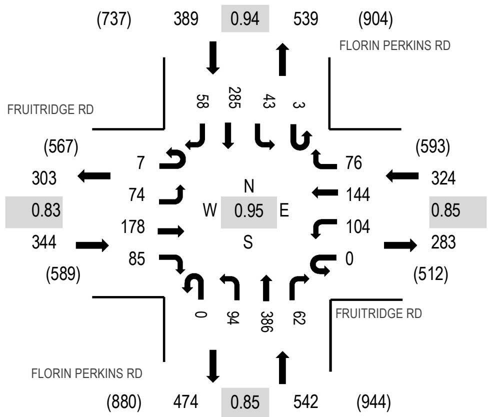
Start Time	26-Mar-20 Thu	NB	SB							Total
12:00 AM		56	54							110
01:00		58	39							97
02:00		44	37							81
03:00		51	58							109
04:00		137	176							313
05:00		205	384							589
06:00		403	**593**							996
07:00		**522**	518							**1040**
08:00		426	401							827
09:00		417	427							844
10:00		499	428							927
11:00		521	404							925
12:00 PM		509	501							1010
01:00		599	**572**							1171
02:00		659	568							1227
03:00		**789**	545							**1334**
04:00		684	459							1143
05:00		517	391							908
06:00		264	208							472
07:00		213	145							358
08:00		156	113							269
09:00		150	74							224
10:00		94	52							146
11:00		75	56							131
Total		8048	7203							15251
Percent		52.8%	47.2%							
AM Peak	-	07:00	06:00	-	-	-	-	-	-	07:00
Vol.	-	522	593	-	-	-	-	-	-	1040
PM Peak	-	15:00	13:00	-	-	-	-	-	-	15:00
Vol.	-	789	572	-	-	-	-	-	-	1334
Grand Total		24018	22016							46034
Percent		52.2%	47.8%							
ADT		ADT 15,345		AADT 15,345						

(303) 216-2439
www.alltrafficdata.net

Location: 1 FLORIN PERKINS RD & FRUITRIDGE RD AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:30 AM - 07:45 AM

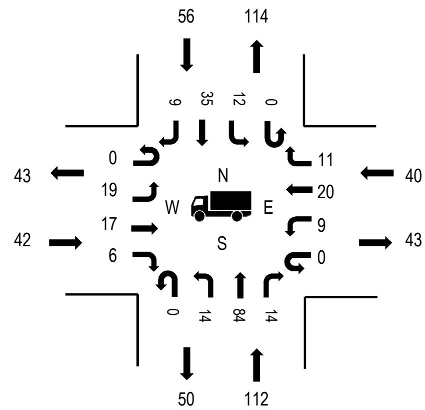
Study Peak Hour (for all study intersections)

Motorized Vehicles

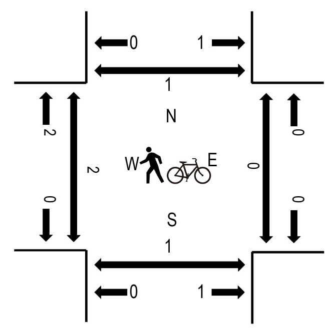


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	12.2%	0.83
WB	12.3%	0.85
NB	20.7%	0.85
SB	14.4%	0.94
All	15.6%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	FRUITRIDGE RD Eastbound U-Turn	Left	Thru	Right	FRUITRIDGE RD Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	2	13	47	19	0	18	42	19	0	27	88	9	0	13	65	12	374	1,599
7:15 AM	0	19	33	17	0	36	37	22	0	18	93	20	1	8	79	13	396	1,557
7:30 AM	3	21	57	23	0	25	29	9	0	29	114	16	2	10	64	18	420	1,463
7:45 AM	2	21	41	26	0	25	36	26	0	20	91	17	0	12	77	15	409	1,361
8:00 AM	2	10	33	21	0	15	35	22	0	27	72	15	1	6	58	15	332	1,264
8:15 AM	1	7	26	22	0	18	30	13	0	20	54	20	1	11	64	15	302	
8:30 AM	0	12	37	18	0	21	35	11	0	14	78	12	0	5	62	13	318	
8:45 AM	0	8	34	14	0	18	29	22	0	18	54	18	0	12	75	10	312	
Count Total	10	111	308	160	0	176	273	144	0	173	644	127	5	77	544	111	2,863	
Peak Hour	7	74	178	85	0	104	144	76	0	94	386	62	3	43	285	58	1,599	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	5	28	10	12	55	7:00 AM	0	0	0	0	0	7:00 AM	1	1	0	0	2
7:15 AM	7	28	12	10	57	7:15 AM	0	0	0	0	0	7:15 AM	1	0	0	1	2
7:30 AM	18	30	9	14	71	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	12	26	9	20	67	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	13	24	15	15	67	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	1	1
8:15 AM	9	21	12	25	67	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	1	1
8:30 AM	11	24	24	11	70	8:30 AM	0	0	0	1	1	8:30 AM	1	0	0	0	1
8:45 AM	8	22	21	14	65	8:45 AM	0	0	0	0	0	8:45 AM	0	1	0	0	1
Count Total	83	203	112	121	519	Count Total	0	0	0	1	1	Count Total	3	2	0	3	8
Peak Hour	42	112	40	56	250	Peak Hour	0	0	0	0	0	Peak Hour	2	1	0	1	4

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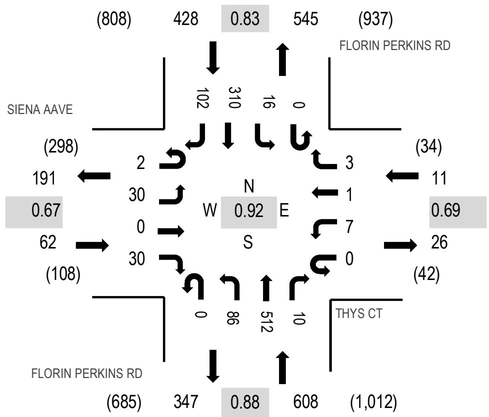
Location: 2 FLORIN PERKINS RD & THYS CT AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:45 AM - 08:00 AM

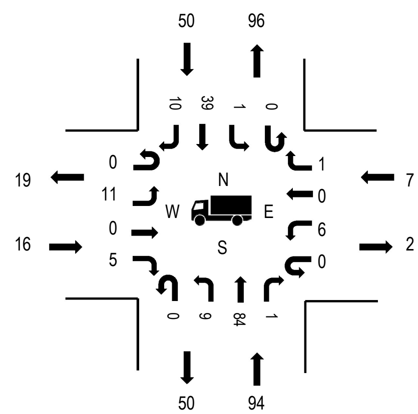
Study Peak Hour (for all study intersections)

Motorized Vehicles

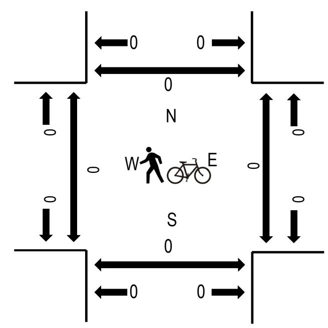


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	25.8%	0.67
WB	63.6%	0.69
NB	15.5%	0.88
SB	11.7%	0.83
All	15.1%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	SIENA AAVE Eastbound U-Turn	Left	Thru	Right	THYS CT Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	1	12	0	10	0	1	0	0	0	19	116	2	0	2	67	16	246	1,109
7:15 AM	0	4	0	6	0	2	1	1	0	10	129	2	0	4	77	26	262	1,094
7:30 AM	0	10	0	8	0	1	0	1	0	22	148	3	0	1	75	31	300	1,035
7:45 AM	1	4	0	6	0	3	0	1	0	35	119	3	0	9	91	29	301	947
8:00 AM	0	7	0	8	0	0	0	2	0	15	105	1	0	4	74	15	231	853
8:15 AM	0	7	0	3	0	1	0	4	0	14	74	0	0	1	90	9	203	
8:30 AM	0	11	0	4	0	2	0	3	0	11	93	2	0	2	71	13	212	
8:45 AM	0	6	0	0	0	6	0	5	0	10	75	4	0	2	79	20	207	
Count Total	2	61	0	45	0	16	1	17	0	136	859	17	0	25	624	159	1,962	
Peak Hour	2	30	0	30	0	7	1	3	0	86	512	10	0	16	310	102	1,109	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	7	22	1	8	38	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	2	24	2	7	35	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:30 AM	6	25	1	15	47	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	1	23	3	20	47	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	7	22	1	17	47	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:15 AM	7	13	2	28	50	8:15 AM	0	1	0	0	1	8:15 AM	0	0	0	0	0
8:30 AM	7	25	5	14	51	8:30 AM	0	0	0	1	1	8:30 AM	0	0	0	0	0
8:45 AM	1	14	2	20	37	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
Count Total	38	168	17	129	352	Count Total	0	1	0	1	2	Count Total	0	0	0	0	0
Peak Hour	16	94	7	50	167	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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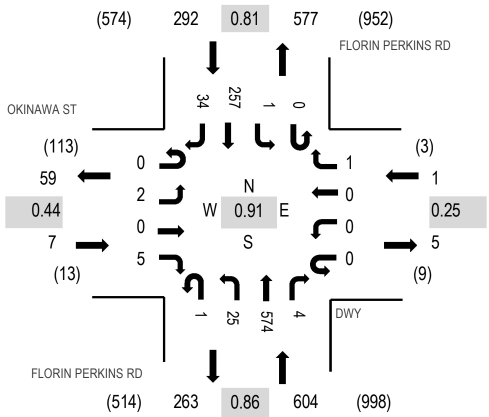
Location: 3 FLORIN PERKINS RD & DWY AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:30 AM - 07:45 AM

Study Peak Hour (for all study intersections)

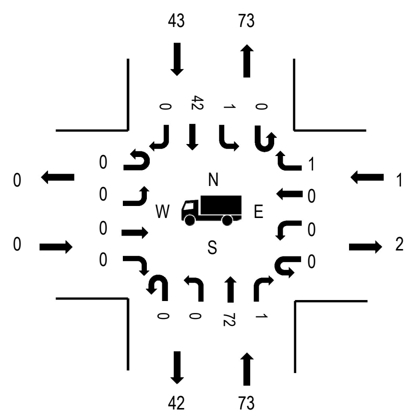
Motorized Vehicles



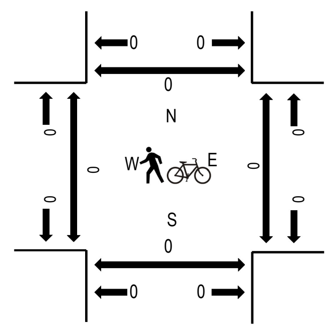
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.44
WB	100.0%	0.25
NB	12.1%	0.86
SB	14.7%	0.81
All	12.9%	0.91

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	OKINAWA ST Eastbound U-Turn	Left	Thru	Right	DWY Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	0	0	4	0	0	0	0	1	2	132	1	0	0	62	4	206	904
7:15 AM	0	0	0	1	0	0	0	0	0	5	133	0	0	0	57	8	204	874
7:30 AM	0	1	0	0	0	0	0	1	0	8	166	2	0	0	63	8	249	839
7:45 AM	0	1	0	0	0	0	0	0	0	10	143	1	0	1	75	14	245	759
8:00 AM	0	1	0	0	0	0	0	0	0	5	98	0	0	0	64	8	176	684
8:15 AM	0	0	0	0	0	0	0	0	0	7	89	0	0	0	64	9	169	
8:30 AM	0	3	0	1	0	0	0	0	0	5	94	3	0	0	54	9	169	
8:45 AM	0	1	0	0	0	1	0	1	0	4	88	1	0	0	67	7	170	
Count Total	0	7	0	6	0	1	0	2	1	46	943	8	0	1	506	67	1,588	
Peak Hour	0	2	0	5	0	0	0	1	1	25	574	4	0	1	257	34	904	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	0	11	0	8	19	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	0	20	0	7	27	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:30 AM	0	21	1	12	34	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	0	21	0	16	37	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	1	14	0	15	30	8:00 AM	0	1	0	0	1	8:00 AM	0	0	0	0	0
8:15 AM	0	11	0	16	27	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:30 AM	0	25	0	16	41	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:45 AM	0	15	0	14	29	8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0
Count Total	1	138	1	104	244	Count Total	0	1	0	1	2	Count Total	0	0	0	0	0
Peak Hour	0	73	1	43	117	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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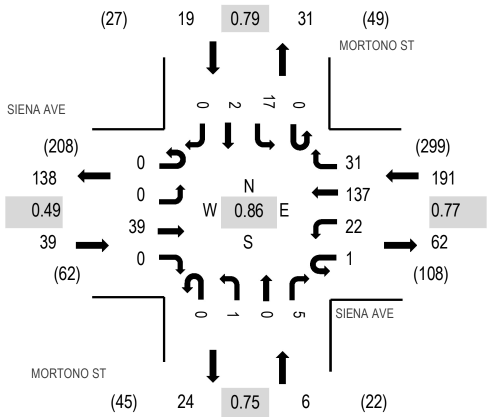
Location: 4 MORTONO ST & SIENA AVE AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:45 AM - 08:00 AM

Study Peak Hour (for all study intersections)

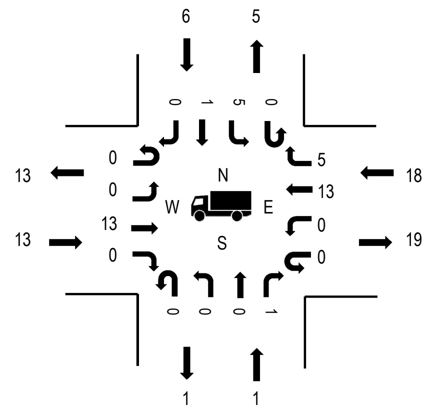
Motorized Vehicles



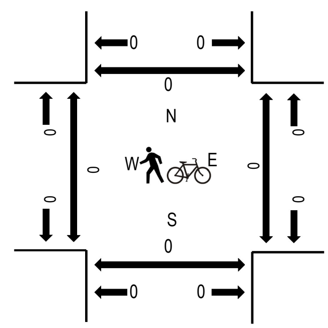
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	33.3%	0.49
WB	9.4%	0.77
NB	16.7%	0.75
SB	31.6%	0.79
All	14.9%	0.86

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SIENA AVE Eastbound U-Turn	Left	Thru	Right	SIENA AVE Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	0	20	0	0	4	28	7	0	0	0	2	0	2	1	0	64	255
7:15 AM	0	0	5	0	1	3	26	8	0	0	0	1	0	3	1	0	48	239
7:30 AM	0	0	10	0	0	11	36	5	0	1	0	0	0	6	0	0	69	225
7:45 AM	0	0	4	0	0	4	47	11	0	0	0	2	0	6	0	0	74	196
8:00 AM	0	0	8	0	0	6	21	6	0	0	1	3	0	3	0	0	48	155
8:15 AM	0	0	5	0	0	3	14	7	0	0	0	5	0	0	0	0	34	
8:30 AM	0	0	8	0	0	7	13	3	0	0	0	5	0	4	0	0	40	
8:45 AM	0	0	2	0	0	5	22	1	0	0	0	2	0	1	0	0	33	
Count Total	0	0	62	0	1	43	207	48	0	1	1	20	0	25	2	0	410	
Peak Hour	0	0	39	0	1	22	137	31	0	1	0	5	0	17	2	0	255	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	9	0	3	0	12	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	1	1	4	2	8	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:30 AM	3	0	5	3	11	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	0	0	6	1	7	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	2	3	2	2	9	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:15 AM	2	5	5	0	12	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:30 AM	6	2	1	1	10	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:45 AM	0	0	5	0	5	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
Count Total	23	11	31	9	74	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	13	1	18	6	38	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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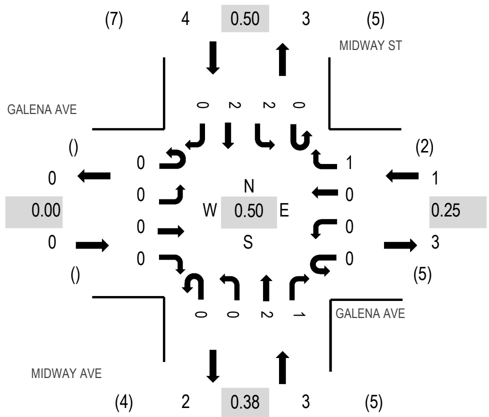
Location: 5 MIDWAY AVE & GALENA AVE AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:00 AM - 07:15 AM

Study Peak Hour (for all study intersections)

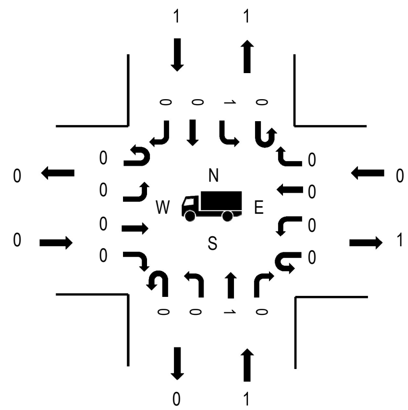
Motorized Vehicles



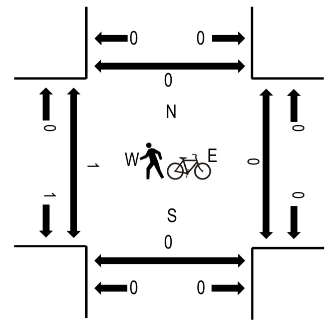
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.25
NB	33.3%	0.38
SB	25.0%	0.50
All	25.0%	0.50

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	GALENA AVE Eastbound U-Turn	Left	Thru	Right	GALENA AVE Westbound U-Turn	Left	Thru	Right	MIDWAY AVE Northbound U-Turn	Left	Thru	Right	MIDWAY ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	4	8
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	8
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	6
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	
Count Total	0	0	0	0	0	0	0	2	0	0	3	2	0	3	4	0	14	
Peak Hour	0	0	0	0	0	0	0	1	0	0	2	1	0	2	2	0	8	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	0	1	0	1	2	7:00 AM	0	0	0	0	0	7:00 AM	1	0	0	0	1
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	1	1	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
Count Total	0	1	0	3	4	Count Total	0	0	0	0	0	Count Total	1	0	0	0	1
Peak Hour	0	1	0	1	2	Peak Hour	0	0	0	0	0	Peak Hour	1	0	0	0	1

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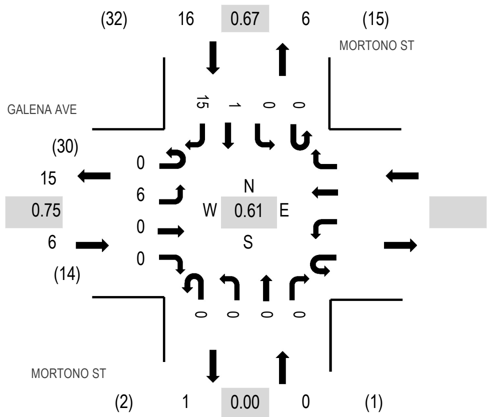
Location: 6 MORTONO ST & GALENA AVE AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:30 AM - 07:45 AM

Study Peak Hour (for all study intersections)

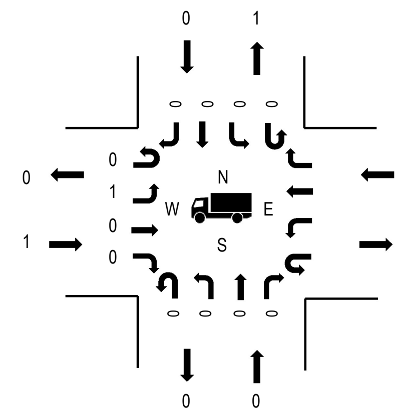
Motorized Vehicles



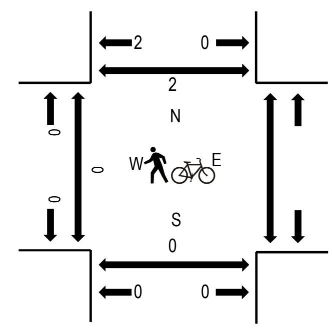
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	16.7%	0.75
WB		
NB	0.0%	0.00
SB	0.0%	0.67
All	4.5%	0.61

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	GALENA AVE Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	2	0	0					0	0	0	0	0	0	0	4	6	22
7:15 AM	0	1	0	0					0	0	0	0	0	0	0	2	3	23
7:30 AM	0	1	0	0					0	0	0	0	0	0	1	5	7	24
7:45 AM	0	2	0	0					0	0	0	0	0	0	0	4	6	26
8:00 AM	0	2	0	1					0	0	1	0	0	0	0	3	7	25
8:15 AM	0	3	0	0					0	0	0	0	0	0	0	1	4	
8:30 AM	0	2	0	0					0	0	0	0	1	0	0	6	9	
8:45 AM	0	0	0	0					0	0	0	0	0	0	0	5	5	
Count Total	0	13	0	1					0	0	1	0	1	0	1	30	47	
Peak Hour	0	6	0	0					0	0	0	0	0	0	1	15	22	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	0	0		0	0	7:00 AM	0	0		0	0	7:00 AM	0	0		0	0
7:15 AM	1	0		0	1	7:15 AM	0	0		0	0	7:15 AM	0	0		0	0
7:30 AM	0	0		0	0	7:30 AM	0	0		0	0	7:30 AM	0	0		0	0
7:45 AM	0	0		0	0	7:45 AM	0	0		0	0	7:45 AM	0	0		2	2
8:00 AM	2	0		0	2	8:00 AM	0	0		0	0	8:00 AM	0	0		0	0
8:15 AM	2	0		0	2	8:15 AM	0	0		0	0	8:15 AM	0	0		0	0
8:30 AM	0	0		0	0	8:30 AM	0	0		0	0	8:30 AM	0	0		0	0
8:45 AM	0	0		0	0	8:45 AM	0	0		0	0	8:45 AM	0	0		0	0
Count Total	5	0		0	5	Count Total	0	0		0	0	Count Total	0	0		2	2
Peak Hour	1	0		0	1	Peak Hour	0	0		0	0	Peak Hour	0	0		2	2

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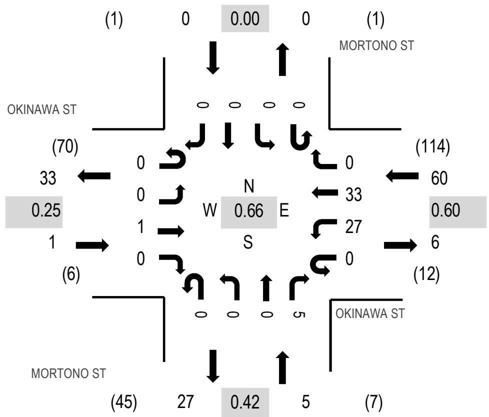
Location: 7 MORTONO ST & OKINAWA ST AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:45 AM - 08:00 AM

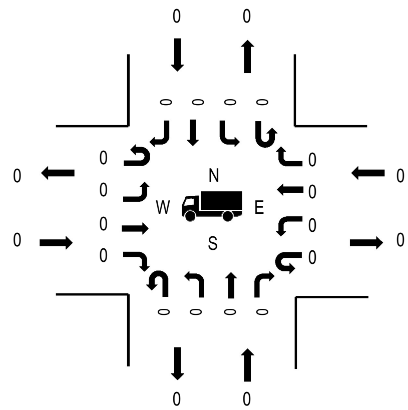
Study Peak Hour (for all study intersections)

Motorized Vehicles

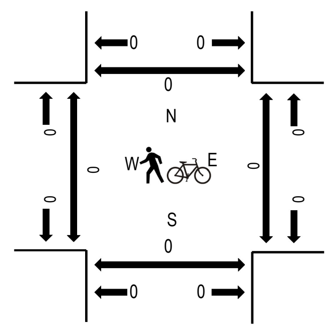


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.25
WB	0.0%	0.60
NB	0.0%	0.42
SB	0.0%	0.00
All	0.0%	0.66

Traffic Counts - Motorized Vehicles

Interval Start Time	OKINAWA ST Eastbound U-Turn	Left	Thru	Right	OKINAWA ST Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	0	1	0	0	3	3	0	0	0	0	3	0	0	0	0	10	66
7:15 AM	0	0	0	0	0	7	6	0	0	0	0	1	0	0	0	0	14	69
7:30 AM	0	0	0	0	0	7	9	0	0	0	0	1	0	0	0	0	17	71
7:45 AM	0	0	0	0	0	10	15	0	0	0	0	0	0	0	0	0	25	75
8:00 AM	0	0	1	0	0	5	7	0	0	0	0	0	0	0	0	0	13	62
8:15 AM	0	0	0	0	0	7	9	0	0	0	0	0	0	0	0	0	16	
8:30 AM	0	1	2	0	0	2	13	0	0	0	0	2	0	0	1	0	21	
8:45 AM	0	0	1	0	0	3	8	0	0	0	0	0	0	0	0	0	12	
Count Total	0	1	5	0	0	44	70	0	0	0	0	7	0	0	1	0	128	
Peak Hour	0	0	1	0	0	27	33	0	0	0	0	5	0	0	0	0	66	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	1	0	2	0	3
8:15 AM	0	0	0	0	0
8:30 AM	1	0	0	0	1
8:45 AM	0	0	0	0	0
Count Total	2	0	2	0	4
Peak Hour	0	0	0	0	0

Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
Count Total	0	0	0	0	0
Peak Hour	0	0	0	0	0

Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
Count Total	0	0	0	0	0
Peak Hour	0	0	0	0	0

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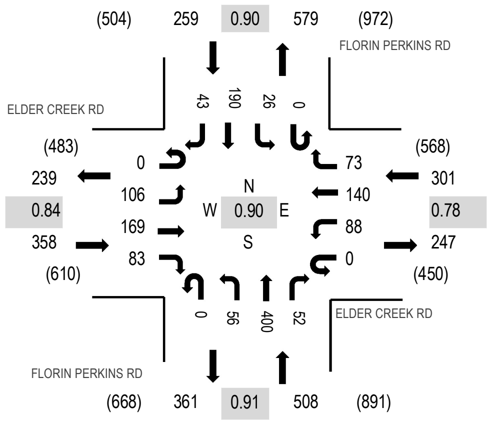
Location: 8 FLORIN PERKINS RD & ELDER CREEK RD AM
Date: Tuesday, March 24, 2020
Study Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes in Study Peak Hour: 07:45 AM - 08:00 AM

Study Peak Hour (for all study intersections)

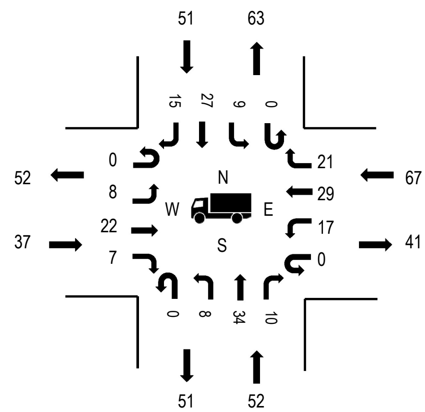
Motorized Vehicles



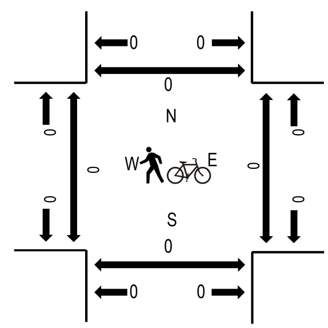
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	10.3%	0.84
WB	22.3%	0.78
NB	10.2%	0.91
SB	19.7%	0.90
All	14.5%	0.90

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ELDER CREEK RD Eastbound U-Turn	Left	Thru	Right	ELDER CREEK RD Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
7:00 AM	0	16	51	21	0	19	22	17	0	10	96	17	0	10	46	9	334	1,426
7:15 AM	0	23	41	21	0	22	36	10	0	17	98	9	0	5	45	9	336	1,393
7:30 AM	0	32	36	11	0	18	33	27	0	17	110	13	0	7	40	16	360	1,364
7:45 AM	0	35	41	30	0	29	49	19	0	12	96	13	0	4	59	9	396	1,284
8:00 AM	0	16	40	16	0	18	34	12	0	15	75	15	0	3	47	10	301	1,147
8:15 AM	0	19	24	23	0	17	51	10	0	11	71	18	0	8	49	6	307	
8:30 AM	0	19	23	16	0	15	38	17	0	14	64	20	0	7	39	8	280	
8:45 AM	0	24	21	11	0	12	36	7	0	7	59	14	0	10	44	14	259	
Count Total	0	184	277	149	0	150	299	119	0	103	669	119	0	54	369	81	2,573	
Peak Hour	0	106	169	83	0	88	140	73	0	56	400	52	0	26	190	43	1,426	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
7:00 AM	7	10	10	9	36	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	9	16	19	7	51	7:15 AM	1	0	0	0	1	7:15 AM	0	0	0	0	0
7:30 AM	10	14	17	16	57	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:45 AM	11	12	21	19	63	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
8:00 AM	15	17	13	14	59	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:15 AM	9	15	17	15	56	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:30 AM	10	26	21	18	75	8:30 AM	0	0	1	0	1	8:30 AM	0	0	0	0	0
8:45 AM	9	17	13	17	56	8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0
Count Total	80	127	131	115	453	Count Total	1	0	1	1	3	Count Total	0	0	0	0	0
Peak Hour	37	52	67	51	207	Peak Hour	1	0	0	0	1	Peak Hour	0	0	0	0	0

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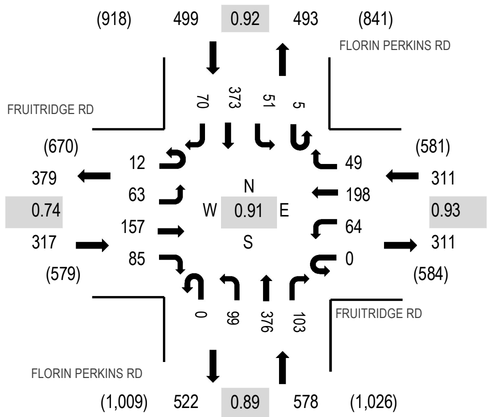
Location: 1 FLORIN PERKINS RD & FRUITRIDGE RD PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 04:30 PM - 04:45 PM

Study Peak Hour (for all study intersections)

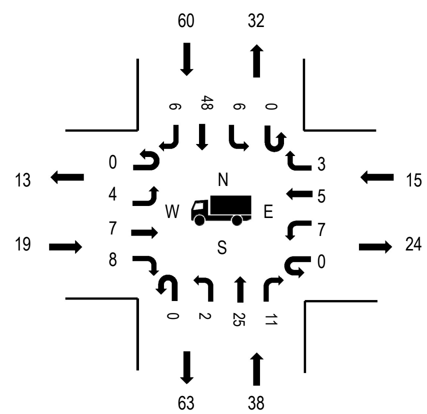
Motorized Vehicles



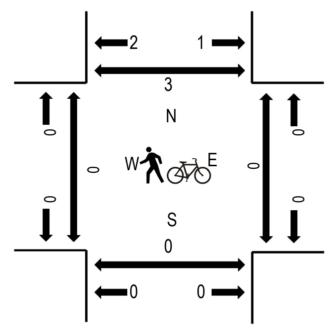
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	6.0%	0.74
WB	4.8%	0.93
NB	6.6%	0.89
SB	12.0%	0.92
All	7.7%	0.91

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRUITRIDGE RD Eastbound U-Turn	Left	Thru	Right	FRUITRIDGE RD Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	18	34	18	0	23	75	13	0	29	85	34	3	16	82	20	450	1,745
4:15 PM	4	10	38	18	0	18	51	15	0	25	115	22	3	21	90	21	451	1,705
4:30 PM	3	24	55	25	0	15	51	12	0	33	95	30	1	10	95	18	467	1,618
4:45 PM	5	15	32	14	0	10	58	11	0	17	81	17	1	7	91	18	377	1,460
5:00 PM	0	14	32	28	0	21	38	11	0	24	85	34	0	13	97	13	410	1,359
5:15 PM	1	3	36	21	0	15	20	10	1	22	90	26	0	8	100	11	364	
5:30 PM	1	9	41	26	0	18	31	6	1	11	47	21	0	7	78	12	309	
5:45 PM	0	10	29	15	0	21	29	9	0	21	44	16	1	5	68	8	276	
Count Total	14	103	297	165	0	141	353	87	2	182	642	200	9	87	701	121	3,104	
Peak Hour	12	63	157	85	0	64	198	49	0	99	376	103	5	51	373	70	1,705	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	4	6	6	21	37	4:00 PM	0	0	0	1	1	4:00 PM	0	0	0	0	0
4:15 PM	3	16	7	20	46	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	10	12	4	19	45	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	5	5	0	11	21	4:45 PM	0	0	1	1	2	4:45 PM	0	0	0	2	2
5:00 PM	1	5	4	10	20	5:00 PM	0	1	0	2	3	5:00 PM	0	0	0	1	1
5:15 PM	2	11	0	8	21	5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0
5:30 PM	3	5	3	7	18	5:30 PM	2	1	0	0	3	5:30 PM	0	0	1	0	1
5:45 PM	3	7	4	8	22	5:45 PM	1	0	0	0	1	5:45 PM	0	0	0	0	0
Count Total	31	67	28	104	230	Count Total	4	2	1	4	11	Count Total	0	0	1	3	4
Peak Hour	19	38	15	60	132	Peak Hour	0	1	1	3	5	Peak Hour	0	0	0	3	3

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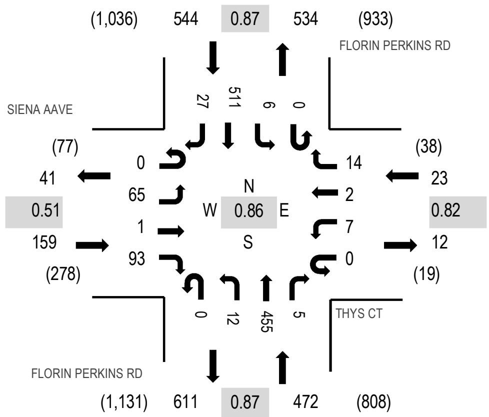
Location: 2 FLORIN PERKINS RD & THYS CT PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 05:00 PM - 05:15 PM

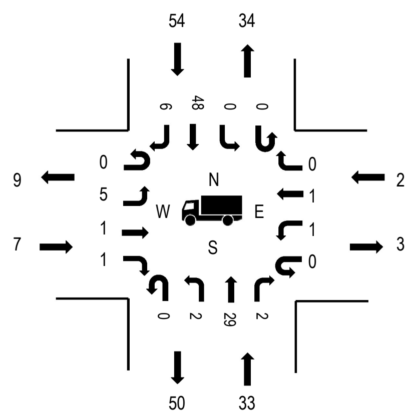
Study Peak Hour (for all study intersections)

Motorized Vehicles

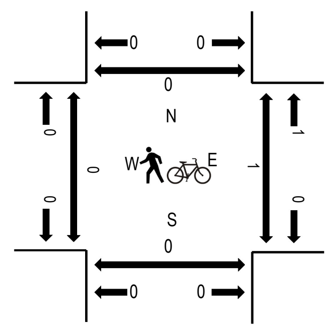


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	4.4%	0.51
WB	8.7%	0.82
NB	7.0%	0.87
SB	9.9%	0.87
All	8.0%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	SIENA AAVE Eastbound U-Turn	Left	Thru	Right	THYS CT Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	17	0	18	0	3	0	2	0	3	110	0	0	2	126	11	292	1,141
4:15 PM	0	12	0	8	0	3	0	3	0	4	123	3	0	2	124	6	288	1,198
4:30 PM	0	9	0	20	0	2	0	5	0	4	129	2	0	1	131	9	312	1,167
4:45 PM	0	16	1	15	0	2	1	3	0	3	94	0	0	1	108	5	249	1,062
5:00 PM	0	28	0	50	0	0	1	3	0	1	109	0	0	2	148	7	349	1,019
5:15 PM	0	21	0	19	0	1	0	4	0	1	89	0	0	1	118	3	257	
5:30 PM	0	14	0	8	0	3	0	0	0	1	63	2	0	1	107	8	207	
5:45 PM	0	13	0	9	0	0	0	2	0	2	64	1	0	0	108	7	206	
Count Total	0	130	1	147	0	14	2	22	0	19	781	8	0	10	970	56	2,160	
Peak Hour	0	65	1	93	0	7	2	14	0	12	455	5	0	6	511	27	1,198	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	4	6	0	21	31	4:00 PM	0	0	0	1	1	4:00 PM	0	0	0	0	0
4:15 PM	3	11	0	14	28	4:15 PM	0	1	0	0	1	4:15 PM	0	0	0	0	0
4:30 PM	1	11	1	17	30	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	2	6	1	6	15	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	0	1
5:00 PM	1	5	0	17	23	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	2	11	0	10	23	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	0	8	0	12	20	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	8	1	9	18	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	13	66	3	106	188	Count Total	0	1	0	1	2	Count Total	0	0	1	0	1
Peak Hour	7	33	2	54	96	Peak Hour	0	1	0	0	1	Peak Hour	0	0	1	0	1

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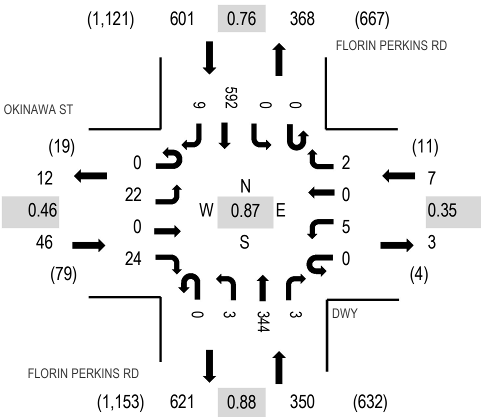
Location: 3 FLORIN PERKINS RD & DWY PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 05:00 PM - 05:15 PM

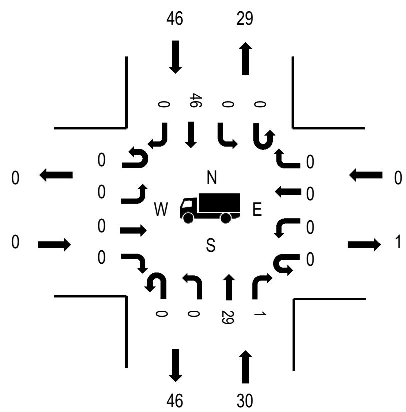
Study Peak Hour (for all study intersections)

Motorized Vehicles

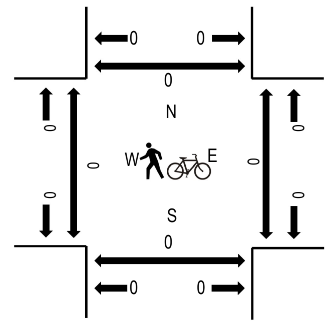


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.46
WB	0.0%	0.35
NB	8.6%	0.88
SB	7.7%	0.76
All	7.6%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	OKINAWA ST Eastbound U-Turn	Left	Thru	Right	DWY Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	11	0	11	0	1	0	1	0	0	94	0	0	0	141	0	259	974
4:15 PM	0	16	0	9	0	3	0	2	0	1	98	0	0	0	132	0	261	1,004
4:30 PM	0	3	0	7	0	1	0	0	0	0	76	0	0	0	136	4	227	968
4:45 PM	0	2	0	4	0	1	0	0	0	1	84	3	0	0	130	2	227	912
5:00 PM	0	1	0	4	0	0	0	0	0	1	86	0	0	0	194	3	289	869
5:15 PM	0	4	0	2	0	0	0	0	0	2	72	0	0	0	142	3	225	
5:30 PM	0	2	0	2	0	0	0	1	0	0	53	0	0	1	111	1	171	
5:45 PM	0	0	0	1	0	1	0	0	0	0	61	0	0	0	120	1	184	
Count Total	0	39	0	40	0	7	0	4	0	5	624	3	0	1	1,106	14	1,843	
Peak Hour	0	22	0	24	0	5	0	2	0	3	344	3	0	0	592	9	1,004	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	0	2	0	14	16	4:00 PM	0	0	0	1	1	4:00 PM	0	0	0	0	0
4:15 PM	0	10	0	13	23	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	0	7	0	14	21	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	0	7	0	7	14	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	0	6	0	12	18	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	0	10	0	10	20	5:15 PM	0	0	0	4	4	5:15 PM	0	0	0	0	0
5:30 PM	0	7	0	7	14	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	6	0	5	11	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	0	55	0	82	137	Count Total	0	0	0	5	5	Count Total	0	0	0	0	0
Peak Hour	0	30	0	46	76	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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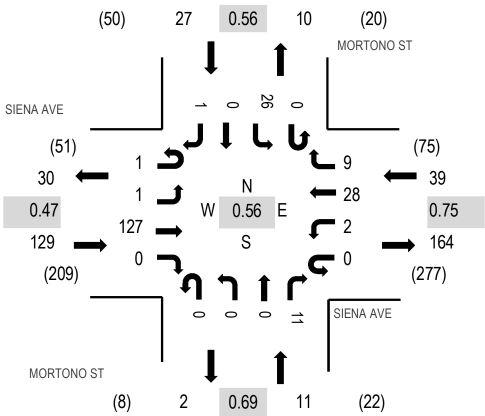
Location: 4 MORTONO ST & SIENA AVE PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 05:00 PM - 05:15 PM

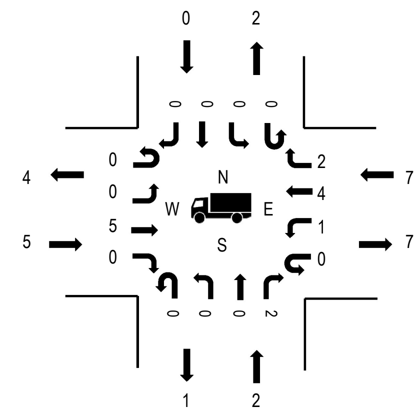
Study Peak Hour (for all study intersections)

Motorized Vehicles

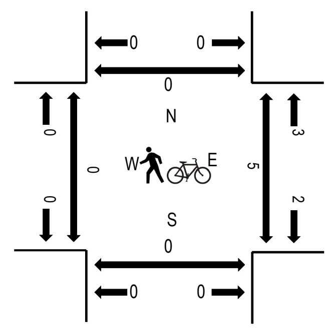


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	3.9%	0.47
WB	17.9%	0.75
NB	18.2%	0.69
SB	0.0%	0.56
All	6.8%	0.56

Traffic Counts - Motorized Vehicles

Interval Start Time	SIENA AVE Eastbound U-Turn	Left	Thru	Right	SIENA AVE Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	0	24	0	0	0	10	4	0	0	0	7	0	3	0	0	48	162
4:15 PM	0	1	12	0	0	0	7	1	0	0	0	2	0	6	0	0	29	206
4:30 PM	0	0	23	0	0	2	8	3	0	0	0	4	0	3	0	1	44	219
4:45 PM	0	0	24	0	0	0	7	3	0	0	0	2	0	5	0	0	41	206
5:00 PM	1	0	68	0	0	0	6	2	0	0	0	3	0	12	0	0	92	194
5:15 PM	0	0	29	0	0	2	2	0	0	0	0	1	0	7	1	0	42	
5:30 PM	0	0	10	0	0	1	6	3	0	0	0	2	0	9	0	0	31	
5:45 PM	0	0	17	0	0	2	3	3	0	0	0	1	0	3	0	0	29	
Count Total	1	1	207	0	0	7	49	19	0	0	0	22	0	48	1	1	356	
Peak Hour	1	1	127	0	0	2	28	9	0	0	0	11	0	26	0	1	206	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	3	1	3	0	7	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	2	1	1	0	4	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	1	1	3	0	5	4:30 PM	0	0	0	0	0	4:30 PM	0	0	3	0	3
4:45 PM	1	0	3	0	4	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	0	1
5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	1	0	1
5:15 PM	2	0	2	1	5	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	0	1	5	0	6	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	10	4	19	1	34	Count Total	0	0	0	0	0	Count Total	0	0	5	0	5
Peak Hour	5	2	7	0	14	Peak Hour	0	0	0	0	0	Peak Hour	0	0	5	0	5

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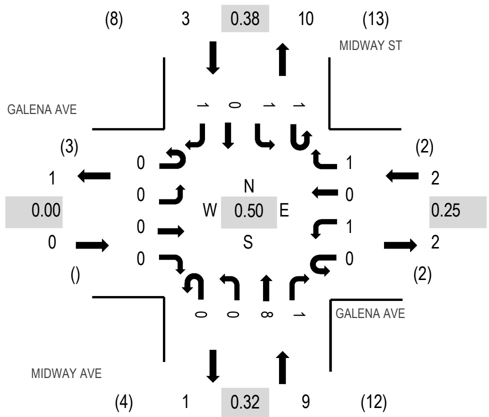
Location: 5 MIDWAY AVE & GALENA AVE PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 04:45 PM - 05:00 PM

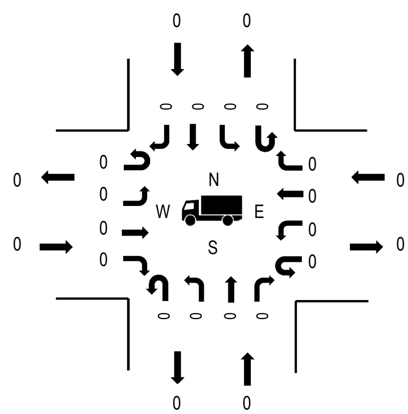
Study Peak Hour (for all study intersections)

Motorized Vehicles

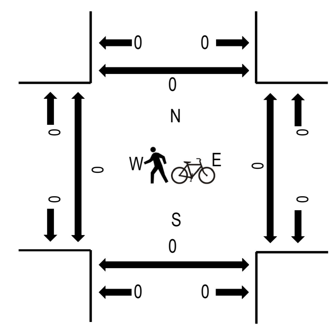


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.25
NB	0.0%	0.32
SB	0.0%	0.38
All	0.0%	0.50

Traffic Counts - Motorized Vehicles

Interval	GALENA AVE Eastbound				GALENA AVE Westbound				MIDWAY AVE Northbound				MIDWAY ST Southbound					Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6	18
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	5	14
4:45 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	10
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Count Total	0	0	0	0	0	1	0	1	0	0	11	1	1	1	3	3	22	
Peak Hour	0	0	0	0	0	1	0	1	0	0	8	1	1	1	0	1	14	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval	Heavy Vehicles				
Start Time	EB	NB	WB	SB	Total
4:00 PM	0	3	0	2	5
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1
5:45 PM	0	0	0	0	0
Count Total	0	3	0	3	6
Peak Hour	0	0	0	0	0

Interval	Bicycles on Roadway				
Start Time	EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
Count Total	0	0	0	0	0
Peak Hour	0	0	0	0	0

Interval	Pedestrians/Bicycles on Crosswalk				
Start Time	EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
Count Total	0	0	0	0	0
Peak Hour	0	0	0	0	0

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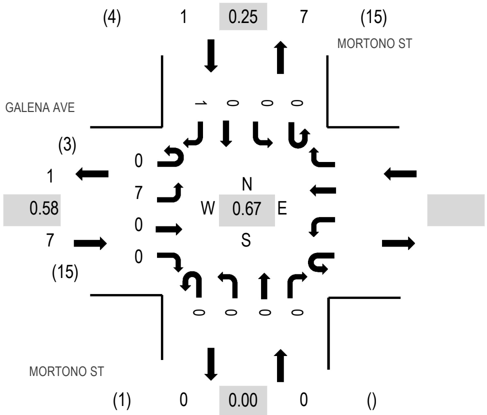
Location: 6 MORTONO ST & GALENA AVE PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 04:30 PM - 04:45 PM

Study Peak Hour (for all study intersections)

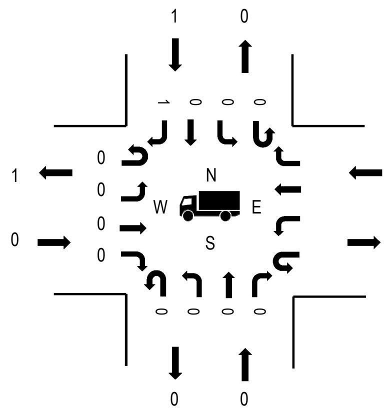
Motorized Vehicles



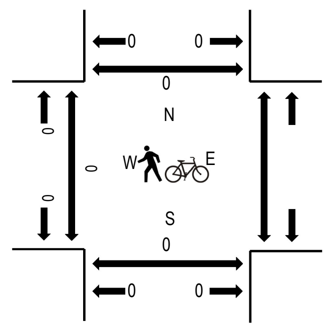
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.58
WB		
NB	0.0%	0.00
SB	100.0%	0.25
All	12.5%	0.67

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	GALENA AVE Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	4	0	0					0	0	0	0	0	0	0	0	4	9
4:15 PM	0	0	0	0					0	0	0	0	0	0	0	0	0	8
4:30 PM	0	2	0	0					0	0	0	0	0	0	0	1	3	11
4:45 PM	0	2	0	0					0	0	0	0	0	0	0	0	2	10
5:00 PM	0	3	0	0					0	0	0	0	0	0	0	0	3	10
5:15 PM	0	1	0	0					0	0	0	0	0	0	0	2	3	
5:30 PM	0	2	0	0					0	0	0	0	0	0	0	0	2	
5:45 PM	0	1	0	0					0	0	0	0	0	0	1	0	2	
Count Total	0	15	0	0					0	0	0	0	0	0	1	3	19	
Peak Hour	0	7	0	0					0	0	0	0	0	0	0	1	8	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total
4:00 PM	0	0		0	0
4:15 PM	0	0		0	0
4:30 PM	0	0		1	1
4:45 PM	0	0		0	0
5:00 PM	0	0		0	0
5:15 PM	0	0		1	1
5:30 PM	0	0		0	0
5:45 PM	0	0		0	0
Count Total	0	0		2	2
Peak Hour	0	0		1	1

Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total
4:00 PM	0	0		0	0
4:15 PM	0	0		0	0
4:30 PM	0	0		0	0
4:45 PM	0	0		0	0
5:00 PM	0	0		0	0
5:15 PM	0	0		0	0
5:30 PM	0	0		0	0
5:45 PM	0	0		0	0
Count Total	0	0		0	0
Peak Hour	0	0		0	0

Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	0	0		1	1
4:15 PM	0	0		0	0
4:30 PM	0	0		0	0
4:45 PM	0	0		0	0
5:00 PM	0	0		0	0
5:15 PM	0	0		0	0
5:30 PM	0	0		0	0
5:45 PM	0	0		0	0
Count Total	0	0		1	1
Peak Hour	0	0		0	0

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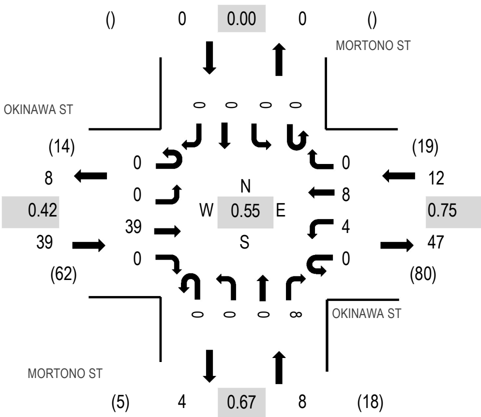
Location: 7 MORTONO ST & OKINAWA ST PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 04:15 PM - 04:30 PM

Study Peak Hour (for all study intersections)

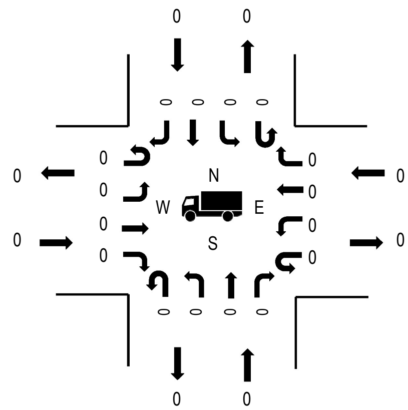
Motorized Vehicles



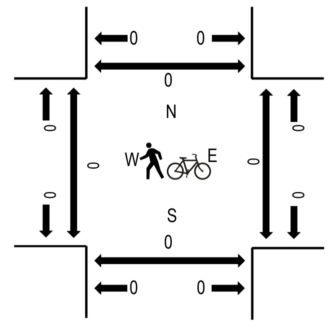
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.42
WB	0.0%	0.75
NB	0.0%	0.67
SB	0.0%	0.00
All	0.0%	0.55

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	OKINAWA ST Eastbound U-Turn	Left	Thru	Right	OKINAWA ST Westbound U-Turn	Left	Thru	Right	MORTONO ST Northbound U-Turn	Left	Thru	Right	MORTONO ST Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	0	19	0	0	0	0	0	0	0	0	2	0	0	0	0	21	71
4:15 PM	0	0	23	0	0	1	0	0	0	0	0	3	0	0	0	0	27	59
4:30 PM	0	0	9	0	0	2	2	0	0	0	0	1	0	0	0	0	14	43
4:45 PM	0	0	3	0	0	1	2	0	0	0	0	3	0	0	0	0	9	34
5:00 PM	0	0	4	0	0	0	4	0	0	0	0	1	0	0	0	0	9	28
5:15 PM	0	0	2	0	0	0	5	0	0	0	0	4	0	0	0	0	11	
5:30 PM	0	0	2	0	0	0	1	0	0	0	0	2	0	0	0	0	5	
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3	
Count Total	0	0	62	0	0	5	14	0	0	0	0	18	0	0	0	0	99	
Peak Hour	0	0	39	0	0	4	8	0	0	0	0	8	0	0	0	0	59	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	0	0	0	0	0	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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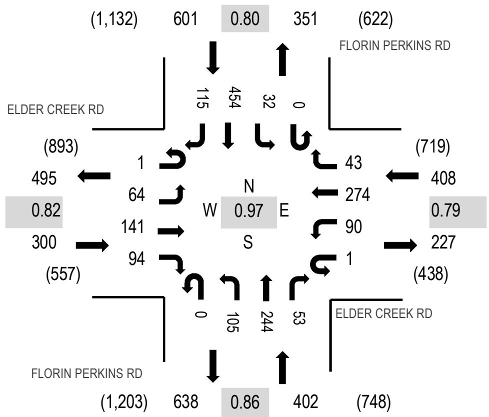
Location: 8 FLORIN PERKINS RD & ELDER CREEK RD PM
Date: Tuesday, March 24, 2020
Study Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes in Study Peak Hour: 04:15 PM - 04:30 PM

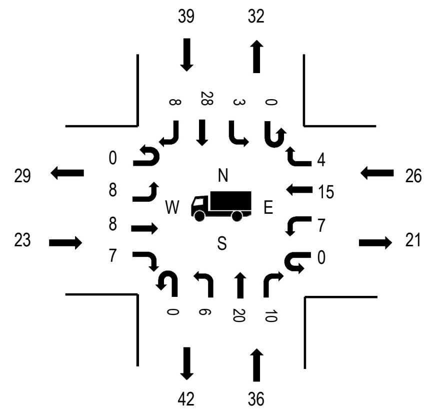
Study Peak Hour (for all study intersections)

Motorized Vehicles

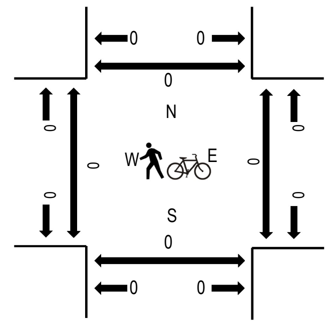


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	7.7%	0.82
WB	6.4%	0.79
NB	9.0%	0.86
SB	6.5%	0.80
All	7.2%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	ELDER CREEK RD Eastbound U-Turn	Left	Thru	Right	ELDER CREEK RD Westbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Northbound U-Turn	Left	Thru	Right	FLORIN PERKINS RD Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour
4:00 PM	0	11	25	21	0	25	77	7	3	28	70	19	0	16	97	43	442	1,715
4:15 PM	0	21	45	25	1	24	69	8	0	20	76	14	0	13	103	24	443	1,711
4:30 PM	1	18	30	26	0	33	82	14	0	22	46	11	0	8	109	25	425	1,651
4:45 PM	0	16	39	29	0	18	65	11	0	26	60	10	0	5	98	28	405	1,535
5:00 PM	0	9	27	14	0	15	58	10	0	37	62	18	0	6	144	38	438	1,441
5:15 PM	0	15	39	25	0	15	51	4	0	26	51	10	0	8	114	25	383	
5:30 PM	0	11	22	18	0	17	49	8	2	13	34	16	0	4	97	18	309	
5:45 PM	0	12	32	26	0	14	38	6	0	17	42	15	0	5	91	13	311	
Count Total	1	113	259	184	1	161	489	68	5	189	441	113	0	65	853	214	3,156	
Peak Hour	1	64	141	94	1	90	274	43	0	105	244	53	0	32	454	115	1,711	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles EB	NB	WB	SB	Total	Interval Start Time	Bicycles on Roadway EB	NB	WB	SB	Total	Interval Start Time	Pedestrians/Bicycles on Crosswalk EB	NB	WB	SB	Total
4:00 PM	4	4	9	11	28	4:00 PM	0	0	0	1	1	4:00 PM	0	0	0	0	0
4:15 PM	6	14	10	13	43	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	8	6	6	9	29	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	7	10	5	5	27	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	2	6	5	12	25	5:00 PM	1	1	1	0	3	5:00 PM	0	0	0	0	0
5:15 PM	6	13	7	11	37	5:15 PM	0	0	0	3	3	5:15 PM	0	0	0	0	0
5:30 PM	6	8	8	8	30	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	10	5	2	5	22	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	49	66	52	74	241	Count Total	1	1	1	4	7	Count Total	0	0	0	0	0
Peak Hour	23	36	26	39	124	Peak Hour	1	1	1	0	3	Peak Hour	0	0	0	0	0

APPENDIX B

ADJUSTED TRAFFIC COUNTS

Adjusted Traffic Counts

Methodology:

Traffic counts were performed on March 24, 2020 in the study intersections. But this traffic counts were impacted by the shelter-in-place order in California and needed to be adjusted. This appendix shows the adjusted traffic volume for all study intersections.

Year 2019 traffic counts and Year 2035 traffic forecast (from 2040 General Plan) were obtained for Southbound Florin Perkins Road (North of Fruitridge). Year 2019 traffic counts and Year 2035 traffic forecast were used to interpolate Year 2020 Traffic volume. A multiplier was calculated based on Year 2020 traffic count and Year 2020 traffic volume estimate. As shown in 'Multiplier calculation', the multiplier is calculated to be 1.6.

It is assumed that the approach splits have not been impacted by shelter-in-place for local streets as the project area has homogenous land use. This multiplier was applied to the traffic count of all 8 intersections in the study area to scale up the traffic volume.

Daily traffic counts were conducted along the study roadway segment from Tuesday, March 24 to Thursday March 26,2020 to obtain an average weekday daily traffic volume. The traffic counts were further adjusted to reverse the impact of reduced travel demand volumes due to shelter-in-place order in California. For the study roadway segment, 2019 peak hour counts, and daily counts are obtained. Year 2019 peak hour counts, and daily counts are used to interpolate year 2020 daily counts from year 2020 scaled peak hour volume.

Scaled Counts

Existing AM

Turning Movement Count

60 Minute Counts

				March 2020 Counts												Scaled Counts											
DATE	TIME	INTID		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
3/24/2020	700	1	FLORIN PERKINS RD & FRUITRIDGE RD	94	386	62	43	285	58	74	178	85	104	144	76	150	618	99	69	456	93	118	285	136	166	230	122
3/24/2020	700	2	FLORIN PERKINS RD & THYS CT	86	512	10	16	310	102	30	0	30	7	1	3	138	819	16	26	496	163	48	0	48	11	2	5
3/24/2020	700	3	FLORIN PERKINS RD & DWY	25	574	4	1	257	34	2	0	5	0	0	1	40	918	6	2	411	54	3	0	8	0	0	2
3/24/2020	700	4	MORTONO ST & SIENA AVE	1	0	5	17	2	0	0	39	0	22	137	31	2	0	8	27	3	0	0	62	0	35	219	50
3/24/2020	700	5	MIDWAY AVE & GALENA AVE	0	2	1	2	2	0	0	0	0	0	0	1	0	3	2	3	3	0	0	0	0	0	0	2
3/24/2020	700	6	MORTONO ST & GALENA AVE	0	0	0	0	1	15	6	0	0	0	0	0	0	0	0	0	2	24	10	0	0	0	0	0
3/24/2020	700	7	MORTONO ST & OKINAWA ST	0	0	5	0	0	0	0	1	0	27	33	0	0	0	8	0	0	0	0	2	0	43	53	0
3/24/2020	700	8	FLORIN PERKINS RD & ELDER CREEK RD	56	400	52	26	190	43	106	169	83	88	140	73	90	640	83	42	304	69	170	270	133	141	224	117

Existing PM

Turning Movement Count

60 Minute Counts

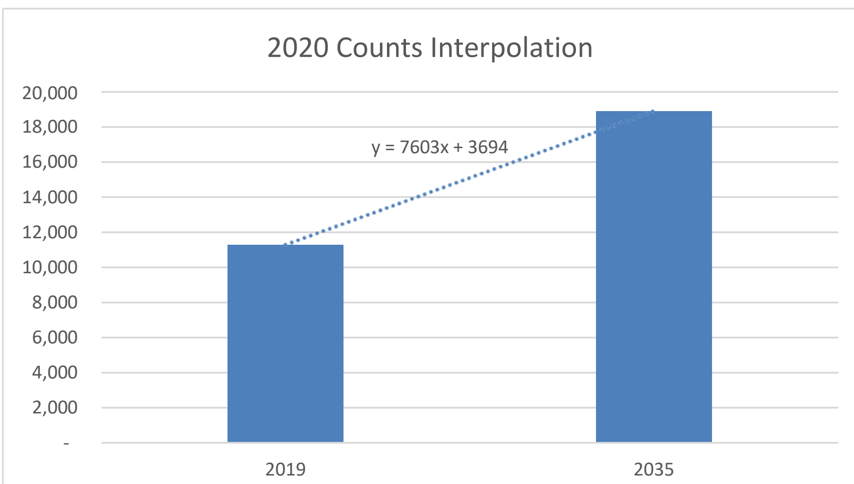
				March 2020 Counts												Scaled Counts											
DATE	TIME	INTID		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
3/24/2020	1600	1	FLORIN PERKINS RD & FRUITRIDGE RD	104	376	103	54	358	77	67	159	75	66	235	51	166	602	165	86	573	123	107	254	120	106	376	82
3/24/2020	1600	2	FLORIN PERKINS RD & THYS CT	14	456	5	6	489	31	54	1	61	10	1	13	22	730	8	10	782	50	86	2	98	16	2	21
3/24/2020	1600	3	FLORIN PERKINS RD & DWY	2	352	3	0	539	6	32	0	31	6	0	3	3	563	5	0	862	10	51	0	50	10	0	5
3/24/2020	1600	4	MORTONO ST & SIENA AVE	0	0	15	17	0	1	1	83	0	2	32	11	0	0	24	27	0	2	2	133	0	3	51	18
3/24/2020	1600	5	MIDWAY AVE & GALENA AVE	0	10	1	1	3	0	0	0	0	1	0	1	0	16	2	2	5	0	0	0	0	2	0	2
3/24/2020	1600	6	MORTONO ST & GALENA AVE	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	2	13	0	0	0	0	0
3/24/2020	1600	7	MORTONO ST & OKINAWA ST	0	0	9	0	0	0	0	54	0	4	4	0	0	0	14	0	0	0	0	86	0	6	6	0
3/24/2020	1600	8	FLORIN PERKINS RD & ELDER CREEK RD	96	252	54	42	407	120	66	139	101	100	293	40	154	403	86	67	651	192	106	222	162	160	469	64

Multiplier Calculation

Volume Location: FLORIN PERKINS RD N.O FRUITRIDGE RD

Average	NB	SB	NB+SB
Daily Volume	8006	7339	15345
AM Peak	07:00 AM	06:00 AM	07:00 AM
AM Volume	555	605	1084
PM Peak	03:00 PM	01:00 PM	03:00 PM
PM Volume	778	581	1332
AM Peak/Daily	0.069	0.082	0.071
PM Peak/Daily	0.097	0.079	0.087

				From General Plan			From General Plan		
	2020			**2019**			**2035**		
Southbound	Daily	Peak AM	Peak PM	Daily	Peak AM	Peak PM	Daily	Peak AM	Peak PM
Counts	7,339	605	581	11,297	931	894	18,900	1,558	1,496
Interpolated 2020	11,772	970.50	932.00						
	Multiplier (Interpolated/Counts)								
	1.60								



APPENDIX C
LEVEL OF SERVICE (LOS) REPORTS
EXISTING AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	285	136	166	230	122	150	618	99	69	456	93
Future Volume (veh/h)	118	285	136	166	230	122	150	618	99	69	456	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	310	148	180	250	133	163	672	108	75	496	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	431	192	210	498	222	193	1774	791	160	1709	762
Arrive On Green	0.10	0.12	0.12	0.12	0.14	0.14	0.11	0.50	0.50	0.09	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	128	310	148	180	250	133	163	672	108	75	496	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.7	9.2	10.0	10.9	7.2	8.7	9.9	12.8	4.0	4.4	9.3	3.9
Cycle Q Clear(g_c), s	7.7	9.2	10.0	10.9	7.2	8.7	9.9	12.8	4.0	4.4	9.3	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	431	192	210	498	222	193	1774	791	160	1709	762
V/C Ratio(X)	0.73	0.72	0.77	0.86	0.50	0.60	0.85	0.38	0.14	0.47	0.29	0.13
Avail Cap(c_a), veh/h	251	840	375	304	940	419	272	1774	791	178	1709	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.28	0.28	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	46.5	46.9	47.6	43.7	44.4	48.2	17.0	14.8	47.6	17.2	15.8
Incr Delay (d2), s/veh	2.7	0.9	2.5	10.9	0.3	1.0	3.6	0.2	0.1	0.8	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.1	4.0	5.5	3.2	3.5	4.6	5.2	1.5	2.0	3.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	47.4	49.3	58.5	44.0	45.3	51.8	17.2	14.9	48.4	17.7	16.2
LnGrp LOS	D	D	D	E	D	D	D	B	B	D	B	B
Approach Vol, veh/h		586			563			943			672	
Approach Delay, s/veh		48.7			49.0			22.9			20.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.1	20.9	16.1	57.9	17.2	18.8	14.1	59.9				
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5				
Max Green Setting (Gmax), s	* 16	* 29	* 17	* 30	* 19	* 26	* 11	* 35				
Max Q Clear Time (g_c+I1), s	9.7	10.7	11.9	11.3	12.9	12.0	6.4	14.8				
Green Ext Time (p_c), s	0.1	1.2	0.1	2.3	0.1	1.4	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			33.2									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	0	48	11	2	5	138	819	16	26	496	163
Future Volume (vph)	48	0	48	11	2	5	138	819	16	26	496	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583		1742		1770	3529		1770	3539	1583
Flt Permitted	0.75	0.75	1.00		0.69		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1318	1318	1583		1247		1770	3529		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	0	52	12	2	5	150	890	17	28	539	177
RTOR Reduction (vph)	0	0	48	0	5	0	0	1	0	0	0	71
Lane Group Flow (vph)	26	26	4	0	14	0	150	906	0	28	539	106
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	8.8	8.8	8.8		4.7		14.2	31.9		48.7	65.9	65.9
Effective Green, g (s)	8.8	8.8	8.8		4.7		14.2	31.9		48.7	65.9	65.9
Actuated g/C Ratio	0.08	0.08	0.08		0.04		0.13	0.29		0.44	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	105	105	126		53		228	1023		783	2120	948
v/s Ratio Prot							c0.08	c0.26		0.02	c0.15	
v/s Ratio Perm	c0.02	0.02	0.00		c0.01							0.07
v/c Ratio	0.25	0.25	0.03		0.27		0.66	0.89		0.04	0.25	0.11
Uniform Delay, d1	47.5	47.5	46.7		51.0		45.6	37.3		17.4	10.4	9.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.69	1.54	4.35
Incremental Delay, d2	0.5	0.5	0.0		1.0		5.1	11.2		0.1	0.3	0.2
Delay (s)	47.9	47.9	46.7		52.0		50.7	48.5		12.1	16.4	41.4
Level of Service	D	D	D		D		D	D		B	B	D
Approach Delay (s)		47.3			52.0			48.8			22.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	40	918	411	54
Future Vol, veh/h	3	8	40	918	411	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	9	43	998	447	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1062	253	506	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	219	746	1055	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	210	746	1055	-	-	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	440	-	-
HCM Lane V/C Ratio	0.041	-	0.027	-	-
HCM Control Delay (s)	8.6	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	67	330	11	32
Demand Flow Rate, veh/h	68	337	11	33
Vehicles Circulating, veh/h	72	2	98	284
Vehicles Exiting, veh/h	245	107	42	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.3	3.7	3.0	3.9
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	T	R	LT	R	LTR	LTR
Assumed Moves	T	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	55	4.976	4.976
Entry Flow, veh/h	68	1938	282	1938	11	33
Cap Entry Lane, veh/h	1282	0.980	1377	0.980	1249	1033
Entry HV Adj Factor	0.980	0	0.980	54	1.000	0.968
Flow Entry, veh/h	67	1900	276	1900	11	32
Cap Entry, veh/h	1257	0.000	1349	0.028	1249	1000
V/C Ratio	0.053	0.0	0.205	0.0	0.009	0.032
Control Delay, s/veh	3.3	A	4.4	A	3.0	3.9
LOS	A	0	A	0	A	A
95th %tile Queue, veh	0		1		0	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	0	0	2	0	3	2	3	3	0
Future Volume (vph)	0	0	0	0	0	2	0	3	2	3	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	2	0	3	2	3	3	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	2	5	6
Volume Left (vph)	0	0	0	3
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.57	-0.21	0.13
Departure Headway (s)	3.9	3.4	3.7	4.0
Degree Utilization, x	0.00	0.00	0.01	0.01
Capacity (veh/h)	911	1063	968	885
Control Delay (s)	6.9	6.4	6.7	7.1
Approach Delay (s)	0.0	6.4	6.7	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	10	0	0	0	2	24
Future Volume (vph)	10	0	0	0	2	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	2	26

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	11	0	28
Volume Left (vph)	11	0	0
Volume Right (vph)	0	0	26
Hadj (s)	0.23	0.00	-0.52
Departure Headway (s)	4.2	3.9	3.4
Degree Utilization, x	0.01	0.00	0.03
Capacity (veh/h)	848	900	1049
Control Delay (s)	7.2	6.9	6.5
Approach Delay (s)	7.2	0.0	6.5
Approach LOS	A	A	A

Intersection Summary			
Delay	6.7		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Future Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	0	47	58	0	0	0	9	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	105	9	0
Volume Left (vph)	0	47	0	0
Volume Right (vph)	0	0	9	0
Hadj (s)	0.03	0.12	-0.57	0.00
Departure Headway (s)	4.0	4.0	3.6	4.1
Degree Utilization, x	0.00	0.12	0.01	0.00
Capacity (veh/h)	876	884	969	850
Control Delay (s)	7.1	7.6	6.6	7.1
Approach Delay (s)	7.1	7.6	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM 6th Signalized Intersection Summary
8: FLORIN PERKINS RD & ELDER CREEK RD 06/14/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	270	133	141	224	117	90	640	83	42	304	69
Future Volume (veh/h)	170	270	133	141	224	117	90	640	83	42	304	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	293	145	153	243	127	98	696	90	46	330	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	1209	539	193	1162	518	185	1000	446	147	924	412
Arrive On Green	0.12	0.34	0.34	0.11	0.33	0.33	0.10	0.28	0.28	0.03	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	185	293	145	153	243	127	98	696	90	46	330	75
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.2	6.5	7.3	9.2	5.4	6.4	5.7	19.3	4.8	2.8	9.6	4.8
Cycle Q Clear(g_c), s	11.2	6.5	7.3	9.2	5.4	6.4	5.7	19.3	4.8	2.8	9.6	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	1209	539	193	1162	518	185	1000	446	147	924	412
V/C Ratio(X)	0.86	0.24	0.27	0.79	0.21	0.25	0.53	0.70	0.20	0.31	0.36	0.18
Avail Cap(c_a), veh/h	277	1209	539	245	1162	518	212	1000	446	212	924	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	26.1	26.4	47.9	26.7	27.1	46.8	35.3	30.1	50.5	41.6	39.4
Incr Delay (d2), s/veh	18.6	0.5	1.2	13.1	0.4	1.1	2.4	4.0	1.0	1.2	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	2.8	2.9	4.8	2.4	2.6	2.7	8.8	1.9	1.3	4.7	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	26.6	27.6	61.0	27.1	28.2	49.1	39.3	31.1	51.7	42.7	40.4
LnGrp LOS	E	C	C	E	C	C	D	D	C	D	D	D
Approach Vol, veh/h		623			523			884			451	
Approach Delay, s/veh		38.5			37.3			39.6			43.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.2	41.8	16.0	34.0	16.8	43.2	13.7	36.3				
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4				
Max Green Setting (Gmax), s	* 17	* 31	* 13	* 29	* 15	* 33	* 13	* 29				
Max Q Clear Time (g_c+I1), s	13.2	8.4	7.7	11.6	11.2	9.3	4.8	21.3				
Green Ext Time (p_c), s	0.2	1.9	0.1	2.2	0.1	2.4	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			39.5									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM Unsignalized Intersection Capacity Analysis
9: Midway Ave & Foodlink Street

06/13/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	10	0	0	0	0	3
Future Volume (vph)	10	0	0	0	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	0	3

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	11	0	3
Volume Left (vph)	11	0	0
Volume Right (vph)	0	0	3
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.4
Degree Utilization, x	0.01	0.00	0.00
Capacity (veh/h)	862	910	1062
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.0		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEVEL OF SERVICE (LOS) REPORTS

EXISTING PM PEAK HOUR

DKS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	254	120	106	376	82	166	602	165	86	573	123
Future Volume (veh/h)	107	254	120	106	376	82	166	602	165	86	573	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	276	130	115	409	89	180	654	179	93	623	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	508	227	160	505	225	208	1856	828	156	1752	781
Arrive On Green	0.09	0.14	0.14	0.09	0.14	0.14	0.12	0.52	0.52	0.09	0.49	0.49
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	276	130	115	409	89	180	654	179	93	623	134
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.6	8.7	9.2	7.5	13.4	6.1	11.9	12.9	7.3	6.0	12.9	5.6
Cycle Q Clear(g_c), s	7.6	8.7	9.2	7.5	13.4	6.1	11.9	12.9	7.3	6.0	12.9	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	508	227	160	505	225	208	1856	828	156	1752	781
V/C Ratio(X)	0.73	0.54	0.57	0.72	0.81	0.40	0.86	0.35	0.22	0.60	0.36	0.17
Avail Cap(c_a), veh/h	248	847	378	249	844	376	338	1856	828	205	1752	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	47.8	48.0	53.2	49.9	46.8	52.0	16.8	15.4	52.7	18.7	16.9
Incr Delay (d2), s/veh	2.3	0.3	0.9	2.3	1.2	0.4	3.5	0.3	0.3	1.4	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.9	3.7	3.5	6.0	2.5	5.5	5.3	2.7	2.8	5.4	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	48.1	48.9	55.4	51.1	47.2	55.5	17.0	15.7	54.1	19.3	17.3
LnGrp LOS	E	D	D	E	D	D	E	B	B	D	B	B
Approach Vol, veh/h		522			613			1013			850	
Approach Delay, s/veh		50.0			51.4			23.6			22.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	22.5	18.2	64.2	15.0	22.6	14.7	67.7
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5
Max Green Setting (Gmax), s	* 17	* 29	* 23	* 33	* 17	* 29	* 14	* 42
Max Q Clear Time (g_c+I1), s	9.6	15.4	13.9	14.9	9.5	11.2	8.0	14.9
Green Ext Time (p_c), s	0.1	1.7	0.2	3.0	0.1	1.3	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	2	98	16	2	21	22	730	8	10	782	50
Future Volume (vph)	86	2	98	16	2	21	22	730	8	10	782	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1691		1770	3533		1770	3539	1583
Flt Permitted	0.73	0.70	1.00		0.27		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1291	1246	1583		466		1770	3533		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	2	107	17	2	23	24	793	9	11	850	54
RTOR Reduction (vph)	0	0	97	0	21	0	0	1	0	0	0	20
Lane Group Flow (vph)	47	48	10	0	21	0	24	801	0	11	850	34
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	11.4	11.4	11.4		10.4		6.6	32.0		50.3	75.2	75.2
Effective Green, g (s)	11.4	11.4	11.4		10.4		6.6	32.0		50.3	75.2	75.2
Actuated g/C Ratio	0.10	0.10	0.10		0.09		0.05	0.27		0.42	0.63	0.63
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	122	118	150		40		97	942		741	2217	992
v/s Ratio Prot							c0.01	c0.23		0.01	c0.24	
v/s Ratio Perm	0.04	c0.04	0.01		c0.05							0.02
v/c Ratio	0.39	0.41	0.07		0.52		0.25	0.85		0.01	0.38	0.03
Uniform Delay, d1	51.0	51.1	49.5		52.4		54.3	41.7		20.4	11.0	8.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.53	1.83	6.45
Incremental Delay, d2	0.7	0.8	0.1		5.6		0.5	9.5		0.0	0.5	0.1
Delay (s)	51.7	52.0	49.5		58.1		54.8	51.3		10.9	20.7	55.2
Level of Service	D	D	D		E		D	D		B	C	E
Approach Delay (s)		50.6			58.1			51.4			22.6	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	50	3	563	862	10
Future Vol, veh/h	51	50	3	563	862	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	54	3	612	937	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1255	474	948	0	-	0
Stage 1	943	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	164	537	720	-	-	-
Stage 1	339	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	537	720	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	338	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.4	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	249	-	-
HCM Lane V/C Ratio	0.005	-	0.441	-	-
HCM Control Delay (s)	10	-	30.4	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0	-	2.1	-	-

Intersection	
Intersection Delay, s/veh	3.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	147	78	26	31
Demand Flow Rate, veh/h	150	79	27	32
Vehicles Circulating, veh/h	33	2	180	59
Vehicles Exiting, veh/h	58	205	3	2
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	2.2	3.5	3.1
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	20	4.976	4.976
Entry Flow, veh/h	150	1938	59	1938	27	32
Cap Entry Lane, veh/h	1334	0.980	1377	0.980	1148	1299
Entry HV Adj Factor	0.981	0	0.981	20	0.963	0.969
Flow Entry, veh/h	147	1900	58	1900	26	31
Cap Entry, veh/h	1308	0.000	1351	0.011	1106	1259
V/C Ratio	0.112	0.0	0.043	0.0	0.024	0.025
Control Delay, s/veh	3.7	A	3.0	A	3.5	3.1
LOS	A	0	A	0	A	A
95th %tile Queue, veh	0		0		0	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	2	0	2	0	16	2	2	5	0
Future Volume (vph)	0	0	0	2	0	2	0	16	2	2	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2	0	2	0	17	2	2	5	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	4	19	7
Volume Left (vph)	0	2	0	2
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.17	-0.03	0.09
Departure Headway (s)	4.0	3.8	3.9	4.0
Degree Utilization, x	0.00	0.00	0.02	0.01
Capacity (veh/h)	900	938	922	889
Control Delay (s)	7.0	6.8	7.0	7.0
Approach Delay (s)	0.0	6.8	7.0	7.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.0		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	13	0	0	0	0	2
Future Volume (vph)	13	0	0	0	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	0	0	0	2

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	14	0	2
Volume Left (vph)	14	0	0
Volume Right (vph)	0	0	2
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.4
Degree Utilization, x	0.02	0.00	0.00
Capacity (veh/h)	863	900	1059
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.1		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Future Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	93	0	7	7	0	0	0	15	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	93	14	15	0
Volume Left (vph)	0	7	0	0
Volume Right (vph)	0	0	15	0
Hadj (s)	0.03	0.13	-0.57	0.00
Departure Headway (s)	4.0	4.1	3.6	4.1
Degree Utilization, x	0.10	0.02	0.01	0.00
Capacity (veh/h)	895	856	970	850
Control Delay (s)	7.4	7.2	6.6	7.1
Approach Delay (s)	7.4	7.2	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	222	162	160	469	64	154	403	86	67	651	192
Future Volume (veh/h)	106	222	162	160	469	64	154	403	86	67	651	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	241	176	174	510	70	167	438	93	73	708	209
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1119	499	203	1176	525	196	1093	487	162	1026	458
Arrive On Green	0.10	0.31	0.31	0.11	0.33	0.33	0.11	0.31	0.31	0.03	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	115	241	176	174	510	70	167	438	93	73	708	209
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.5	6.0	10.3	11.5	13.5	3.7	11.0	11.7	5.2	4.8	23.2	15.0
Cycle Q Clear(g_c), s	7.5	6.0	10.3	11.5	13.5	3.7	11.0	11.7	5.2	4.8	23.2	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	1119	499	203	1176	525	196	1093	487	162	1026	458
V/C Ratio(X)	0.66	0.22	0.35	0.86	0.43	0.13	0.85	0.40	0.19	0.45	0.69	0.46
Avail Cap(c_a), veh/h	227	1119	499	284	1176	525	273	1093	487	194	1026	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	30.2	31.7	52.2	31.4	28.1	52.5	32.8	30.6	55.2	49.1	45.4
Incr Delay (d2), s/veh	4.4	0.4	2.0	16.6	1.2	0.5	16.6	1.1	0.9	1.9	3.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.6	4.2	6.1	6.0	1.5	5.8	5.2	2.1	2.3	11.6	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	30.7	33.6	68.8	32.5	28.6	69.1	33.9	31.4	57.2	52.9	48.6
LnGrp LOS	E	C	C	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		532			754			698			990	
Approach Delay, s/veh		37.3			40.5			42.0			52.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	45.5	17.8	40.1	18.6	43.6	15.5	42.3
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4
Max Green Setting (Gmax), s	* 15	* 34	* 18	* 32	* 19	* 30	* 13	* 37
Max Q Clear Time (g_c+I1), s	9.5	15.5	13.0	25.2	13.5	12.3	6.8	13.7
Green Ext Time (p_c), s	0.1	3.5	0.2	2.9	0.2	2.0	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	44.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	24	0	0	0	0	6
Future Volume (vph)	24	0	0	0	0	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	0	0	0	0	7

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	26	0	7
Volume Left (vph)	26	0	0
Volume Right (vph)	0	0	7
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	4.0	3.4
Degree Utilization, x	0.03	0.00	0.01
Capacity (veh/h)	860	900	1047
Control Delay (s)	7.3	7.0	6.4
Approach Delay (s)	7.3	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.1		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEVEL OF SERVICE (LOS) REPORTS

BASELINE AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	285	277	181	230	122	169	624	101	69	503	93
Future Volume (veh/h)	118	285	277	181	230	122	169	624	101	69	503	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	310	301	197	250	133	184	678	110	75	547	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	748	333	227	849	379	213	1423	635	160	1319	588
Arrive On Green	0.10	0.21	0.21	0.13	0.24	0.24	0.16	0.53	0.53	0.09	0.37	0.37
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	128	310	301	197	250	133	184	678	110	75	547	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.7	8.3	20.4	11.9	6.3	7.7	11.1	13.1	3.9	4.4	12.6	4.7
Cycle Q Clear(g_c), s	7.7	8.3	20.4	11.9	6.3	7.7	11.1	13.1	3.9	4.4	12.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	748	333	227	849	379	213	1423	635	160	1319	588
V/C Ratio(X)	0.73	0.41	0.90	0.87	0.29	0.35	0.87	0.48	0.17	0.47	0.41	0.17
Avail Cap(c_a), veh/h	251	840	375	304	940	419	272	1423	635	178	1319	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	37.6	42.3	47.1	34.3	34.8	45.4	18.5	16.3	47.6	25.7	23.2
Incr Delay (d2), s/veh	2.7	0.1	21.5	14.6	0.1	0.2	9.9	0.6	0.3	0.8	1.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.6	9.9	6.2	2.7	3.0	5.3	4.9	1.5	2.0	5.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	37.7	63.8	61.7	34.3	35.0	55.3	19.1	16.6	48.4	26.7	23.9
LnGrp LOS	D	D	E	E	C	C	E	B	B	D	C	C
Approach Vol, veh/h		739			580			972			723	
Approach Delay, s/veh		50.6			43.8			25.7			28.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	31.8	17.3	45.8	18.2	28.6	14.1	49.0
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5
Max Green Setting (Gmax), s	* 16	* 29	* 17	* 30	* 19	* 26	* 11	* 35
Max Q Clear Time (g_c+I1), s	9.7	9.7	13.1	14.6	13.9	22.4	6.4	15.1
Green Ext Time (p_c), s	0.1	1.2	0.1	2.4	0.1	0.8	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	0	60	11	2	5	229	819	16	26	496	366
Future Volume (vph)	76	0	60	11	2	5	229	819	16	26	496	366
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583		1742		1770	3529		1770	3539	1583
Flt Permitted	0.75	0.75	1.00		0.69		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1318	1318	1583		1247		1770	3529		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	0	65	12	2	5	249	890	17	28	539	398
RTOR Reduction (vph)	0	0	60	0	5	0	0	1	0	0	0	186
Lane Group Flow (vph)	41	42	5	0	14	0	249	906	0	28	539	212
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	9.0	9.0	9.0		4.7		21.3	31.9		48.5	58.6	58.6
Effective Green, g (s)	9.0	9.0	9.0		4.7		21.3	31.9		48.5	58.6	58.6
Actuated g/C Ratio	0.08	0.08	0.08		0.04		0.19	0.29		0.44	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	107	107	129		53		342	1023		780	1885	843
v/s Ratio Prot							c0.14	c0.26		0.02	c0.15	
v/s Ratio Perm	0.03	c0.03	0.00		c0.01							0.13
v/c Ratio	0.38	0.39	0.04		0.27		0.73	0.89		0.04	0.29	0.25
Uniform Delay, d1	47.9	47.9	46.5		51.0		41.6	37.3		17.5	14.2	13.9
Progression Factor	1.00	1.00	1.00		1.00		1.21	0.77		0.72	1.34	5.09
Incremental Delay, d2	0.8	0.9	0.0		1.0		5.8	10.2		0.1	0.3	0.6
Delay (s)	48.7	48.8	46.6		52.0		56.2	38.8		12.7	19.4	71.2
Level of Service	D	D	D		D		E	D		B	B	E
Approach Delay (s)		47.8			52.0			42.5			40.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	40	1009	423	54
Future Vol, veh/h	3	8	40	1009	423	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	9	43	1097	460	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1125	260	519	0	-	0
Stage 1	490	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	199	739	1043	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	191	739	1043	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1043	-	415	-	-
HCM Lane V/C Ratio	0.042	-	0.029	-	-
HCM Control Delay (s)	8.6	-	13.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	93	650	28	32
Demand Flow Rate, veh/h	95	663	29	33
Vehicles Circulating, veh/h	206	2	125	610
Vehicles Exiting, veh/h	437	152	176	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	6.4	3.3	5.5
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	T	R	LT	R	LTR	LTR
Assumed Moves	T	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	55	4.976	4.976
Entry Flow, veh/h	95	1938	608	1938	29	33
Cap Entry Lane, veh/h	1118	0.980	1377	0.980	1215	741
Entry HV Adj Factor	0.980	0	0.981	54	0.966	0.968
Flow Entry, veh/h	93	1900	596	1900	28	32
Cap Entry, veh/h	1096	0.000	1351	0.028	1173	717
V/C Ratio	0.085	0.0	0.442	0.0	0.024	0.045
Control Delay, s/veh	4.0	A	7.0	A	3.3	5.5
LOS	A	0	A	0	A	A
95th %tile Queue, veh	0		2		0	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	0	0	2	0	27	2	3	176	0
Future Volume (vph)	0	0	0	0	0	2	0	27	2	3	176	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	2	0	29	2	3	191	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	2	31	194
Volume Left (vph)	0	0	0	3
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.57	0.00	0.04
Departure Headway (s)	4.4	3.8	4.1	4.0
Degree Utilization, x	0.00	0.00	0.04	0.21
Capacity (veh/h)	789	888	863	901
Control Delay (s)	7.4	6.8	7.2	8.0
Approach Delay (s)	0.0	6.8	7.2	8.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	10	0	0	16	123	24
Future Volume (vph)	10	0	0	16	123	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	17	134	26

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	11	17	160
Volume Left (vph)	11	0	0
Volume Right (vph)	0	0	26
Hadj (s)	0.23	0.03	-0.06
Departure Headway (s)	4.5	4.1	3.9
Degree Utilization, x	0.01	0.02	0.17
Capacity (veh/h)	766	856	920
Control Delay (s)	7.6	7.2	7.7
Approach Delay (s)	7.6	7.2	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Future Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	0	47	58	0	0	0	9	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	105	9	0
Volume Left (vph)	0	47	0	0
Volume Right (vph)	0	0	9	0
Hadj (s)	0.03	0.12	-0.57	0.00
Departure Headway (s)	4.0	4.0	3.6	4.1
Degree Utilization, x	0.00	0.12	0.01	0.00
Capacity (veh/h)	876	884	969	850
Control Delay (s)	7.1	7.6	6.6	7.1
Approach Delay (s)	7.1	7.6	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	270	133	141	224	126	90	699	83	45	312	70
Future Volume (veh/h)	194	270	133	141	224	126	90	699	83	45	312	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	293	145	153	243	137	98	760	90	49	339	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	1209	539	193	1112	496	185	991	442	151	924	412
Arrive On Green	0.14	0.34	0.34	0.11	0.31	0.31	0.10	0.28	0.28	0.03	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	211	293	145	153	243	137	98	760	90	49	339	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.8	6.5	7.3	9.2	5.5	7.2	5.7	21.6	4.8	3.0	9.9	4.9
Cycle Q Clear(g_c), s	12.8	6.5	7.3	9.2	5.5	7.2	5.7	21.6	4.8	3.0	9.9	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	1209	539	193	1112	496	185	991	442	151	924	412
V/C Ratio(X)	0.88	0.24	0.27	0.79	0.22	0.28	0.53	0.77	0.20	0.32	0.37	0.18
Avail Cap(c_a), veh/h	277	1209	539	245	1112	496	212	991	442	212	924	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	26.1	26.4	47.9	27.9	28.4	46.8	36.4	30.3	50.4	41.7	39.4
Incr Delay (d2), s/veh	23.2	0.5	1.2	13.1	0.5	1.4	2.4	5.7	1.0	1.2	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	2.8	2.9	4.8	2.4	2.9	2.7	10.0	2.0	1.4	4.8	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	26.6	27.6	61.0	28.3	29.8	49.1	42.0	31.4	51.6	42.9	40.4
LnGrp LOS	E	C	C	E	C	C	D	D	C	D	D	D
Approach Vol, veh/h		649			533			948			464	
Approach Delay, s/veh		40.9			38.1			41.8			43.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	40.2	16.0	34.0	16.8	43.2	13.9	36.1
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4
Max Green Setting (Gmax), s	* 17	* 31	* 13	* 29	* 15	* 33	* 13	* 29
Max Q Clear Time (g_c+I1), s	14.8	9.2	7.7	11.9	11.2	9.3	5.0	23.6
Green Ext Time (p_c), s	0.1	1.9	0.1	2.2	0.1	2.4	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM Unsignalized Intersection Capacity Analysis
9: Midway Ave & Foodlink Street

06/13/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	10	0	0	16	173	3
Future Volume (vph)	10	0	0	16	173	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	17	188	3

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	11	17	191
Volume Left (vph)	11	0	0
Volume Right (vph)	0	0	3
Hadj (s)	0.23	0.03	0.02
Departure Headway (s)	4.6	4.1	4.0
Degree Utilization, x	0.01	0.02	0.21
Capacity (veh/h)	749	849	900
Control Delay (s)	7.6	7.2	8.0
Approach Delay (s)	7.6	7.2	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEVEL OF SERVICE (LOS) REPORTS

BASELINE PM PEAK HOUR

DKS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	254	138	108	376	82	289	647	178	86	580	123
Future Volume (veh/h)	107	254	138	108	376	82	289	647	178	86	580	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	276	150	117	409	89	314	703	193	93	630	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	507	226	160	505	225	333	1856	828	156	1502	670
Arrive On Green	0.09	0.14	0.14	0.09	0.14	0.14	0.37	1.00	1.00	0.09	0.42	0.42
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	276	150	117	409	89	314	703	193	93	630	134
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.6	8.7	10.8	7.7	13.4	6.1	20.4	0.0	0.0	6.0	14.9	6.4
Cycle Q Clear(g_c), s	7.6	8.7	10.8	7.7	13.4	6.1	20.4	0.0	0.0	6.0	14.9	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	507	226	160	505	225	333	1856	828	156	1502	670
V/C Ratio(X)	0.73	0.54	0.66	0.73	0.81	0.40	0.94	0.38	0.23	0.60	0.42	0.20
Avail Cap(c_a), veh/h	248	847	378	249	844	376	338	1856	828	205	1502	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.49	0.49	0.49	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	47.8	48.7	53.2	49.9	46.8	36.9	0.0	0.0	52.7	24.3	21.8
Incr Delay (d2), s/veh	2.3	0.3	1.2	2.4	1.2	0.4	20.7	0.3	0.3	1.4	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.9	4.3	3.5	6.0	2.5	9.2	0.1	0.1	2.8	6.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	48.1	49.9	55.6	51.1	47.2	57.6	0.3	0.3	54.1	25.2	22.5
LnGrp LOS	E	D	D	E	D	D	E	A	A	D	C	C
Approach Vol, veh/h		542			615			1210			857	
Approach Delay, s/veh		50.2			51.4			15.2			27.9	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	22.5	26.7	55.7	15.0	22.6	14.7	67.7
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5
Max Green Setting (Gmax), s	* 17	* 29	* 23	* 33	* 17	* 29	* 14	* 42
Max Q Clear Time (g_c+I1), s	9.6	15.4	22.4	16.9	9.7	12.8	8.0	2.0
Green Ext Time (p_c), s	0.1	1.7	0.0	2.9	0.1	1.3	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	2	179	16	2	21	34	730	8	10	782	77
Future Volume (vph)	267	2	179	16	2	21	34	730	8	10	782	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1686	1583		1691		1770	3533		1770	3539	1583
Flt Permitted	0.73	0.70	1.00		0.27		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1291	1235	1583		466		1770	3533		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	2	195	17	2	23	37	793	9	11	850	84
RTOR Reduction (vph)	0	0	164	0	21	0	0	1	0	0	0	37
Lane Group Flow (vph)	145	147	31	0	21	0	37	801	0	11	850	47
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	19.0	19.0	19.0		10.4		6.6	32.4		42.3	67.6	67.6
Effective Green, g (s)	19.0	19.0	19.0		10.4		6.6	32.4		42.3	67.6	67.6
Actuated g/C Ratio	0.16	0.16	0.16		0.09		0.05	0.27		0.35	0.56	0.56
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	204	195	250		40		97	953		623	1993	891
v/s Ratio Prot							c0.02	c0.23		0.01	c0.24	
v/s Ratio Perm	0.11	c0.12	0.02		c0.05							0.03
v/c Ratio	0.71	0.75	0.12		0.52		0.38	0.84		0.02	0.43	0.05
Uniform Delay, d1	47.9	48.3	43.4		52.4		54.7	41.4		25.3	15.1	11.8
Progression Factor	1.00	1.00	1.00		1.00		1.20	0.81		0.57	1.44	3.21
Incremental Delay, d2	9.3	13.6	0.1		5.6		0.9	8.7		0.0	0.6	0.1
Delay (s)	57.2	61.9	43.4		58.1		66.3	42.2		14.4	22.3	37.9
Level of Service	E	E	D		E		E	D		B	C	D
Approach Delay (s)		53.1			58.1			43.3			23.6	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	50	3	575	943	10
Future Vol, veh/h	51	50	3	575	943	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	54	3	625	1025	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1350	518	1036	0	-	0
Stage 1	1031	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	142	502	667	-	-	-
Stage 1	305	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	141	502	667	-	-	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36.9	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	667	-	219	-	-
HCM Lane V/C Ratio	0.005	-	0.501	-	-
HCM Control Delay (s)	10.4	-	36.9	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0	-	2.5	-	-

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	310	121	148	31
Demand Flow Rate, veh/h	316	123	151	32
Vehicles Circulating, veh/h	52	2	346	103
Vehicles Exiting, veh/h	83	495	22	2
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.9	2.7	5.3	3.2
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	20	4.976	4.976
Entry Flow, veh/h	316	1938	103	1938	151	32
Cap Entry Lane, veh/h	1309	0.980	1377	0.980	970	1242
Entry HV Adj Factor	0.981	0	0.985	20	0.980	0.969
Flow Entry, veh/h	310	1900	101	1900	148	31
Cap Entry, veh/h	1283	0.000	1356	0.011	950	1203
V/C Ratio	0.241	0.0	0.075	0.0	0.156	0.026
Control Delay, s/veh	4.9	A	3.2	A	5.3	3.2
LOS	A	0	A	0	A	A
95th %tile Queue, veh	1		0		1	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	2	0	2	0	166	2	2	27	0
Future Volume (vph)	0	0	0	2	0	2	0	166	2	2	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2	0	2	0	180	2	2	29	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	4	182	31
Volume Left (vph)	0	2	0	2
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.17	0.03	0.05
Departure Headway (s)	4.4	4.2	4.0	4.1
Degree Utilization, x	0.00	0.00	0.20	0.04
Capacity (veh/h)	794	815	895	862
Control Delay (s)	7.4	7.2	8.0	7.3
Approach Delay (s)	0.0	7.2	8.0	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	13	0	0	112	17	2
Future Volume (vph)	13	0	0	112	17	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	0	122	18	2

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	14	122	20
Volume Left (vph)	14	0	0
Volume Right (vph)	0	0	2
Hadj (s)	0.23	0.03	-0.03
Departure Headway (s)	4.4	4.0	4.0
Degree Utilization, x	0.02	0.14	0.02
Capacity (veh/h)	783	888	883
Control Delay (s)	7.5	7.6	7.1
Approach Delay (s)	7.5	7.6	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Future Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	93	0	7	7	0	0	0	15	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	93	14	15	0
Volume Left (vph)	0	7	0	0
Volume Right (vph)	0	0	15	0
Hadj (s)	0.03	0.13	-0.57	0.00
Departure Headway (s)	4.0	4.1	3.6	4.1
Degree Utilization, x	0.10	0.02	0.01	0.00
Capacity (veh/h)	895	856	970	850
Control Delay (s)	7.4	7.2	6.6	7.1
Approach Delay (s)	7.4	7.2	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	222	162	160	469	67	154	412	86	72	709	210
Future Volume (veh/h)	107	222	162	160	469	67	154	412	86	72	709	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	241	176	174	510	73	167	448	93	78	771	228
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1114	497	203	1171	522	196	1093	487	165	1031	460
Arrive On Green	0.10	0.31	0.31	0.11	0.33	0.33	0.11	0.31	0.31	0.03	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	241	176	174	510	73	167	448	93	78	771	228
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.5	6.0	10.3	11.5	13.5	3.9	11.0	12.0	5.2	5.2	25.4	16.4
Cycle Q Clear(g_c), s	7.5	6.0	10.3	11.5	13.5	3.9	11.0	12.0	5.2	5.2	25.4	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	1114	497	203	1171	522	196	1093	487	165	1031	460
V/C Ratio(X)	0.67	0.22	0.35	0.86	0.44	0.14	0.85	0.41	0.19	0.47	0.75	0.50
Avail Cap(c_a), veh/h	227	1114	497	284	1171	522	273	1093	487	194	1031	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	30.3	31.8	52.2	31.5	28.3	52.5	32.9	30.6	55.3	50.0	45.9
Incr Delay (d2), s/veh	4.6	0.4	2.0	16.6	1.2	0.6	16.6	1.1	0.9	2.1	5.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.7	4.2	6.1	6.0	1.6	5.8	5.3	2.1	2.5	12.8	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	30.8	33.8	68.8	32.7	28.8	69.1	34.1	31.4	57.4	54.9	49.7
LnGrp LOS	E	C	C	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		533			757			708			1077	
Approach Delay, s/veh		37.5			40.6			42.0			54.0	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.6	45.3	17.8	40.2	18.6	43.4	15.7	42.3				
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4				
Max Green Setting (Gmax), s	* 15	* 34	* 18	* 32	* 19	* 30	* 13	* 37				
Max Q Clear Time (g_c+I1), s	9.5	15.5	13.0	27.4	13.5	12.3	7.2	14.0				
Green Ext Time (p_c), s	0.1	3.5	0.2	2.3	0.2	2.0	0.1	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			45.1									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	24	0	0	112	23	6
Future Volume (vph)	24	0	0	112	23	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	0	0	122	25	7

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	26	122	32
Volume Left (vph)	26	0	0
Volume Right (vph)	0	0	7
Hadj (s)	0.23	0.03	-0.10
Departure Headway (s)	4.5	4.0	4.0
Degree Utilization, x	0.03	0.14	0.04
Capacity (veh/h)	777	877	889
Control Delay (s)	7.6	7.7	7.1
Approach Delay (s)	7.6	7.7	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEVEL OF SERVICE (LOS) REPORTS

BASELINE PLUS PROJECT AM PEAK HOUR

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	285	394	193	230	122	185	629	103	69	542	93
Future Volume (veh/h)	118	285	394	193	230	122	185	629	103	69	542	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	310	428	210	250	133	201	684	112	75	589	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	840	375	240	967	431	230	1305	582	160	1165	520
Arrive On Green	0.10	0.24	0.24	0.13	0.27	0.27	0.13	0.37	0.37	0.09	0.33	0.33
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	128	310	428	210	250	133	201	684	112	75	589	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.7	8.0	26.0	12.7	6.1	7.3	12.2	16.6	5.3	4.4	14.7	5.0
Cycle Q Clear(g_c), s	7.7	8.0	26.0	12.7	6.1	7.3	12.2	16.6	5.3	4.4	14.7	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	840	375	240	967	431	230	1305	582	160	1165	520
V/C Ratio(X)	0.73	0.37	1.14	0.88	0.26	0.31	0.87	0.52	0.19	0.47	0.51	0.19
Avail Cap(c_a), veh/h	251	840	375	304	967	431	272	1305	582	178	1165	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	35.1	42.0	46.7	31.3	31.8	47.0	27.3	23.7	47.6	29.8	26.5
Incr Delay (d2), s/veh	2.7	0.1	91.2	17.3	0.1	0.1	11.9	0.8	0.4	0.8	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.5	19.5	6.8	2.6	2.8	6.1	7.1	2.0	2.0	6.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	35.2	133.2	64.0	31.4	32.0	58.9	28.1	24.1	48.4	31.4	27.4
LnGrp LOS	D	D	F	E	C	C	E	C	C	D	C	C
Approach Vol, veh/h		866			593			997			765	
Approach Delay, s/veh		86.0			43.1			33.8			32.5	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	35.4	18.4	41.1	19.0	31.5	14.1	45.4
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5
Max Green Setting (Gmax), s	* 16	* 29	* 17	* 30	* 19	* 26	* 11	* 35
Max Q Clear Time (g_c+I1), s	9.7	9.3	14.2	16.7	14.7	28.0	6.4	18.6
Green Ext Time (p_c), s	0.1	1.2	0.1	2.4	0.1	0.0	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Edition methodology expects strict NEMA phasing.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	270	133	141	224	126	90	699	83	45	312	70
Future Volume (veh/h)	194	270	133	141	224	126	90	699	83	45	312	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	293	145	153	243	137	98	760	90	49	339	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	1209	539	193	1112	496	185	991	442	151	924	412
Arrive On Green	0.14	0.34	0.34	0.11	0.31	0.31	0.10	0.28	0.28	0.03	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	211	293	145	153	243	137	98	760	90	49	339	76
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.8	6.5	7.3	9.2	5.5	7.2	5.7	21.6	4.8	3.0	9.9	4.9
Cycle Q Clear(g_c), s	12.8	6.5	7.3	9.2	5.5	7.2	5.7	21.6	4.8	3.0	9.9	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	1209	539	193	1112	496	185	991	442	151	924	412
V/C Ratio(X)	0.88	0.24	0.27	0.79	0.22	0.28	0.53	0.77	0.20	0.32	0.37	0.18
Avail Cap(c_a), veh/h	277	1209	539	245	1112	496	212	991	442	212	924	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	26.1	26.4	47.9	27.9	28.4	46.8	36.4	30.3	50.4	41.7	39.4
Incr Delay (d2), s/veh	23.2	0.5	1.2	13.1	0.5	1.4	2.4	5.7	1.0	1.2	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	2.8	2.9	4.8	2.4	2.9	2.7	10.0	2.0	1.4	4.8	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	26.6	27.6	61.0	28.3	29.8	49.1	42.0	31.4	51.6	42.9	40.4
LnGrp LOS	E	C	C	E	C	C	D	D	C	D	D	D
Approach Vol, veh/h		649			533			948			464	
Approach Delay, s/veh		40.9			38.1			41.8			43.4	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	40.2	16.0	34.0	16.8	43.2	13.9	36.1				
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4				
Max Green Setting (Gmax), s	* 17	* 31	* 13	* 29	* 15	* 33	* 13	* 29				
Max Q Clear Time (g_c+I1), s	14.8	9.2	7.7	11.9	11.2	9.3	5.0	23.6				
Green Ext Time (p_c), s	0.1	1.9	0.1	2.2	0.1	2.4	0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			41.1									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	0	70	11	2	5	305	819	16	26	496	534
Future Volume (vph)	99	0	70	11	2	5	305	819	16	26	496	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583		1742		1770	3529		1770	3539	1583
Flt Permitted	0.75	0.75	1.00		0.69		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1318	1318	1583		1247		1770	3529		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	0	76	12	2	5	332	890	17	28	539	580
RTOR Reduction (vph)	0	0	70	0	5	0	0	1	0	0	0	333
Lane Group Flow (vph)	54	54	6	0	14	0	332	906	0	28	539	247
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	9.3	9.3	9.3		4.7		32.7	31.9		48.2	46.9	46.9
Effective Green, g (s)	9.3	9.3	9.3		4.7		32.7	31.9		48.2	46.9	46.9
Actuated g/C Ratio	0.08	0.08	0.08		0.04		0.30	0.29		0.44	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	111	111	133		53		526	1023		775	1508	674
v/s Ratio Prot							c0.19	c0.26		0.02	0.15	
v/s Ratio Perm	c0.04	0.04	0.00		c0.01							c0.16
v/c Ratio	0.49	0.49	0.05		0.27		0.63	0.89		0.04	0.36	0.37
Uniform Delay, d1	48.1	48.1	46.3		51.0		33.4	37.3		17.6	21.4	21.5
Progression Factor	1.00	1.00	1.00		1.00		1.36	0.78		0.79	1.16	4.91
Incremental Delay, d2	1.2	1.2	0.1		1.0		1.7	10.4		0.1	0.6	1.3
Delay (s)	49.3	49.3	46.3		52.0		47.2	39.6		13.9	25.4	106.6
Level of Service	D	D	D		D		D	D		B	C	F
Approach Delay (s)		48.1			52.0			41.6			66.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	40	1085	433	54
Future Vol, veh/h	3	8	40	1085	433	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	9	43	1179	471	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1177	265	530	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	184	733	1033	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	733	1033	-	-	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	467	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	393	-	-
HCM Lane V/C Ratio	0.042	-	0.03	-	-
HCM Control Delay (s)	8.6	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	129	915	28	32
Demand Flow Rate, veh/h	132	933	29	33
Vehicles Circulating, veh/h	206	2	162	880
Vehicles Exiting, veh/h	707	189	176	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.3	9.8	3.4	7.3
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	T	R	LT	R	LTR	LTR
Assumed Moves	T	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	55	4.976	4.976
Entry Flow, veh/h	132	1938	878	1938	29	33
Cap Entry Lane, veh/h	1118	0.980	1377	0.980	1170	562
Entry HV Adj Factor	0.980	0	0.981	54	0.966	0.968
Flow Entry, veh/h	129	1900	861	1900	28	32
Cap Entry, veh/h	1096	0.000	1351	0.028	1129	544
V/C Ratio	0.118	0.0	0.638	0.0	0.025	0.059
Control Delay, s/veh	4.3	A	10.4	A	3.4	7.3
LOS	A	0	B	0	A	A
95th %tile Queue, veh	0		5		0	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	0	0	2	0	60	2	3	420	0
Future Volume (vph)	0	0	0	0	0	2	0	60	2	3	420	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	2	0	65	2	3	457	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	2	67	460
Volume Left (vph)	0	0	0	3
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.57	0.02	0.04
Departure Headway (s)	5.0	4.4	4.3	4.0
Degree Utilization, x	0.00	0.00	0.08	0.51
Capacity (veh/h)	651	714	804	884
Control Delay (s)	8.0	7.5	7.7	11.1
Approach Delay (s)	0.0	7.5	7.7	11.1
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.7		
Level of Service	B		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	10	0	0	16	123	24
Future Volume (vph)	10	0	0	16	123	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	17	134	26

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	11	17	160
Volume Left (vph)	11	0	0
Volume Right (vph)	0	0	26
Hadj (s)	0.23	0.03	-0.06
Departure Headway (s)	4.5	4.1	3.9
Degree Utilization, x	0.01	0.02	0.17
Capacity (veh/h)	766	856	920
Control Delay (s)	7.6	7.2	7.7
Approach Delay (s)	7.6	7.2	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Future Volume (vph)	0	2	0	43	53	0	0	0	8	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	0	47	58	0	0	0	9	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	105	9	0
Volume Left (vph)	0	47	0	0
Volume Right (vph)	0	0	9	0
Hadj (s)	0.03	0.12	-0.57	0.00
Departure Headway (s)	4.0	4.0	3.6	4.1
Degree Utilization, x	0.00	0.12	0.01	0.00
Capacity (veh/h)	876	884	969	850
Control Delay (s)	7.1	7.6	6.6	7.1
Approach Delay (s)	7.1	7.6	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	270	133	141	224	133	90	748	83	48	319	71
Future Volume (veh/h)	214	270	133	141	224	133	90	748	83	48	319	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	233	293	145	153	243	145	98	813	90	52	347	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	1209	539	193	1070	477	185	984	439	155	924	412
Arrive On Green	0.15	0.34	0.34	0.11	0.30	0.30	0.10	0.28	0.28	0.03	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	233	293	145	153	243	145	98	813	90	52	347	77
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	14.1	6.5	7.3	9.2	5.6	7.7	5.7	23.6	4.8	3.1	10.1	5.0
Cycle Q Clear(g_c), s	14.1	6.5	7.3	9.2	5.6	7.7	5.7	23.6	4.8	3.1	10.1	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1209	539	193	1070	477	185	984	439	155	924	412
V/C Ratio(X)	0.89	0.24	0.27	0.79	0.23	0.30	0.53	0.83	0.21	0.34	0.38	0.19
Avail Cap(c_a), veh/h	277	1209	539	245	1070	477	212	984	439	212	924	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	26.1	26.4	47.9	28.8	29.6	46.8	37.3	30.5	50.3	41.8	39.5
Incr Delay (d2), s/veh	26.9	0.5	1.2	13.1	0.5	1.6	2.4	7.9	1.1	1.3	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	2.8	2.9	4.8	2.5	3.2	2.7	11.2	2.0	1.5	5.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.0	26.6	27.6	61.0	29.3	31.2	49.1	45.2	31.6	51.6	43.0	40.5
LnGrp LOS	E	C	C	E	C	C	D	D	C	D	D	D
Approach Vol, veh/h		671			541			1001			476	
Approach Delay, s/veh		42.9			38.8			44.4			43.5	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.1	38.9	16.0	34.0	16.8	43.2	14.2	35.8				
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4				
Max Green Setting (Gmax), s	* 17	* 31	* 13	* 29	* 15	* 33	* 13	* 29				
Max Q Clear Time (g_c+I1), s	16.1	9.7	7.7	12.1	11.2	9.3	5.1	25.6				
Green Ext Time (p_c), s	0.1	2.0	0.1	2.3	0.1	2.4	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			42.7									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	35	0	0	24	229	191
Future Volume (vph)	35	0	0	24	229	191
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	0	26	249	208

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	38	26	457
Volume Left (vph)	38	0	0
Volume Right (vph)	0	0	208
Hadj (s)	0.23	0.03	-0.24
Departure Headway (s)	5.1	4.4	3.8
Degree Utilization, x	0.05	0.03	0.48
Capacity (veh/h)	640	777	940
Control Delay (s)	8.4	7.6	10.3
Approach Delay (s)	8.4	7.6	10.3
Approach LOS	A	A	B

Intersection Summary			
Delay	10.0		
Level of Service	A		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

LEVEL OF SERVICE (LOS) REPORTS

BASELINE PLUS PROJECT PM PEAK HOUR

DKS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	254	154	110	376	82	387	683	188	86	586	123
Future Volume (veh/h)	107	254	154	110	376	82	387	683	188	86	586	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	276	167	120	409	89	421	742	204	93	637	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	507	226	160	505	225	338	1856	828	156	1492	666
Arrive On Green	0.09	0.14	0.14	0.09	0.14	0.14	0.38	1.00	1.00	0.09	0.42	0.42
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	276	167	120	409	89	421	742	204	93	637	134
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.6	8.7	12.1	7.9	13.4	6.1	22.8	0.0	0.0	6.0	15.2	6.4
Cycle Q Clear(g_c), s	7.6	8.7	12.1	7.9	13.4	6.1	22.8	0.0	0.0	6.0	15.2	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	507	226	160	505	225	338	1856	828	156	1492	666
V/C Ratio(X)	0.73	0.54	0.74	0.75	0.81	0.40	1.24	0.40	0.25	0.60	0.43	0.20
Avail Cap(c_a), veh/h	248	847	378	249	844	376	338	1856	828	205	1492	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.49	0.49	0.49	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	47.8	49.3	53.3	49.9	46.8	37.2	0.0	0.0	52.7	24.6	22.1
Incr Delay (d2), s/veh	2.3	0.3	1.8	2.6	1.2	0.4	121.7	0.3	0.3	1.4	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.9	4.9	3.7	6.0	2.5	19.6	0.1	0.1	2.8	6.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	48.2	51.1	55.9	51.1	47.2	158.9	0.3	0.3	54.1	25.5	22.7
LnGrp LOS	E	D	D	E	D	D	F	A	A	D	C	C
Approach Vol, veh/h		559			618			1367			864	
Approach Delay, s/veh		50.6			51.5			49.2			28.1	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	22.5	27.0	55.4	15.0	22.6	14.7	67.7
Change Period (Y+Rc), s	* 4.3	* 5.5	* 4.2	* 5	* 4.2	* 5.5	* 4.2	* 5
Max Green Setting (Gmax), s	* 17	* 29	* 23	* 33	* 17	* 29	* 14	* 42
Max Q Clear Time (g_c+I1), s	9.6	15.4	24.8	17.2	9.9	14.1	8.0	2.0
Green Ext Time (p_c), s	0.1	1.7	0.0	2.9	0.1	1.3	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	411	2	244	1	2	21	45	730	8	10	782	100
Future Volume (vph)	411	2	244	1	2	21	45	730	8	10	782	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1686	1583		1637		1770	3533		1770	3539	1583
Flt Permitted	0.74	0.71	1.00		0.33		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1310	1255	1583		538		1770	3533		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	447	2	265	1	2	23	49	793	9	11	850	109
RTOR Reduction (vph)	0	0	172	0	22	0	0	1	0	0	0	55
Lane Group Flow (vph)	223	226	93	0	4	0	49	801	0	11	850	54
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		2			1		3	8		7	4	
Permitted Phases	2		2	1								4
Actuated Green, G (s)	28.5	28.5	28.5		6.6		8.8	32.2		36.8	59.7	59.7
Effective Green, g (s)	28.5	28.5	28.5		6.6		8.8	32.2		36.8	59.7	59.7
Actuated g/C Ratio	0.24	0.24	0.24		0.05		0.07	0.27		0.31	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0		3.8		4.0	4.6		3.5	4.6	4.6
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	311	298	375		29		129	948		542	1760	787
v/s Ratio Prot							c0.03	c0.23		0.01	c0.24	
v/s Ratio Perm	0.17	c0.18	0.06		c0.01							0.03
v/c Ratio	0.72	0.76	0.25		0.15		0.38	0.85		0.02	0.48	0.07
Uniform Delay, d1	42.0	42.5	37.1		54.0		53.0	41.5		29.0	19.9	15.7
Progression Factor	1.00	1.00	1.00		1.00		1.27	0.81		0.61	1.29	3.50
Incremental Delay, d2	6.4	9.4	0.1		0.9		0.7	9.0		0.1	0.8	0.1
Delay (s)	48.5	52.0	37.2		54.9		68.1	42.7		17.8	26.5	55.0
Level of Service	D	D	D		D		E	D		B	C	D
Approach Delay (s)		45.4			54.9			44.2			29.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	2.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	50	3	586	1008	10
Future Vol, veh/h	51	50	3	586	1008	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	54	3	637	1096	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1427	554	1107	0	-	0
Stage 1	1102	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	126	476	626	-	-	-
Stage 1	280	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	476	626	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	279	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.1	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	626	-	197	-	-
HCM Lane V/C Ratio	0.005	-	0.557	-	-
HCM Control Delay (s)	10.8	-	44.1	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0	-	3	-	-

Intersection	
Intersection Delay, s/veh	6.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	537	158	148	31
Demand Flow Rate, veh/h	548	160	151	32
Vehicles Circulating, veh/h	52	2	578	140
Vehicles Exiting, veh/h	120	727	22	2
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.9	3.0	7.0	3.3
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Bypass	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized		Free		Free		
Lane Util	1.000		1.000		1.000	1.000
Follow-Up Headway, s	2.609		2.609		2.609	2.609
Critical Headway, s	4.976	0	4.976	20	4.976	4.976
Entry Flow, veh/h	548	1938	140	1938	151	32
Cap Entry Lane, veh/h	1309	0.980	1377	0.980	765	1196
Entry HV Adj Factor	0.980	0	0.983	20	0.980	0.969
Flow Entry, veh/h	537	1900	138	1900	148	31
Cap Entry, veh/h	1283	0.000	1354	0.011	750	1159
V/C Ratio	0.419	0.0	0.102	0.0	0.197	0.027
Control Delay, s/veh	6.9	A	3.5	A	7.0	3.3
LOS	A	0	A	0	A	A
95th %tile Queue, veh	2		0		1	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	0	2	0	2	0	375	2	2	61	0
Future Volume (vph)	0	0	0	2	0	2	0	375	2	2	61	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2	0	2	0	408	2	2	66	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	4	410	68
Volume Left (vph)	0	2	0	2
Volume Right (vph)	0	2	2	0
Hadj (s)	0.00	-0.17	0.03	0.04
Departure Headway (s)	4.9	4.7	4.0	4.3
Degree Utilization, x	0.00	0.01	0.46	0.08
Capacity (veh/h)	668	680	889	815
Control Delay (s)	7.9	7.8	10.3	7.7
Approach Delay (s)	0.0	7.8	10.3	7.7
Approach LOS	A	A	B	A

Intersection Summary			
Delay	9.9		
Level of Service	A		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	13	0	0	112	17	2
Future Volume (vph)	13	0	0	112	17	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	0	122	18	2

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	14	122	20
Volume Left (vph)	14	0	0
Volume Right (vph)	0	0	2
Hadj (s)	0.23	0.03	-0.03
Departure Headway (s)	4.4	4.0	4.0
Degree Utilization, x	0.02	0.14	0.02
Capacity (veh/h)	783	888	883
Control Delay (s)	7.5	7.6	7.1
Approach Delay (s)	7.5	7.6	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: Mortono St & OKINAWA ST

05/12/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Future Volume (vph)	0	86	0	6	6	0	0	0	14	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	93	0	7	7	0	0	0	15	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	93	14	15	0
Volume Left (vph)	0	7	0	0
Volume Right (vph)	0	0	15	0
Hadj (s)	0.03	0.13	-0.57	0.00
Departure Headway (s)	4.0	4.1	3.6	4.1
Degree Utilization, x	0.10	0.02	0.01	0.00
Capacity (veh/h)	895	856	970	850
Control Delay (s)	7.4	7.2	6.6	7.1
Approach Delay (s)	7.4	7.2	6.6	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	222	162	160	469	69	154	419	86	76	755	225
Future Volume (veh/h)	108	222	162	160	469	69	154	419	86	76	755	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	241	176	174	510	75	167	455	93	83	821	245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1110	495	203	1167	520	196	1093	487	167	1035	462
Arrive On Green	0.10	0.31	0.31	0.11	0.33	0.33	0.11	0.31	0.31	0.03	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	117	241	176	174	510	75	167	455	93	83	821	245
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.6	6.0	10.3	11.5	13.5	4.0	11.0	12.2	5.2	5.5	27.1	17.7
Cycle Q Clear(g_c), s	7.6	6.0	10.3	11.5	13.5	4.0	11.0	12.2	5.2	5.5	27.1	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	1110	495	203	1167	520	196	1093	487	167	1035	462
V/C Ratio(X)	0.67	0.22	0.36	0.86	0.44	0.14	0.85	0.42	0.19	0.50	0.79	0.53
Avail Cap(c_a), veh/h	227	1110	495	284	1167	520	273	1093	487	194	1035	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	30.4	31.9	52.2	31.6	28.4	52.5	33.0	30.6	55.4	50.7	46.4
Incr Delay (d2), s/veh	4.9	0.4	2.0	16.6	1.2	0.6	16.6	1.2	0.9	2.3	6.2	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.7	4.2	6.1	6.0	1.6	5.8	5.4	2.1	2.7	13.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	30.9	33.9	68.8	32.8	29.0	69.1	34.2	31.4	57.6	56.9	50.7
LnGrp LOS	E	C	C	E	C	C	E	C	C	E	E	D
Approach Vol, veh/h		534			759			715			1149	
Approach Delay, s/veh		37.6			40.7			42.0			55.7	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	45.2	17.8	40.4	18.6	43.3	15.8	42.3
Change Period (Y+Rc), s	* 4.9	* 5.8	* 4.6	* 5.4	* 4.9	* 5.8	* 4.6	* 5.4
Max Green Setting (Gmax), s	* 15	* 34	* 18	* 32	* 19	* 30	* 13	* 37
Max Q Clear Time (g_c+I1), s	9.6	15.5	13.0	29.1	13.5	12.3	7.5	14.2
Green Ext Time (p_c), s	0.1	3.5	0.2	1.5	0.2	2.0	0.1	3.4

Intersection Summary		
HCM 6th Ctrl Delay		45.9
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Yield			Yield	Yield	
Traffic Volume (vph)	185	0	0	160	31	32
Future Volume (vph)	185	0	0	160	31	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	201	0	0	174	34	35

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	201	174	69
Volume Left (vph)	201	0	0
Volume Right (vph)	0	0	35
Hadj (s)	0.23	0.03	-0.27
Departure Headway (s)	4.7	4.5	4.3
Degree Utilization, x	0.26	0.22	0.08
Capacity (veh/h)	725	759	774
Control Delay (s)	9.4	8.8	7.7
Approach Delay (s)	9.4	8.8	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	8.9		
Level of Service	A		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

QUEUING REPORTS

EXISTING AM PEAK HOUR

DKS

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	310	148	180	250	133	163	672	108	75	496	101
v/c Ratio	0.62	0.68	0.44	0.73	0.47	0.37	0.68	0.39	0.13	0.41	0.33	0.13
Control Delay	59.5	53.0	11.2	62.8	45.0	8.2	43.4	48.6	28.5	53.2	23.9	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	53.0	11.2	62.8	45.0	8.2	43.4	48.6	28.5	53.2	23.9	1.6
Queue Length 50th (ft)	88	111	0	123	85	0	124	270	50	51	119	0
Queue Length 95th (ft)	147	151	55	193	120	43	185	331	m91	96	199	12
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	249	836	487	302	936	526	280	1717	824	183	1508	761
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.37	0.30	0.60	0.27	0.25	0.58	0.39	0.13	0.41	0.33	0.13

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	26	26	52	19	150	907	28	539	177
v/c Ratio	0.20	0.20	0.19	0.14	0.66	0.81	0.04	0.24	0.17
Control Delay	49.5	49.5	1.5	39.0	61.8	32.0	18.0	18.3	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	49.5	1.5	39.0	61.8	32.0	18.0	18.3	11.2
Queue Length 50th (ft)	17	17	0	9	107	320	6	124	29
Queue Length 95th (ft)	48	48	0	32	m178	303	m35	238	92
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	311	311	471	153	280	1425	783	2219	1058
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.08	0.11	0.12	0.54	0.64	0.04	0.24	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	185	293	145	153	243	127	98	696	90	46	330	75
v/c Ratio	0.74	0.53	0.39	0.69	0.48	0.38	0.47	0.44	0.12	0.24	0.21	0.10
Control Delay	63.7	46.4	9.9	62.2	47.1	10.9	52.7	23.2	2.1	62.8	15.5	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	46.4	9.9	62.2	47.1	10.9	52.7	23.2	2.1	62.8	15.5	4.5
Queue Length 50th (ft)	125	103	0	104	86	0	66	179	0	31	106	12
Queue Length 95th (ft)	#213	141	54	173	122	52	117	253	17	71	97	19
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	275	1045	569	242	981	530	219	1594	780	210	1562	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.28	0.25	0.63	0.25	0.24	0.45	0.44	0.12	0.22	0.21	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX D

QUEUING REPORTS

EXISTING PM PEAK HOUR

DKS

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	276	130	115	409	89	180	654	179	93	623	134
v/c Ratio	0.60	0.50	0.36	0.60	0.75	0.25	0.73	0.39	0.21	0.52	0.40	0.17
Control Delay	64.2	48.8	9.4	64.0	56.9	3.5	53.7	52.5	28.2	61.6	25.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	48.8	9.4	64.0	56.9	3.5	53.7	52.5	28.2	61.6	25.9	4.9
Queue Length 50th (ft)	88	104	0	87	161	0	134	275	84	70	165	0
Queue Length 95th (ft)	146	141	50	145	206	15	203	342	137	122	271	42
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	246	843	479	247	840	478	336	1687	848	207	1554	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.33	0.27	0.47	0.49	0.19	0.54	0.39	0.21	0.45	0.40	0.17

Intersection Summary

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	47	48	107	42	24	802	11	850	54
v/c Ratio	0.38	0.40	0.43	0.61	0.15	0.83	0.01	0.37	0.05
Control Delay	60.3	61.6	15.1	63.5	55.0	41.3	14.5	23.0	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	61.6	15.1	63.5	55.0	41.3	14.5	23.0	10.8
Queue Length 50th (ft)	36	37	0	14	19	314	6	294	9
Queue Length 95th (ft)	77	78	54	#56	m47	350	m15	398	46
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	279	269	426	93	162	1425	742	2286	1049
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.18	0.25	0.45	0.15	0.56	0.01	0.37	0.05

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	241	176	174	510	70	167	438	93	73	708	209
v/c Ratio	0.58	0.36	0.40	0.72	0.68	0.16	0.68	0.29	0.13	0.40	0.55	0.30
Control Delay	62.4	43.9	8.6	66.7	48.4	0.7	62.5	25.2	3.7	33.2	41.7	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	43.9	8.6	66.7	48.4	0.7	62.5	25.2	3.7	33.2	41.7	19.3
Queue Length 50th (ft)	86	87	0	130	193	0	125	118	0	50	293	103
Queue Length 95th (ft)	147	121	58	205	240	0	190	182	27	73	368	168
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	225	890	530	281	1002	556	284	1515	741	196	1291	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.27	0.33	0.62	0.51	0.13	0.59	0.29	0.13	0.37	0.55	0.30

Intersection Summary

APPENDIX D

QUEUING REPORTS

BASELINE AM PEAK HOUR

Queues
1: FLORIN PERKINS RD & FRUITRIDGE RD

06/14/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	310	301	197	250	133	184	678	110	75	547	101
v/c Ratio	0.62	0.65	0.64	0.78	0.44	0.36	0.71	0.40	0.14	0.41	0.38	0.14
Control Delay	59.5	51.5	11.3	65.4	43.4	7.8	44.7	48.9	28.2	53.2	26.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	51.5	11.3	65.4	43.4	7.8	44.7	48.9	28.2	53.2	26.3	1.8
Queue Length 50th (ft)	88	110	0	135	83	0	140	272	49	51	142	0
Queue Length 95th (ft)	147	150	76	210	118	43	197	334	m89	96	227	13
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	249	836	604	302	936	526	290	1682	809	183	1434	731
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.37	0.50	0.65	0.27	0.25	0.63	0.40	0.14	0.41	0.38	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	41	42	65	19	249	907	28	539	398
v/c Ratio	0.31	0.32	0.24	0.14	0.73	0.81	0.04	0.27	0.37
Control Delay	52.4	52.6	2.0	39.0	61.3	31.7	19.0	21.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	52.6	2.0	39.0	61.3	31.7	19.0	21.5	12.4
Queue Length 50th (ft)	28	29	0	9	185	320	4	133	96
Queue Length 95th (ft)	66	67	0	32	m265	258	m30	235	202
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	311	311	471	153	348	1425	780	1983	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.14	0.14	0.12	0.72	0.64	0.04	0.27	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	211	293	145	153	243	137	98	760	90	49	339	76
v/c Ratio	0.82	0.53	0.39	0.69	0.50	0.41	0.47	0.48	0.12	0.25	0.22	0.10
Control Delay	70.7	46.4	9.9	62.2	47.7	11.0	52.7	23.8	2.1	68.0	11.0	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	46.4	9.9	62.2	47.7	11.0	52.7	23.8	2.1	68.0	11.0	2.5
Queue Length 50th (ft)	145	103	0	104	86	0	66	200	0	15	105	14
Queue Length 95th (ft)	#258	141	54	173	122	54	117	280	17	79	18	0
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	275	1045	569	242	981	537	219	1593	780	210	1561	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.28	0.25	0.63	0.25	0.26	0.45	0.48	0.12	0.23	0.22	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX D
QUEUING REPORTS
BASELINE PM PEAK HOUR

DKS
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	276	150	117	409	89	314	703	193	93	630	134
v/c Ratio	0.60	0.50	0.40	0.61	0.75	0.25	0.81	0.42	0.23	0.52	0.50	0.20
Control Delay	64.2	48.9	9.8	64.3	56.9	3.5	50.0	47.0	21.3	61.6	33.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	48.9	9.8	64.3	56.9	3.5	50.0	47.0	21.3	61.6	33.6	5.8
Queue Length 50th (ft)	88	104	0	89	161	0	211	298	69	70	200	0
Queue Length 95th (ft)	146	141	56	146	206	15	#358	366	114	122	291	45
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	246	843	491	247	840	478	395	1687	855	207	1266	655
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.33	0.31	0.47	0.49	0.19	0.79	0.42	0.23	0.45	0.50	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	145	147	195	42	37	802	11	850	84
v/c Ratio	0.71	0.75	0.47	0.61	0.23	0.82	0.02	0.41	0.09
Control Delay	65.5	70.3	9.3	63.5	64.4	40.2	21.1	26.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	70.3	9.3	63.5	64.4	40.2	21.1	26.3	14.6
Queue Length 50th (ft)	113	116	0	14	29	314	6	344	22
Queue Length 95th (ft)	174	178	60	#56	m66	166	m18	427	78
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	282	270	498	93	162	1425	624	2062	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.54	0.39	0.45	0.23	0.56	0.02	0.41	0.09

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	241	176	174	510	73	167	448	93	78	771	228
v/c Ratio	0.58	0.36	0.40	0.72	0.69	0.16	0.68	0.30	0.13	0.42	0.60	0.32
Control Delay	62.5	43.9	8.6	66.7	48.5	0.8	62.5	25.5	3.8	46.5	36.3	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	43.9	8.6	66.7	48.5	0.8	62.5	25.5	3.8	46.5	36.3	14.1
Queue Length 50th (ft)	87	87	0	130	193	0	125	122	0	40	315	109
Queue Length 95th (ft)	148	121	58	205	240	0	190	187	27	82	398	181
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	225	890	530	281	1002	556	284	1511	740	198	1291	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.27	0.33	0.62	0.51	0.13	0.59	0.30	0.13	0.39	0.60	0.32

Intersection Summary

APPENDIX D

QUEUING REPORTS

BASELINE PLUS PROJECT AM PEAK HOUR

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	310	428	210	250	133	201	684	112	75	589	101
v/c Ratio	0.62	0.57	0.82	0.81	0.39	0.33	0.79	0.42	0.14	0.42	0.43	0.14
Control Delay	59.5	46.3	24.6	68.2	39.9	6.6	52.8	50.6	28.7	54.5	28.9	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	46.3	24.6	68.2	39.9	6.6	52.8	50.6	28.7	54.5	28.9	1.8
Queue Length 50th (ft)	88	110	67	143	82	0	153	274	48	51	161	0
Queue Length 95th (ft)	147	138	176	#235	109	39	#243	336	m87	98	252	13
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	249	836	623	302	936	526	281	1612	782	177	1356	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.37	0.69	0.70	0.27	0.25	0.72	0.42	0.14	0.42	0.43	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	54	54	76	19	332	907	28	539	580
v/c Ratio	0.39	0.39	0.27	0.14	0.63	0.81	0.04	0.34	0.56
Control Delay	54.8	54.8	3.7	39.0	52.8	31.3	21.0	25.6	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	54.8	3.7	39.0	52.8	31.3	21.0	25.6	13.7
Queue Length 50th (ft)	37	37	0	9	247	320	6	134	139
Queue Length 95th (ft)	80	80	9	32	m327	237	m26	235	273
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	311	311	471	153	526	1425	775	1618	1038
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.17	0.16	0.12	0.63	0.64	0.04	0.33	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	293	145	153	243	145	98	813	90	52	347	77
v/c Ratio	0.88	0.53	0.39	0.69	0.52	0.43	0.47	0.51	0.12	0.27	0.22	0.10
Control Delay	77.2	46.2	9.8	62.2	48.3	11.1	52.7	24.5	2.1	67.0	7.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	46.2	9.8	62.2	48.3	11.1	52.7	24.5	2.1	67.0	7.1	1.4
Queue Length 50th (ft)	162	103	0	104	86	0	66	218	0	22	97	14
Queue Length 95th (ft)	#297	141	54	173	122	55	117	303	17	82	21	0
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	275	1045	569	242	981	543	219	1591	779	210	1558	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.28	0.25	0.63	0.25	0.27	0.45	0.51	0.12	0.25	0.22	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX D

QUEUING REPORTS

BASELINE PLUS PROJECT PM PEAK HOUR

Queues

1: FLORIN PERKINS RD & FRUITRIDGE RD 06/14/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	276	167	120	409	89	421	742	204	93	637	134
v/c Ratio	0.60	0.50	0.43	0.62	0.75	0.25	0.79	0.44	0.24	0.52	0.65	0.25
Control Delay	64.2	49.0	9.8	64.8	56.9	3.5	45.3	44.0	17.7	61.6	42.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	49.0	9.8	64.8	56.9	3.5	45.3	44.0	17.7	61.6	42.2	6.3
Queue Length 50th (ft)	88	104	0	91	161	0	280	313	59	70	230	0
Queue Length 95th (ft)	146	141	58	150	206	15	#547	381	m94	122	295	45
Internal Link Dist (ft)		1399			1113			2072			925	
Turn Bay Length (ft)	200		400	200		400	200		400	200		400
Base Capacity (vph)	246	843	504	247	840	478	536	1687	861	207	973	535
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.33	0.33	0.49	0.49	0.19	0.79	0.44	0.24	0.45	0.65	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	223	226	265	26	49	802	11	850	109
v/c Ratio	0.73	0.78	0.49	0.37	0.30	0.81	0.02	0.46	0.12
Control Delay	56.1	60.3	10.3	37.0	69.7	38.6	25.9	29.2	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	60.3	10.3	37.0	69.7	38.6	25.9	29.2	15.8
Queue Length 50th (ft)	168	172	24	2	39	314	6	351	36
Queue Length 95th (ft)	241	248	90	33	m81	155	m15	429	m84
Internal Link Dist (ft)		225		1803		1699		2072	
Turn Bay Length (ft)	100		100		150		200		400
Base Capacity (vph)	325	311	563	105	162	1425	552	1861	884
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.73	0.47	0.25	0.30	0.56	0.02	0.46	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	241	176	174	510	75	167	455	93	83	821	245
v/c Ratio	0.59	0.36	0.40	0.72	0.69	0.17	0.68	0.30	0.13	0.44	0.64	0.35
Control Delay	62.7	43.9	8.6	66.7	48.5	0.8	62.5	25.7	3.8	57.4	35.6	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	43.9	8.6	66.7	48.5	0.8	62.5	25.7	3.8	57.4	35.6	11.8
Queue Length 50th (ft)	88	87	0	130	193	0	125	124	0	42	340	116
Queue Length 95th (ft)	149	121	58	205	240	0	190	192	27	99	#442	146
Internal Link Dist (ft)		2043			1586			856			662	
Turn Bay Length (ft)	350		450	200		200	200		100	150		200
Base Capacity (vph)	225	890	530	281	1002	556	284	1505	737	199	1291	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.27	0.33	0.62	0.51	0.13	0.59	0.30	0.13	0.42	0.64	0.35

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

ATTACHMENT 3
Biological Technical Report

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August 18, 2021

Ms. Katelyn Moore
Development Project Manager
Buzz Oates
555 Capitol Mall, Suite 900
Sacramento, CA 95814

Subject: Biological Resources Letter Report for Valley Oak Logistics Center Accessory Parking, City of Sacramento, CA.

Dear Ms. Moore:

This biological resources letter report has been prepared to document the results of a biological review conducted for the Valley Oak Logistics Center Accessory Parking Project (Project). The study area includes approximately 21.19 acres in the City of Sacramento. The study area was once part of the Sacramento Army Depot (SAAD), but is now privately owned. The study area has a history of ground alteration and disturbance from agricultural, military, and commercial use, and is in an area that is heavily urbanized. This letter considers baseline resources only as there is an existing environmental impact report for development of industrial land uses.

Methods

The following background information was reviewed:

- Topographic maps (Sacramento East);
- Aerial imagery;
- Soil maps from the National Resources Conservation Service (NRCS);
- The California Natural Diversity Database (CNDDB) list of wildlife species documented on the Sacramento East quadrangle and 9 surrounding quadrangles (CDFW, 2021); and
- A U.S. Fish and Wildlife Service (USFWS) list of species that may occur in the vicinity of the study area (USFWS, 2021).

Several species known to occur regionally are regulated pursuant to federal and/or state endangered species laws. In addition, Section 15380(b) of the *CEQA Guidelines* provides a description of rare, endangered, or threatened species that are not included in any listing. Species recognized under these terms are collectively referred to as "special-status species." Special-status species evaluated in this report are defined as:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (61 FR 40, February 28, 1996);

- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 California Code of Regulations [CCR] 670.5);
- Animal species of special concern to CDFW;
- Animals fully protected under Fish and Game Code (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);

Special-status species considered for this analysis are based on the CNDDB and USFWS lists (**Attachment A**). A list of special-status wildlife species that were considered in the analysis and an assessment of their potential to occur within and adjacent to the study area is provided in **Attachment B**. Special-status plants were considered separately in a botanical survey for the Project. The "Potential to Occur" categories are defined as follows:

Unlikely: The study area and surrounding area does not support suitable habitat for a particular species and/or the study area is outside of the species known range;

Low Potential: The study area and/or adjacent area provides only limited amounts and low quality habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate project vicinity;

Medium Potential: The study area and/or adjacent area provides suitable habitat for a particular species; and

High Potential: The study area and/or adjacent area provide ideal habitat conditions for a particular species and/or known populations occur in the within the study area and adjacent area.

Conclusions regarding habitat suitability and species occurrence are based on the analysis of existing literature and databases described previously and known habitats occurring within the study area and regionally. Only species classified as having a medium or high potential for occurrence, or were observed, are discussed further below.

ESA senior biologist Chuck Hughes conducted an initial reconnaissance level biological survey of the study area on October 29, 2020. The site was visited ten times between December 18, 2020 and April 8, 2021 to conduct vernal pool branchiopod (fairy shrimp) surveys authorized by the USFWS, an aquatic resources delineation, an arborist survey, and a botanical survey. The branchiopod surveys were conducted under 10(a)(1)(A) permit TE-185595-4.1. The results of the arborist survey, aquatic resources delineation, listed branchiopod surveys, and botanical survey are discussed in detail in separate reports (ESA, 2021a, 2021b, 2021c, and 2021d, respectively).

Environmental Setting

The study area is located in the Sacramento Valley and is characterized by nearly level ground with substantial past disturbance and some existing development. Elevation ranges from approximately 32–41 feet. The study area was formerly part of the Sacramento Army Depot (SAAD). The SAAD was transferred to the City of Sacramento in the 1990s. The study area is currently privately owned and managed as part of Depot Park, which consists primarily of industrial uses. Land use surrounding the study area is characterized by a patchwork of industrial, commercial, and undeveloped areas.

Soils

Soils within the study area consist primarily of the Hedge loam, 0 to 2 percent slopes, map unit except for streets along the north and east sides that consist of the urban land map unit.

Habitat Types

Habitat types within the study area include non-native annual grassland, urban/developed, vernal pool, wetland swale, seasonal wetland, and ditch. Habitat types are shown in **Attachment C**. Dominant vegetation within the habitat types are provided in detail below.

The majority of the study area is comprised of non-native annual grassland. Dominant vegetation includes rattail sixweeks grass (*Festuca myuros*) and filaree (*Erodium botrys*). Individual California black walnuts (*Juglans hindsii*) occur within the non-native annual grassland near the center of the study area.

Developed areas include remnant concrete pads that once supported small structures or equipment, a gazebo with benches, and a landscaped area with a lawn in the northeast corner of the study area. Ornamental landscape trees occur within the urban/developed areas along Midway Avenue.

Vernal pools, swales, and seasonal wetlands occur within the study area. Dominant vegetation includes water starwort (*Callitriche* sp.), bractless hedge-hyssop (*Gratiola ebracteata*), toad rush (*Juncus bufonius*), spikerush (*Eleocharis macrostachya*), and annual hair grass (*Deschampsia danthonioides*). Woody vegetation comprised of Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and willow (*Salix* sp.) also occurs within the seasonal wetlands.

Special Status Wildlife

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*)

Vernal pool fairy shrimp is a federally threatened species. It inhabits vernal pools of the Central Valley and Coast Ranges. Vernal pool fairy shrimp are found most commonly in small swales, earth slumps, or basalt-flow depression basins with grassy or muddy bottoms in unplowed soils, and occasionally in depressions less than one-meter diameter within sandstone outcrops surrounded by foothill grasslands. When the vernal pools fill with rainwater, vernal pool fairy shrimp hatch from eggs (shell-covered dormant embryos) present in the soil from previous years of breeding. Eggs normally hatch in water around 10°C. Vernal pool fairy shrimp reach maturity approximately 18 days under conditions when daytime temperatures reach 20°C, but 41 days are more typical if water remains near 15°C (Helm, 1998). Vernal pool tadpole shrimp have a similar life cycle.

There are CNDDB occurrences of these species within the former SAAD and near adjacent railroad tracks. The wetlands at the Project site provide habitat for these species. Vernal pool fairy shrimp was observed during the protocol level branchiopod surveys. During the dry season soil survey, samples were collected and sent to D.

Christopher Rogers, a crustacean taxonomist and ecologist. The analysis of the samples identified eggs from the *Branchinecta* genus in 6 features during analysis. The eggs were cultured to maturity and were identified as the federally threatened vernal pool fairy shrimp. During the wet season surveys, vernal pool fairy shrimp was observed as well as the unlisted California linderiella (*Linderiella occidentalis*). No vernal pool tadpole shrimp were found in either the wet or dry season surveys. Vernal pool fairy shrimp occur within the study area. The results of the protocol level vernal pool branchiopod surveys are discussed in detail separately (ESA, 2021c).

Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a California species of special concern. Burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico and east to Texas and Louisiana. Although burrowing owls are migratory in certain areas of their range, these owls are predominantly non-migratory in California. Burrowing owls generally inhabit gently-sloping or flat areas, characterized by low, sparse vegetation. The breeding season for burrowing owls extends from March through August, peaking in April and May (Zeiner et al., 1990). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owl may also use artificial burrows including pipes, culverts, and nest boxes.

There is a CNDDB occurrence of burrowing owl from 2003 in the study area, and several more nearby. The non-native annual grassland provides habitat for this species. Suitable rodent burrows are present within the non-native annual grassland due to a small population of California ground squirrels (*Otospermophilus beecheyi*). A single burrowing owl was observed at a particular burrow on several occasions (Attachment C). The burrow appeared to be a satellite burrow (not a nesting burrow) due to the relatively small amount of feathers and whitewash present, and the fact that a second owl was never observed, either prior to or during the nesting season. Nesting burrows generally have much more sign present.

White-tailed kite (*Elanus leucurus*) and Nesting Birds

The active nests of most species of birds are regulated under the Migratory Bird Treaty Act (MBTA) and Section 3503/3503.5 of the California Fish and Game Code. Birds, including some birds of prey such as white-tailed kite (*Elanus leucurus*) could nest in trees in the study area. Ground-nesting birds could nest in the non-native annual grassland. The generally accepted nesting season for birds extends from February 1 through August 31.

Please contact me with any questions.

Sincerely,

Chuck Hughes, M.S.
Senior Biologist

Attachment A. Agency Lists
Attachment B. Special Status Species Table
Attachment C. Figures

References

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Attachment A
Agency Lists

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Depot Park Midway Avenue

LOCATION

Sacramento County, California

DESCRIPTION

Some(Truck trailer parking.)

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

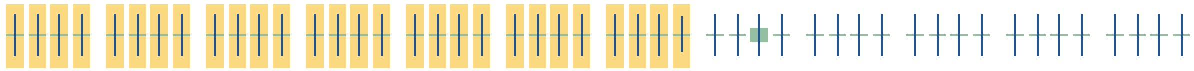
■ probability of presence ■ breeding season | survey effort – no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

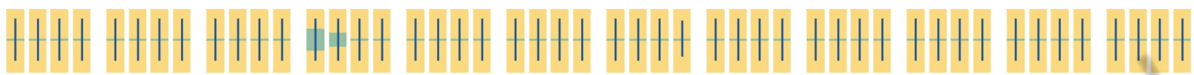
Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Burrowing Owl
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

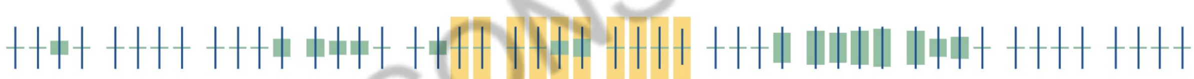
California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



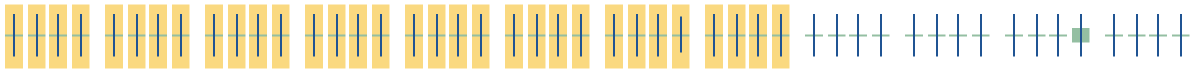
Clark's Grebe
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



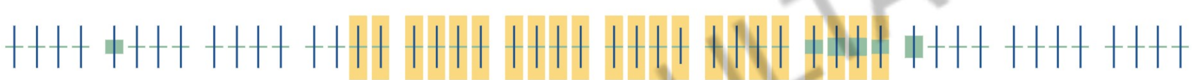
Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



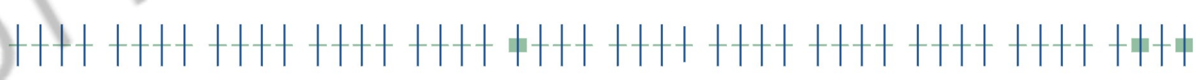
Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



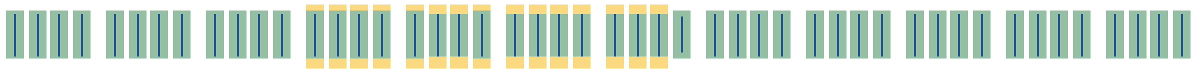
Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



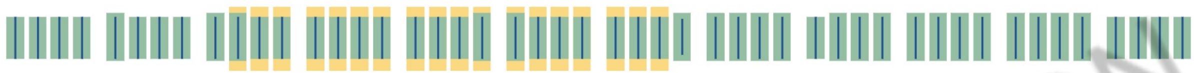
Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

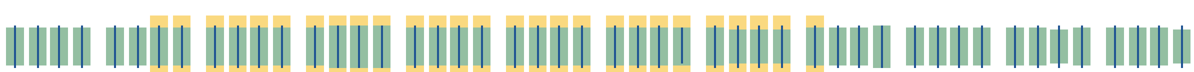


Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



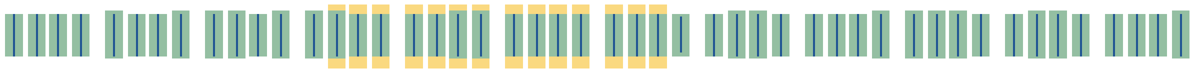
Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

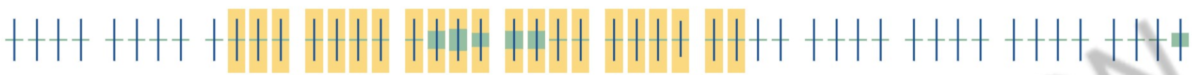


SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

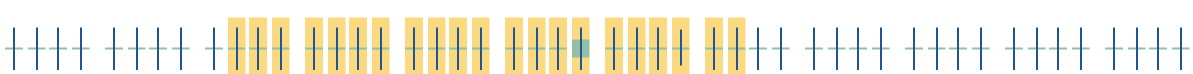


Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

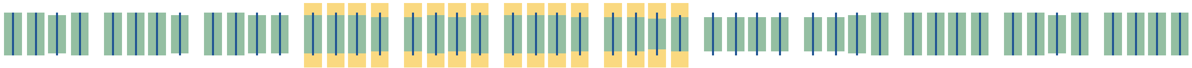


Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

PUBK

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sacramento East (3812154) OR Carmichael (3812153) OR Citrus Heights (3812163) OR Clarksburg (3812145) OR Elk Grove (3812143) OR Florin (3812144) OR Rio Linda (3812164) OR Sacramento West (3812155) OR Taylor Monument (3812165))
 AND County IS (Sacramento)

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	Threatened	G1G2	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
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	
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
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	G5T4?	SH	2B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
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
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S1S2	
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
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?	
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
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	
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	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
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	
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	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
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: 56

Attachment B

Special Status Species Table

SPECIAL-STATUS SPECIES TABLE

Common Name *Scientific Name*	Listing Status USFWS/CDFW	General Habitat Requirements	Potential for Species Occurrence Within the Project Site
Amphibians			
California tiger salamander *Ambystoma californiense*	FT/ST, WL/--	Grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest. Requires temporary breeding ponds to breed. Spends most time underground in animal burrows, especially those of California ground squirrels, valley pocket gophers, and moles. Requires both suitable upland terrestrial habitat with mammal burrows for refuge and temporary breeding ponds in order to survive and reproduce. Found in the Central Valley and adjacent Sierra Nevada foothills up to 1,500 feet. The Cosumnes River marks the northern boundary of the species' range, with the exception of an isolated in the Dunnigan Hills in northern Yolo County.	**Unlikely.** Suitable habitat (seasonal wetlands, vernal pools, annual grassland) is present within the study area. However, the study area is outside known species range.
California red-legged frog *Rana draytonii*	FT/SSC/--	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent or ephemeral water sources: lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County. Likely extirpated from the floor of the Central Valley before 1960 (USFWS 2002).	**Unlikely.** The study area does not provide suitable aquatic habitat and occurs outside of the known extant geographic range for the species.
Western spadefoot *Spea hammondii*	--/SSC/--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying. Found in the Sierra Nevada foothills, Central Valley, Coast Ranges, and coastal counties in southern California.	**Low.** While suitable aquatic habitat (seasonal wetlands, vernal pools) and upland habitat (annual grasslands) is present, none were observed during the protocol level wet season branchiopod surveys.
Birds			
Tricolored blackbird *Agelaius tricolor*	--/ST, SSC/--	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Forages in grassland and cropland. Nests in cattails, tules, and blackberries large enough for at least 50 nesting pairs.	**Low**. The study area does not provide nesting habitat and provides marginal foraging habitat within the disturbed grassland. However, the study area is surrounded by development
Golden eagle *Aquila chrysaetos*	--/CFP/--	Cliffs and escarpments or tall trees for nesting; annual grasslands, chaparral, and oak wood-lands with plentiful medium and large-sized mammals for prey. Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley.	**Low.** No nesting habitat is present within the study area.

SPECIAL-STATUS SPECIES TABLE

Common Name ***Scientific Name***	**Listing Status USFWS/CDFW**	**General Habitat Requirements**	**Potential for Species Occurrence Within the Project Site**
Burrowing owl *Athene cunicularia*	--/SSC/--	Nests and forages in open, dry, annual or perennial grasslands and scrublands characterized by low-growing vegetation. Subterranean nester dependent upon burrowing mammals, especially California ground squirrel (*Otospermophilus beecheyi*) for burrows. May also be found around golf courses, and disturbed/ruderal habitat in urban areas. Forages in open plains, grasslands, and prairies.	**Present.** Suitable nesting and foraging habitat occurs in annual grasslands in the study area. A single burrowing owl was observed on several occasions utilizing a satellite burrow in the study area.
Swainson's hawk *Buteo swainsoni*	--/ST/--	Nests in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Often nests in or near riparian habitats in the Central Valley. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations. Northern habitat summer range in California begins in central Tehama south to Kern County.	**Low.** Trees within the study area provide low-quality nesting habitat given their relatively small size, location outside of a densely treed area, and proximity to limited and low-quality foraging habitat in the study area. The non-native annual grassland provides low quality foraging habitat given that it is relatively small and surrounded by urban development.
Western yellow-billed cuckoo *Coccyzus americanus occidenalis*	FT/SE/--	Uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in CA. Breeding populations known from the Colorado River, Sacramento and Owens valleys, along the South Fork of the Kern River (Kern Co.), along the Santa Ana River (Riverside Co.), and along the Amargosa River (Inyo & San Bernardino cos). They may also nest along San Luis Rey River (San Diego Co.). Nests in dense cover of deciduous trees and shrubs, especially willows, which usually abut a slow-moving watercourse, backwater or seep. Also utilizes adjacent orchards, especially walnuts, in the Central Valley (CWHR 2014).	**Unlikely.** No habitat and outside geographic range.
White-tailed kite *Elanus leucurus*	--/CFP/--	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.	**Medium**. Some trees on-site could support nests and the non-native grassland provides foraging habitat.
Bald eagle *Haliaeetus leucocephalus*	--/SE, CFP/--	Prefers oceans shores, lake margins, and rivers for both nesting and wintering. Most nests are within one mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Unlikely**. Suitable habitat is not present within the study area.

SPECIAL-STATUS SPECIES TABLE

Common Name ***Scientific Name***	**Listing Status USFWS/CDFW**	**General Habitat Requirements**	**Potential for Species Occurrence Within the Project Site**
Song sparrow (“Modesto” population) *Melospiza melodia*	--/SSC/--	A year-round resident that prefers emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. The Modesto song sparrow is restricted to CA, with established populations in the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley. The Modesto song sparrow thrives where extensive wetlands remain. Most abundant in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. Immediately adjacent to the Butte Sink, song sparrows breed in sparsely vegetated irrigation canals, although they are almost entirely absent from the main stem and tributaries of the Sacramento River above Sacramento (Shuford and Gardali 2008).	**Unlikely**. Suitable habitat is not present in the study area.
Purple martin *Progne subis*	--/SCC/--	Widely distributed throughout nearly the entire eastern U.S. In the western U.S, occurs in the Rocky Mountains, Sonoran Desert, Central Mexico, and Pacific Coast states (Shuford and Gardali 2008). Breeding occurs from April into August. Generally inhabits open areas with an open water source nearby. Purple martins nest colonially or singly in cavities both natural and human-made. Purple martins are not as likely to use nest boxes in CA as they are in the eastern U.S (CWHR 2015). All current known nesting sites in Sacramento are in vertical weep holes beneath bridges built of steel and concrete box girders over urban areas and railroad tracks (Airola and Grantham 2003).	**Low.** No suitable nesting habitat is present on site.
Bank swallow *Riparia riparia*	--/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, and ocean to dig nesting hole.	**Unlikely**. Suitable habitat is not present in the study area.
Least Bell’s vireo *Vireo bellii pusillus*	FE/SE/--	Inhabits willow thickets and other dense riparian habitat below ± 2,000 ft. Known from canyons in San Benito and Monterey cos., coastal areas from Santa Barbara Co. south, and western edges of southern CA deserts. Usually found near water, including intermittent streams (CWHR 2018).	**Unlikely**. Suitable habitat is not present in the study area.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	--/SCC/--	Breeds commonly, but locally, east of Cascade Range and Sierra Nevada, in the Central Valley, and selectively in Imperial and Colorado River valleys in southern California. Nests, roosts, and does much foraging in fresh emergent wetland. Also feeds along shorelines and in open fields. Nests in deep and densely vegetated fresh emergent wetland, often along borders of lakes or ponds. Uncommon winter resident in the Central Valley as much of the breeding population migrates south to winter. Breeds mid-April to late July. Usually nests in large colonies with nests somewhat closely scattered (CWHR 2016).	**Unlikely**. Suitable habitat is not present in the study area.

Special-Status Species Table

Common Name *Scientific Name*	Listing Status USFWS/CDFW	General Habitat Requirements	Potential for Species Occurrence Within the Project Site
Fish			
Sacramento Perch *Archoplites interruptus*	--/SCC/--	Inhabits freshwater sloughs, slow-moving rivers, lakes, reservoirs, and farm ponds. Often found near submerged or emergent vegetation. Tolerates variable conditions, including a wide range of turbidity, temperature, salinity, and pH. Occurs mainly in inshore areas of larger lakes (Moyle 2002).	**Unlikely**. Suitable habitat is not present within the study area.
Delta smelt *Hypomesus transpacificus*	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.	**Unlikely**. Suitable habitat is not present within the study area.
Steelhead – Central Valley DPS *Oncorhynchus mykiss irideus* pop. 11	FT/--	This evolutionary significant unit (ESU) enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning occurs 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. Needs cool water with moderate size gravel for spawning and cover for rearing.	**Unlikely**. Suitable habitat is not present within the study area.
Sacramento Splittail *Pogonichthys macrolepidotus*	--/SCC/--	A cyprinid endemic to California, mainly to sloughs, lakes and rivers of the Central Valley. They are largely absent from the northern extent of their range. During most years, except when spawning, splittail are largely confined to the Delta, Suisun Bay, Suisun Marsh, the lower Napa River, the lower Petaluma River, and other parts of the San Francisco Estuary. Spawning can take place any time from late February to early July (Moyle 2002).	**Unlikely**. Suitable habitat is not present within the study area.
Longfin Ssmelt *Spirinchus thaleichthys*	FC/ST/--	Spawns from November to June in freshwater over sandy-gravel substrates, rocks, or aquatic plants. After hatching, larvae move up into surface waters and are transported downstream into brackish-water nursery areas. In the San Francisco estuary, longfin smelt are usually found downstream of Rio Vista on the Sacramento River and from the vicinity of Medford Island downstream on the San Joaquin River. They are occasionally found upstream of these locations (Moyle 2002).	**Unlikely**. Suitable habitat is not present within the study area.
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	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.	**Present.** Eggs and adult vernal pool fairy shrimp were observed in the study area.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus nigra subsp. caerulea). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Unlikely.** There are no elderberry shrubs in or within 165 feet of the study area.

SPECIAL-STATUS SPECIES TABLE

Common Name ***Scientific Name***	**Listing Status USFWS/CDFW**	**General Habitat Requirements**	**Potential for Species Occurrence Within the Project Site**
Vernal pool tadpole shrimp *Lepidurus packardi*	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 and highly turbid.	**High.** This species has been observed previously in Depot Park.
Mammals			
American badger *Taxidea taxus*	--/SSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low.** Suitable burrowing and foraging habitat occurs in annual grasslands in the study area; however, no burrows that could be utilized by this species were present.
Reptiles			
Western pond turtle *Emys marmorata*	--/SSC/--	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying. Populations extend throughout the coast and Central Valley of California.	**Unlikely**. Suitable habitat is not present within the study area.
Giant gartersnake *Thamnophis gigas*	FT/ST/--	Prefers freshwater marsh and low gradient streams. Has adapted to sloughs, canals, and other small waterways where there is a prey base of small fish and amphibians. Requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter. Utilizes upland habitats within 200 feet from aquatic habitats. This is the most aquatic of the garter snakes in California. Occurs in the Central Valley from Fresno County north to the Gridley/Sutter Buttes area; has been extirpated from areas south of Fresno.	**Unlikely**. Suitable habitat is not present within the study area.

STATUS CODES:

FEDERAL (U.S. Fish and Wildlife Service):

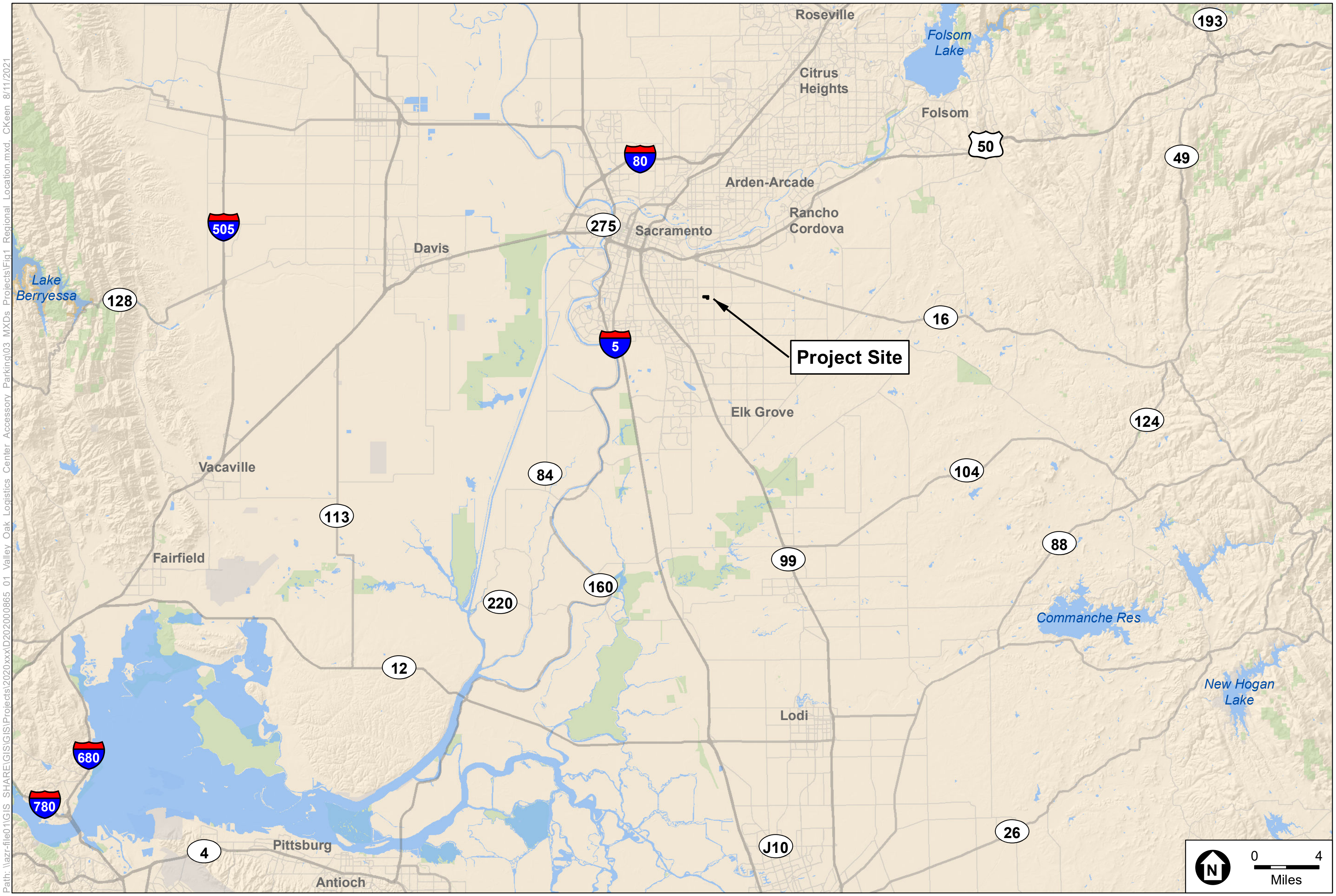
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government

STATE (California Department of Fish and Wildlife):

SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SSC = California species of special concern
CFP = California fully protected bird species
WL = CDFW Watch List

SOURCE: CDFW, 2021a; USFWS, 2021a; CNPS, 2021

Attachment C
Figures



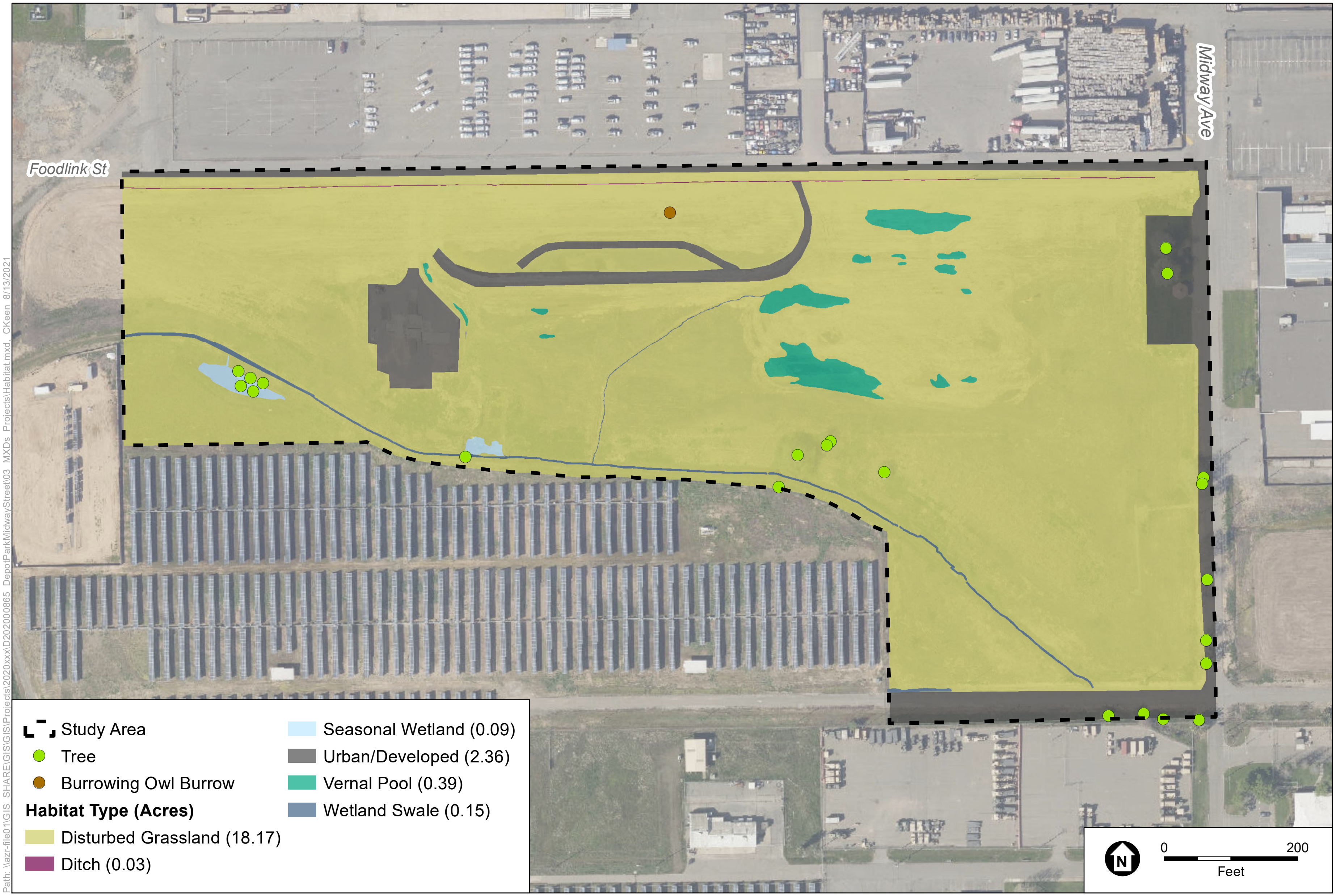
Path: \\azr-file01\GIS SHARE\GIS\Projects\2020xxx\D202000865 01 Valley Oak Logistics Center Accessory Parking\03 MXDs Projects\Fig1 Regional Location.mxd CKeen 8/11/2021

Valley Oak Logistics Center Accessory Parking

SOURCE: ESRI, 2021; ESA, 2021

Figure 1
Regional Location

ESA



SOURCE: Maxar Imagery, 11/07/2019; ESA, 2021

Valley Oak Logistics Center Accessory Parking

Figure 2
Habitat

ESA