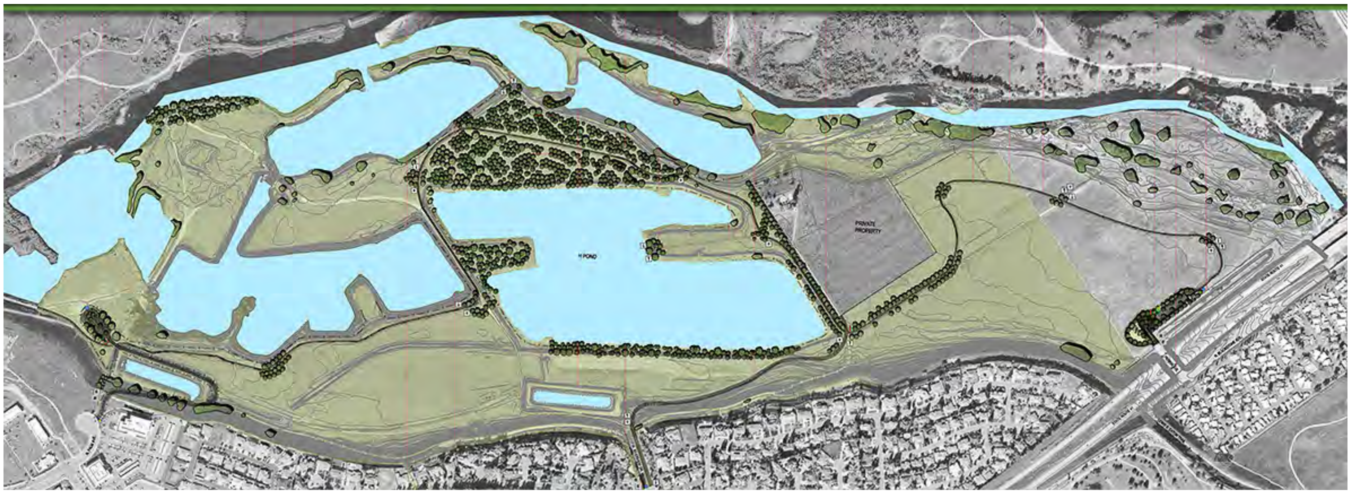
EXHIBIT G

Recirculated EIR

Partially Revised Draft Environmental Impact Report

San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project



State Clearinghouse No. 2014061017

Prepared for:

San Joaquin River Conservancy

AECOM

August 2017

Partially Revised Draft Environmental Impact Report

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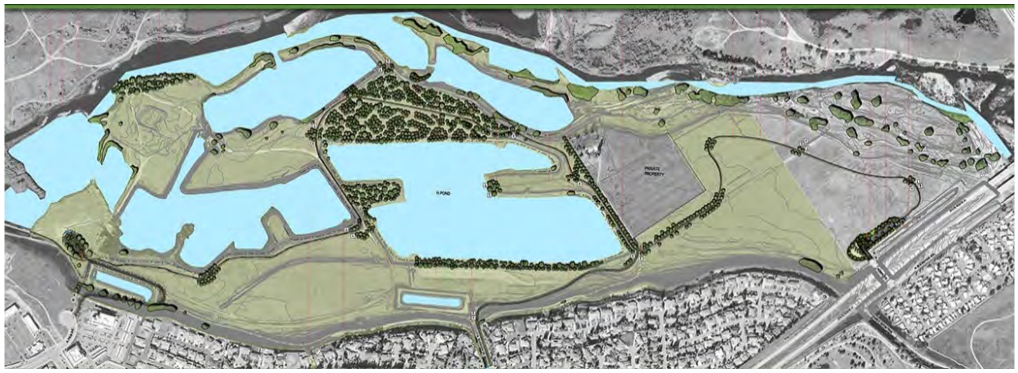

State Clearinghouse No. 2014061017

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08.17.2017

August 2017

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
ASTM standards	American Society for Testing Materials
BMPs	best management practices
BP	Bluff Preservation
CalEPA	California Environmental Protection Agency
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
Conservancy	San Joaquin River Conservancy
DEIR	Environmental Impact Report
diesel PM	diesel particulate matter
EIR	Environmental Impact Report
FAX	Fresno Area Express
FEMA	Federal Emergency Management Agency
FMFCD	Fresno Metropolitan Flood Control District
GHG	greenhouse gas
H:V	horizontal to vertical ratio
LOMR	Letter of Map Revision
LOS	level of service
MBTA	Migratory Bird Treaty Act
NOP	Notice of Preparation
NRCS	Natural Resources Conservation Service
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment
$PM_{2.5}$	respirable particulate matter with an aerodynamic diameter of 2.5 microns or less
PRC	California Public Resources Code
RWQCB	Regional Water Quality Control Board
SR	State Route
Trust	San Joaquin River Parkway and Conservation Trust
USGS	U.S. Geological Survey

1. Introduction

1.1 Background

The San Joaquin River Conservancy (Conservancy) as "Lead Agency,[1]" prepared and released for review the Draft Environmental Impact Report (DEIR) on the River West Fresno, Eaton Trail Extension (SCH No. 2014061017). The DEIR was prepared and distributed in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines for Implementation (California Code of Regulations [CCR] Title 14, Section 15000 et seq. [14 CCR Section 15000 et seq.]).

The circulated DEIR contained analysis of the environmental impacts associated with a 2.4 mile extension of the existing Eaton trail; from the Perrin Avenue alignment near State Route (SR) 41 on the east to Spano Park on the west (proposed Project). The DEIR also considered potential environmental impacts associated with a reasonable range of alternatives[2], specifically, two alternative trail alignments, two alternative public vehicle access routes and parking locations, one alternative without vehicle access, and a No Project alternative.

The project alignment and alternatives to the project evaluated in the circulated DEIR were developed based on: 1) the Fresno River West Constraints and Opportunities Report (2011); 2) the ability to meet project objectives; 2) input from the public and stakeholders obtained during the notice of preparation and three open house–style scoping meetings; and 3) findings of a constraints report contained within the circulated DEIR that examined five different route configurations of possible public vehicle access and parking configurations in the western portion of the project site.

The DEIR was circulated to responsible and trustee agencies as well as the public and stakeholders for a 45-day review period that ran from February 15, 2017 to April 15, 2017. Upon close of the review period all comments received were reviewed and cataloged. A total of 240 comment letters were received from the public, responsible or trustee agencies, organizations and interested parties on the contents of the DEIR. Many of the comments provided opinions on the route alignment, suggestions about points of access, the location of parking for the proposed project and the multiple alternatives to the project under review. Consistent with the requirements of CEQA and Section 15088 of the CEQA Guidelines a reasoned response to all comments on environmental issues raised on the circulated DEIR will be provided in the Final EIR. The information contained herein, as well as the information provided in the

[1] Lead Agency is the public agency which has the principal responsibility for carrying out or approving a project.

[2] Section 15126.6 of the CEQA Guidelines requires that an EIR describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

previously circulated DEIR along with responses to comments will be considered by the Conservancy when making the decision on the proposed project. The Final EIR will compile the text of the circulated DEIR and this Partially Revised DEIR as well as provide responses to environmental comments.

1.2 Partially Revised Draft EIR Process

Consistent with Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5, the Conservancy decided to revise and recirculate portions of the DEIR prepared for the proposed River West Fresno, Eaton Trail Extension Project. See Appendix AA for the notice of availability. This revision and recirculation is being undertaken primarily because the City of Fresno, a Responsible Agency under CEQA, proposed to further study an alternative, Alternative 5B, that was eliminated from further examination during the DEIR process. Since development of the DEIR, new information was developed by the City and has become available regarding the potential feasibility of this alternative. The Conservancy decided these changed circumstance warranted further examining Alternative 5B as an additional potentially feasible alternative. This Revised DEIR also includes changes and clarifications to other portions of the DEIR that are primarily being made in response to comments received on the DEIR during the initial public review and comment period.

When an agency decides to recirculate a Draft EIR, the agency can reissue only the revised part or parts of the EIR, rather than a whole new document if the revisions are limited to a few chapters or portions of the EIR. (CEQA Guidelines, section 15088.5, subd. (c).) When a lead agency recirculates only revised chapters or portions of an EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR. The lead agency need only respond to (i) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (ii) comments received during the recirculation period that relate to the chapters or portions or the earlier EIR that were revised and recirculated. (CEQA guidelines section 15088.5, subd (f).)

1.3 Project Summary

1.3.1 Location

The study area is located along the River between SR 41 and Spano Park within the city limits of Fresno (Figure 1.0-1). The boundary extends from the River south to the bluffs and westward from SR 41 to Spano Park, near the intersection of Palm Avenue and Nees Avenue. The project area is sited within Sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian, Fresno North 7.5-minute series, U.S. Geological Survey (USGS) topographic quadrangle.

1.3.2 Project Description

The project considered in the circulated DEIR evaluated a proposal by the Conservancy to extend the existing Lewis S. Eaton Trail (Eaton Trail) by constructing a multipurpose trail extension approximately 2.4 miles, from the Perrin Avenue alignment near (SR) 41 on the east to Spano Park on the west. As shown on Figure 1.0-2, Proposed Project Alignment, the trail would be about 22 feet wide, with a 12-foot-wide paved surface, a parallel 8-foot-wide hard natural surface for equestrian use, and a 2-foot shoulder (opposite the natural surface area) and generally would proceed from SR 41 to a point below the Spano Park overlook.

A parking lot (Perrin Avenue parking lot) for 50 vehicles with a controlled vehicle entrance would be constructed adjacent to SR 41. Vehicle access to the parking lot would be at the Perrin Avenue undercrossing of SR 41. A gate and a manned or unmanned parking pay station would be included to manage vehicle access.

Pedestrian and bicycle access would be provided at four locations—Perrin Avenue, Spano Park, and the West Riverview Drive and Churchill Avenue entrances to the Bluff Trail. An emergency/service gate would provide access to the trail extension for emergency first responders and maintenance staff.

The trail extension would be landscaped at intervals with native vegetation for habitat enhancement, visual screening, and shade. Picnic areas, tables, benches, public safety and information signs, and wildlife observation areas would be provided along the trail extension at various locations. An Americans with Disabilities Act (ADA) accessible vault restroom would be included at the Perrin Avenue parking area and near the toe of the bluff near Spano Park.

1.3.3 Summary of Circulated DEIR Findings

The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels.

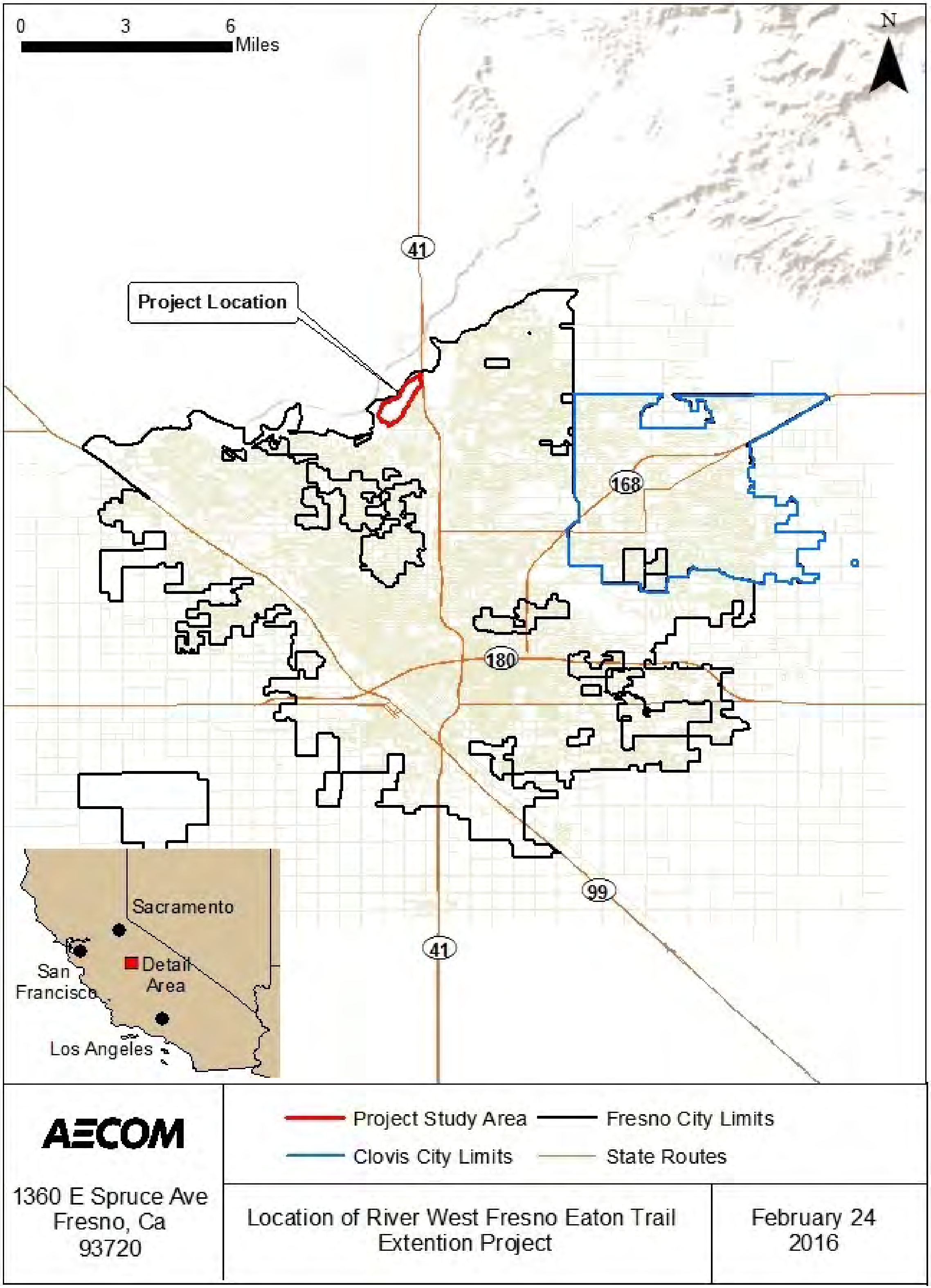

Figure 1.3-1 Location of River West Fresno, Eaton Trail Extension

Figure 1.3-2 Eaton Trail Extension

1.3.4 Public Notice of Partially Revised Draft EIR

CEQA requires the public notice and circulation of a revised DEIR is subject to the same notice and consultation requirements that applied to the original DEIR. (CEQA Guidelines sections 15086 and 15087.) Therefore, this recirculated DEIR is being distributed directly to the agencies, organizations, and interested persons who commented on the original DEIR. The revised DEIR will be circulated for review and comment for a period of 45 days.

The Conservancy requests that reviewers limit their comments to the revised portions of the DEIR found in this Partially Revised DEIR. The Conservancy will prepare responses to comments on environmental issues received on those portions of the original DEIR that have not been revised and recirculated, and comments received on the portions of the DEIR that were revised and recirculated in this Partially Revised DEIR. The combined response to comments, along with all changes to the DEIR, will become the Final EIR that will be considered by the Conservancy Board during deliberations on this project.

Comments must be provided in writing by mail or email. All comments or questions about the revised DEIR should be addressed to:

Melinda Marks, Executive Officer
San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727
Melinda.Marks@sjrc.ca.gov

2. Project Description

No changes to the Project Description contained in the DEIR circulated for public review have been made.

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3. Affected Environment, Environmental Consequences, and Mitigation Measures

3.1 Overview

No changes have been made from the circulated DEIR.

3.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

3.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

3.4 Air Quality

No changes have been made from the circulated DEIR.

3.5 Biological Resources

No changes have been made from the circulated DEIR.

3.6 Cultural Resources

No changes have been made from the circulated DEIR.

3.7 Geology and Soils

No changes have been made from the circulated DEIR.

3.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

3.9 Hazards and Hazardous Materials

No changes have been made from the circulated DEIR.

3.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

3.11 Land Use and Planning

- *Section 3.11.1 of the circulated DEIR is revised to read in its entirety as follows.*

This section describes the existing environmental and regulatory setting of the project area and analyzes potential project impacts related to land use. This section also describes the criteria for determining the significance of impacts, approach to assessing impacts, and possible mitigation measures.

As described in Chapter 2, a public scoping meeting was held on June 17, 2014, to invite comments regarding environmental issues that should be examined in the EIR. Several comments were made that the EIR should evaluate the impacts of the project on land use consistency with the Fresno Municipal Code relating to protection of the San Joaquin River Bluffs and consistency with the City of Fresno General Plan's objectives and implementing policies for public access to the project area. The Conservancy as a state entity is not subject to local government planning and regulation. Therefore, references to local planning documents is for informational purposes only and such documents are not considered "applicable plans" under CEQA Guidelines section 15125, subdivision (d).

- *The following Information about the City of Fresno's Bullard Community Plan is added to Section 3.11.3.3 and Impact 3.11-2 is revised accordingly. All other text in Section 3.11.3.3 of the previously circulated Draft EIR remains unchanged.*

Consistency Evaluation with Policies of Bullard Community Plan

The Bullard Community Plan was adopted in December of 1988 by the City Council of Fresno. This plan outlines the public land use policy that directed the physical growth of the Bullard Community over a twenty year planning horizon. It formed the basis for determining the consistency of development proposals (i.e., rezoning and subdivisions) in the Bullard Community and provides for an internally compatible land use pattern that can be adequately accommodated by the City's existing and planned public service delivery system. **Table 3.1-1,** below evaluates the proposed project against relevant policies of the Bullard Community Plan

Table 3.11-1 Bullard Community Plan Consistency Analysis

Policies	Consistency Analysis	Determination
Public Facilities and Services		
4. Provide for stormwater drainage facilities of sufficient capacity to accommodate the anticipated runoff from planned land uses, through coordination within the Fresno Metropolitan Flood Control District. For those drainage areas in which facilities are existing or substantially designed, new development that would in itself result in a condition wherein the capacity of the existing facilities would be exceeded or would contribute to a projected overloading of the existing or substantially designed facilities at buildout of the drainage zone, shall not be approved unless conditions upon adequate relieve measures, as determined by the Fresno Metropolitan Flood Control District relief measures, as determined by the Fresno Metropolitan Flood Control District.	The Conservancy will coordinate with Fresno Metropolitan Flood Control District to design and construct a project that will not impinge on flows in the existing drainage channel directing runoff into the adjacent stormwater detention basin.	Consistent
6. Promote and support existing water conservation and water recharge efforts: and explore feasibility of using more of the City's surface water entitlement to San Joaquin River water for water recharge purposes.	The project would involve nominal water use for irrigation of landscaping and would not hinder the City's efforts to increase water conservation and groundwater recharge.	Consistent
Circulation		
Goal 4.1.2 includes the following: 2. Provide for efficient use of land and the public service delivery system while protecting the integrity of established neighborhoods. 4. Provide for safe, clean and aesthetically pleasing neighborhoods free from excessive traffic and noise.	Both of these goals are directed toward the planning and development of new residential developments in the City rather than public trails and open space uses such as the proposed project.	Consistent
Goal 4.5.8 includes the following: 1. Provide for the efficient movement of vehicular traffic in order to reduce public and private costs, the use of non-renewable energy resources and air pollution. 2. Provide for a hierarchy of street classifications that encourage commercial and through traffic on the major street system and discourages such traffic on the local residential street system.	This goal is directed towards the backbone vehicle circulation system of the Circulation Element. Extension of the multi-use trail as proposed by the project can be found consistent with the goal of reducing demand for non-renewable energy sources and the volume of air pollution emitted by motor vehicles as the project would encourage alternative modes of travel including pedestrian and bicycle activity. The proposed Project does not affect the City's street hierarchy.	Consistent

Policies	Consistency Analysis	Determination
Policy 2. The number of driveway access points on major street should be minimized to protect traffic flow.	Project is consistent with the intent of this policy by utilizing an existing roadway cul-de-sac.	Consistent
7. Local residential streets shall be designed to discourage through and/or non-residential traffic.	This policy is directed toward the planning and development of new residential developments in the City rather than public trails and open space uses such as the proposed project.	N/A
Parks and Recreation/Open Space		
2. Support the concept of a river parkway system within the river bottom, in coordination with Fresno County, Madera County, public interest groups, property owners and the State of California.	The proposed Project is an extension of an existing segment of the Parkway multiple use trail. The trail will be accessible to pedestrians and bicyclists alike consistent with the multi-use/recreational open space plan designations that apply to the river bottom.	Consistent
6. The City shall work with affected agencies, i.e., school districts and the Fresno Metropolitan Flood Control District (FMFCD) to establish an integrated design and/or joint use of schools, ponding basins, and park sites whenever feasible.	Extension of the Parkway multi-use trail as proposed by this project would meet the intent of this policy by providing a multi-use habitat conservation/recreational use, and by including connectivity to community parks and trails.	Consistent
Special Issues, Policies and Standards: River bottom and Bluffs		
Goals		
1. Minimize the loss of life and property in the river bottom and bluffs due to flooding and geologic hazards.	The proposed Project does not include habitable structures. The project is a recreational use that would not be permanently occupied and includes measure to protect public safety in the event of flooding.	Consistent
2. Provide for substantial public access to the river bottom and bluff area while minimizing intrusion on existing residences and other activities on private property.	The proposed Project provides for public access to the river bottom through extension of the existing trail system. The proposal includes buffers, landscaping, features, and management measures to minimize impacts on private residences	Consistent
3. Provide for substantial public recreational opportunities in the river bottom.	The project would introduce an additional 2.4 miles of publicly accessible trails, as well as fishing, nature observation, and other recreation, along the river bottom.	Consistent
4. Preserve the river bluffs as a unique geological feature in the San Joaquin Valley.	The alignment of the proposed trail would not require alteration of the river bluff face.	Consistent
Policies		
1. Maintain the multi-use/recreational open space plan designations in the river bottom	The project would introduce an additional 2.4 miles of publicly accessible trails within approximately 500 acres of public open space along the river bottom.	Consistent

Policies	Consistency Analysis	Determination
3. Support the concept of a river parkway system for the river bottom, in coordination with Fresno County, Madera County, public interest groups, property owners and the State of California.	The Conservancy has worked in close coordination with multiple agencies to develop the proposed trail extension that would serve all users and meets the goals and policies of the San Joaquin River Parkway Master Plan.	Consistent
5 Work towards the establishment of a precise alignment for the San Joaquin Bluffs/River Trail as part of the river parkway concept.	The proposed Project would extend by 2.4 miles the existing a multi-use recreational trail on publicly owned lands.	Consistent
6. Ensure that the bluff vista points designated in this plan, excluding the two vista points already committed through the subdivision process, are developed in accordance with the specific standards set forth in this plan.	The alignment of the proposed project does not travel along the bluffs and would not disturb existing vista points described in the Community Plan.	Consistent
7. Maintain and enforce the requirements of the BP bluffs Preservation Overlay District	The alignment of the proposed Project would not travel along the bluff face.	Consistent
Palm-Nees Area Land Use		
1. The subject area shall be developed in accordance with the land use conditions recommended by staff and with the land use and major street circulation pattern depicted on Exhibit 5.6. Should subsequent plan amendments for this area be approved such that the Official Bullard Community Plan Map differs from Exhibit 5.6, the provisions of the Official Plan Map shall control.	Construction and operation the proposed Project along the river bottom would be consistent with the existing land use designation of open space/multi-use.	Consistent
Bikeways		
1. Replace the concept of a bluffs bikeway- with a river bottom bike way to be part of the San Joaquin River Parkway. The 1975 Bikeways Plan originally designated a continuous bikeway adjacent to the bluffs, between Highways 41 and 99. However, these plans are considered to be largely impractical in light of substantial intervening development, including golf courses, a general aviation airport, considerable residential development on the bluffs and the fact that the Audubon scenic drive was moved away from the bluff. Given the interest and impetus toward the establishment of a San Joaquin River parkway, the concept of a bluffs bikeway is recommended to be replaced with the development of a continuous bikeway as part of the river parkway system.	The proposed Project would meet the intent of this policy by extending a public bikeway and pedestrian trail on the river bottom between Highway 41 and Spano Park, as a part of the planned Parkway-wide multi-use trail from Friant Dam to Highway 99.	Consistent

Source: Compiled by AECOM 2017.

- *Impact 3.11-2 is revised to include analysis of consistency with the Bullard Community Plan to read in its entirety as follows:*

Impact 3.11-2: The project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

The project encompasses approximately 358 acres on the south side of the River. A majority of the land is owned by the State, under the management of the Conservancy (typically referred to herein as “Conservancy land”). Two parcels that are owned by the City of Fresno are adjacent to Conservancy land; two stormwater detention basins that are owned by Fresno Metropolitan Flood Control District (FMFCD) are in the study area. Upper and lower access to the proposed stairway at Spano Park would occur on property owned by the City (Parcel No. 40203052ST). The Bluff Trail is also located on City-owned property. Construction of the stairway near Spano Park and the Bluff Trail access would occur on the steep slope of the bluff face. Fresno’s Bluff Preservation (BP) Overlay Zone District would require an engineering soils investigation and evaluation report to demonstrate that the site is, or methods exist for the site to be made, sufficiently stable to support the proposed development within 300 feet of the toe of the bluffs (Policy I-4-a of the General Plan 2025 and Policy POSS-7-f of the General Plan Update 2035). These proposed improvements involving City property would require a variance from the City of Fresno.

The project would include public pedestrian and bicycle access to the project site via an existing entrance to the Bluff Trail at River View Drive. The existing access road into the study area at West Riverview Drive is on Conservancy property, with a private easement, allowing access to the two rural residences. With project implementation, this road would be used by public agencies for vehicle access for operations, maintenance, management, patrols, and emergency response. The Conservancy, as a state entity, is not subject to local government land use planning, and therefore, the City of Fresno’s General Plan is not an “applicable” plan under CEQA Guidelines section 15125, subdivision (d). The consistency with local plans in this document is discussed for informational purposes only. Therefore, to the degree the project includes only activities on state owned land, the project does not conflict with an applicable land use plan or policy.

Similarly, the proposed Project is consistent with parks and recreation policies of the Bullard Community Plan by extending a public bikeway and pedestrian trail on the river bottom between Highway 41 and Spano Park. The proposed project can also be found consistent with the special policies of the river bottom and bluffs by providing buffers, landscaping, features, and management measures to minimize impacts on private residences.

Furthermore, the project would locate recreational activities away from sensitive natural resources and residential uses, and would locate new facilities in previously disturbed areas to the extent feasible, consistent with Policies NRD1.1 and RO1 of the Parkway Master Plan. Appropriate buffer zones between the trail and wildlife habitat would be provided between recreation facilities, consistent with Policies NP1, NP8, NRD1.1, RP7, BZ3, and BZ8 of the Parkway Master Plan and Policies POSS-7-d and POSS-7-e of the General Plan Update 2035.The project would not conflict with Parkway Master Plan or City land use policies or regulations. The impact would be **less than significant.** No mitigation is required.

3.12 Mineral Resources

No changes have been made from the circulated DEIR.

3.13 Noise

No changes have been made from the circulated DEIR.

3.14 Population and Housing

No changes have been made from the circulated DEIR.

3.15 Public Services

No changes have been made from the circulated DEIR.

3.16 Recreation

No changes have been made from the circulated DEIR.

3.17 Transportation

- *The following is added to Section 3.17.14.3 on page 3-183 of the circulated DEIR.*

A supplemental traffic study was prepared to evaluate project impacts at two study intersections. A copy of the report is found in Appendix DD. The report was prepared consistent with the approach outlined by the City of Fresno Traffic Impact Analysis Guidelines (2009).

Table 3.17-8 depicts the operating condition of two study intersections Under Existing (year 2017) and Existing Plus Project traffic conditions and year 2025 and year 2025 Plus Project conditions. As shown, the study intersections are currently operating at level of service (LOS) D or better during the

AM and PM peak hours and would continue to operate at acceptable levels with introduction of the proposed Project under existing with project conditions. Impacts are **less than significant**[3].

Table 3.17-8 Intersection Operation

#	Intersection Location	Control	Existing (Year 2017) Condition				Existing Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	29.8	C	31.1	C	29.8	C	31.1	C	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	20.2	C	28.0	D	20.2	C	28.0	D	No
#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	59.0	E	67.8	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	33.3	D	65.3	F	No

Source: AECOM 2017

3.18 Utilities and Service Systems

No changes have been made from the circulated DEIR.

[3] A project is considered to have an individually significant impact on the operation of an intersection if the additional traffic generated from the project would:
- trigger an intersection operating at an acceptable LOS to operate at an unacceptable LOS,
- trigger an intersection operating at an unacceptable LOS (LOS E) to operate at LOS F, or
- increase the average delay for a study intersection that is already operating at an unacceptable LOS

4. Other CEQA Requirements

4.1 Cumulative Impacts

No changes have been made from the circulated DEIR.

4.2 Environmental Justice Considerations

- *The following revised text replaces DEIR section 4.2. The purpose of revising and recirculating this discussion is to clarify and distinguish the analysis of potential disproportionate and adverse environmental effects from potential disproportionate levels of benefits of the project, which is a socio-economic consideration.*

4.2.1 Regulatory Framework

Although not required by CEQA, the following assessment of potential disproportionate (environmental justice) effects is consistent with the Conservancy's commitment to the fair treatment principles and policies of the State.

Under State law, "environmental justice" is defined as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." (California Government Code Section 65040.12[e].)

In 2016, legislation was enacted to add to the required elements of city and county general plans an environmental justice element if the city or county has a disadvantaged community. (Senate Bill No. 1000, Chapter 587, September 24, 2016.) The bill requires the environmental justice element to identify objectives and policies to reduce the unique or compounded health risks in disadvantaged communities, identify objectives and policies to promote civil engagement in the public decision-making process, and identify objectives and policies that prioritize improvements and programs that address the needs of disadvantaged communities. This element is to be included upon the adoption or next revision of two or more elements of the general plan on or after January 1, 2018. The California Office of Planning and Research is currently in the process of revising the CEQA Guidelines for General Plans. The general plans for both the City of Fresno and the County of Fresno do not yet have an environmental justice element and have not yet been updated after this bill was enacted.

This analysis used as guidance the California Attorney General's Office Fact Sheet titled "Environmental Justice at the Local and Regional Level, Legal Background" released in 2012 ("Fact Sheet"). The Attorney

General's Office is in the process of reviewing and updating this Fact Sheet to reflect new developments in California law. The fact sheet states:

> "Fairness in this context means that the *benefits* of a healthy environment should be available to everyone, and the *burdens* of pollution should not be focused on sensitive populations or on communities that already are experiencing its adverse effects." It also states "environmental justice requires an ongoing commitment to identifying existing and potential problems and to finding and applying solutions, both in approving specific projects and planning for future development"

The Fact Sheet then identifies principles under CEQA that support furthering environmental justice goals. It states:

> "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects …." (PRC Section 21002). Human beings are an integral part of the "environment." An agency is required to find that a "project may have a 'significant effect on the environment'" if, among other things, "[t]he environmental effects of a project will cause substantial adverse effects on human beings either directly or indirectly" (PRC Section 21083; State CEQA Guidelines Section 15126.2).

CEQA does not use the terms "fair treatment" or "environmental justice." Rather, CEQA centers on whether a project may have a significant effect on the physical environment. Still, as set out below, by following well-established CEQA principles, local governments can further environmental justice.

4.2.2 CEQA's Purposes

The importance of a healthy environment for all of California's residents is reflected in CEQA's purposes. In passing CEQA, the Legislature determined:

- "The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (PRC Section 21000[a].)
- We must "identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds from being reached." (PRC Section 21000[d].)
- "[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." (PRC Section 21000[g].)

- We must "[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic qualities, and freedom from excessive noise." (PRC Section 21001[b].)

4.2.3 Methodology

This section first examines the potential for disproportionate and adverse environmental effects; it then examines the potential for disproportionate levels of benefits of the project, which is a socio-economic consideration.

To identify whether the proposed project is likely to have a disproportionate and adverse environmental effect on environmental justice communities, this analysis first identified disadvantaged communities by census tract within one-mile of the project area. A one-mile radius was chosen for potential disproportionate and adverse environmental impacts because that is the area within which any adverse environmental impacts on nearby residents would be expected to occur. California Environmental Protection Agency's (CalEPA's) California Communities Environmental Health Screening Tool was used to identify disadvantaged communities by census tract. The California Office of Environmental Health Hazard Assessment (OEHHA) and CalEPA developed the California Communities Environmental Health Screening Tool, more commonly known as "CalEnviroScreen" (OEHHA 2016), to designate disadvantaged communities under Senate Bill 535 for the purpose of informing investments of state funds generated through the Cap-and-Trade Program.[4] The main goal of CalEnviroScreen is to identify California communities with the greatest cumulative exposure to pollution, in order to more effectively direct limited state resources to where they are needed most. CalEnviroScreen is a science-based tool that measures environmental, socioeconomic, and health indicators such as:

- O_3 concentrations in air;
- $PM_{2.5}$ concentrations in air;
- diesel particulate matter (diesel PM) emissions;
- use of certain high-hazard, high-volatility pesticides;
- toxic releases from facilities;
- traffic density;
- drinking-water quality; and
- toxic cleanup sites.

[4] The Cap-and-Trade Program is a regulation developed by the California Air Resources Board under AB 32 (The Global Warming Solutions Act of 2006) to reduce the greenhouse gas (GHG) emissions that cause climate change. The program places a limit on GHG emissions from certain industrial sectors and allows the trade of permits (allowances) to emit GHGs, which generates funds that the Legislature allocates in accordance with Senate Bill 535.

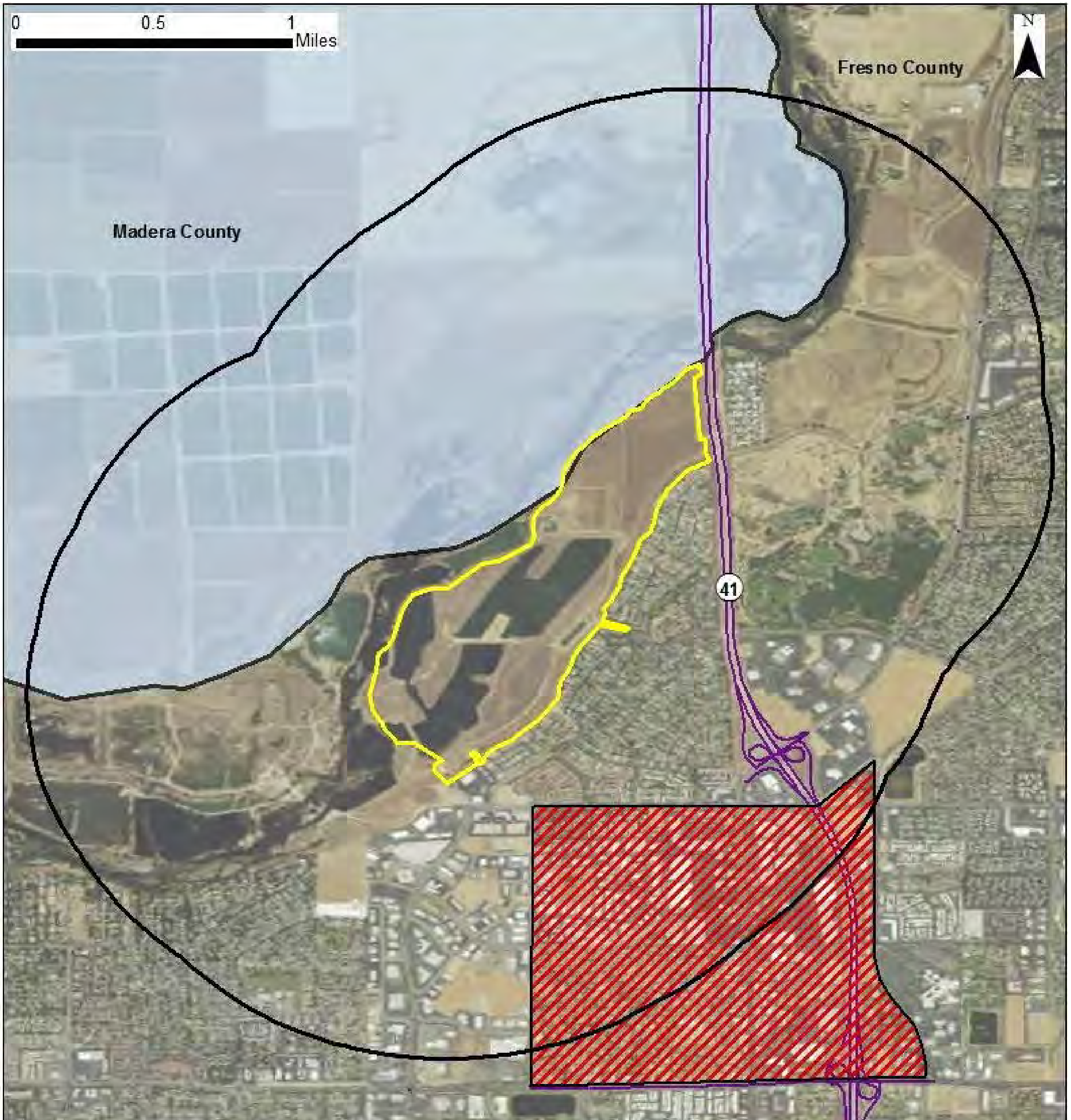
Based on data from OEHHA (2016), Figure 4.0 -1 was developed to depict disadvantaged communities by census tract within 1.0 mile of the project area. Census Tract 6019004404, located along the SR 41 corridor in Fresno, is about 0.5 mile south of the project areas. Census Tract 6039001000 is located across the River in Madera County.

The impact conclusions in Chapter 3 for all resource areas and the cumulative analysis in Chapter 4 where examined to determine if any impacts disproportionately affected the identified census tracts. Under CEQA, only adverse physical changes are considered potential CEQA impacts. (Cal. Code Regs, tit. 14, §15131.) But CEQA also provides considerable latitude to lead agencies to consider the social and economic consequences of a project in whatever manner the agency deems appropriate. (*Id.*) Therefore, this section also examines environmental justice in terms of equity of access to the benefits of the project. This is done in light of the fact that environmental justice considerations have been evolving from being focused mainly on adverse environmental impacts from pollution to include equal access to societal benefits like parks and green spaces.

4.2.4 Assessment

Potential for Disproportionately High and Adverse Environmental Effects

Potential environmental impacts of the proposed Project for each specific resource area are described in detail in Chapter 3 of the DEIR and Chapter 3 of this document, and the potential cumulative impacts are described in Chapter 4, section 4.1 of the DEIR. Those sections found no significant and unavoidable impacts in any resource area. Air quality is a special concern for the potential for disproportionate impacts to nearby disadvantaged communities. Chapter 3 found air quality impacts, for both construction and operational phases, including the potential to expose sensitive receptors to substantial pollutant concentrations, to be less than significant with no mitigation required. For noise, another area of concern for potential impacts to nearby disadvantaged communities, Chapter 3 found less than significant impacts, except for temporary constructions impacts, which is mitigated to less than significant levels through Mitigation Measure Noise-1. Because the project as mitigated causes no significant adverse environmental impacts, it does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.



1360 E Spruce Ave Fresno, Ca 93720	Location of Census Tracts 601904404 and 603901000	
	Project Study Area — Census Tract 6019004404 1 mile radius — Census Tract 6039001000 Data obtained from CalEnfironScreen 2.0 Office of Environmental Health Hazard Assessment	February 24 2016

Figure 4.0-1 Disadvantaged Community Census Tracts 6019004404 and 6039001000

Potential Socioeconomic Effects

The proposed Project will provide a beneficial impact to socioeconomic conditions in the area. As noted in section 3.16.2 of the DEIR, the Trust for Public Land has consistently ranked Fresno near the bottom of an annual survey of the amount of parks and open space for residents across the United States. The proposed project would provide a substantial benefit for residents of Fresno and Madera counties, including nearby disadvantaged communities, by providing an additional access to an outdoor natural recreational area along the River. Activities, such as recreation and exercise, are fundamental to a healthy life. Beneficial use of the existing multiuse trail promotes greater productivity, less disease, and a brighter future.

According to the National Institutes of Health and state Department of Parks and Recreation[5], exercise can result in:

- more energy and capacity for work and leisure activities;
- greater resistance to stress, disease, anxiety, and fatigue, and a better outlook on life;
- increased stamina, strength, and flexibility;
- improved efficiency of the heart and lungs;
- loss of extra pounds or body fat;
- improved ability to remain at a desirable weight; and
- reduced risk of heart attack.

Providing recreational opportunities along the River can benefit disadvantaged communities by providing:

- social benefits through connecting people within the community regardless of income, background, and ability;
- economic benefits by improving the quality of life in the community and helping to attract businesses and visitors to the River; and
- benefits to individuals and the community by promoting physical fitness and self-improvement.

During the scoping process for the DEIR, concerns were raised regarding access to the project area from the Fresno side of the River. The project, as proposed, provides a parking lot at the proposed Perrin Avenue entrance, with additional pedestrian and bicycle access at Riverview Drive and Spano Park. Concerns were raised that limiting vehicular access to one entrance at Perrin Avenue limited access for residents on the Fresno side of the River, including residents of disadvantaged communities near the proposed Project and in West Fresno. In fact, over 40% of the population of the Fresno metropolitan area lives within disadvantaged communities in central, southeast, and west Fresno. The discussion below

[5] The Health and Social Benefits of Recreation, California State Parks, 2005, Sacramento CA.

examines this issue of equitable distribution of the benefits of the project's recreational facilities for disadvantaged communities in the entire Fresno area.

The San Joaquin River Parkway and Conservation Trust (Trust) completed a report in 2011, titled "Short Term Transportation Plan" that examined access conditions for the existing Parkway and identified opportunities for improving public transit, bicycle, and general access to the existing and planned Parkway (Transportation Plan; cite). The Transportation Plan found the Parkway's "walk shed"[6] consists of primarily upper income households.[7]

The circulated DEIR identified one disadvantaged community within the one-mile radius of the project area (Census Tract 6019004404) on the Fresno side. Some residents of that area would be within the walk shed of the new proposed Spano Park pedestrian entrance and most would be within reasonable bicycle distance to both the Spano Park and West Riverview Drive entrance. The proposed Project does not, however, provide greater walking or bicycle access to other disadvantaged communities in Fresno, including those in central, southeast, and west Fresno.

The proposed Project cannot change current land uses to alter residential development patterns to alter the current walk shed or bicycle access. Zoning and planning for nearby residences is under the control of local authorities. The project is also bound geographically in that it is tied to the River's fixed location, and unlike a city park that can be planned within an urban area, this River trail project cannot be relocated to be in closer proximity to existing disadvantaged communities to improve walking and bicycle access to recreational opportunities. The proposed project can and does improve pedestrian and bicycle access generally by providing additional access points along the River at Spano Park and West Riverview Drive.

Because fewer lower income census tracts are within the walk shed and bicycle distance of the project, access from disadvantaged communities, other than the one census tract identified above, would most likely access the parkway by public transit or by car. Fresno Area Express (FAX) is the local transit line that comes closest to the Parkway with Route 26 (North Palm/Peach Avenue) running on 30 minute frequency during the weekdays and Route 30 Pinedale/N Blackstone/West with 20 minute frequency during weekdays.

Currently transit options to the Parkway, however, are very limited and private vehicles will likely continue to be the primary mode of accessing the Parkway over the next several years. The Transportation Plan included a survey about vehicle access, which provides an indication of individual access mobility and transit-dependence. All respondents to that survey indicated they had access to at least one vehicle,

[6] A walkshed refers to the area in which people can comfortably walk to an attraction, which assumes a person can walk about 15-20 minutes, which works out to roughly 1 mile.

[7] Short Term Transportation Plan, San Joaquin River Parkway and Conservation Trust, 2011. Page 2-1.

including lower income respondents. Therefore, it is likely that residents of disadvantaged communities would access the project primarily by private vehicle.

The Transportation Plan found the existing Lewis S. Eaton Trail is currently accessed by vehicles at one of several key locations. One of these existing driving locations is at Blackstone Avenue and East Perrin Road, which currently provides only informal parking, as Blackstone dead-ends at the existing trailhead gate.[8] The proposed project improves this existing vehicular access point by providing a safe off-road parking area off Perrin Avenue for up to 50 vehicles with public amenities. Additional vehicular access points at additional locations may improve vehicular access for disadvantaged communities in Fresno, which could improve the equitable distribution of the benefits of the trail project. The Transportation Plan recommends improving Parkway access near Palm and Nees Avenues).[9] This potential additional access point for vehicles, in addition to another potential additional vehicle access points, are discussed in the analysis of alternatives in section in Chapter 5.

Conclusion

The project does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities. No mitigation required. The proposed Project's single public access point may result in less availability of project benefits to disadvantaged communities that may access the project benefits by walking or bicycle.

4.3 Growth Inducement

No changes have been made from the circulated DEIR.

4.4 Energy

No changes have been made from the circulated DEIR.

4.5 Effects found not to be Significant

No changes have been made from the circulated DEIR.

[8] Short Term Transportation Plan, San Joaquin River Parkway and Conservation Trust, 2011. Page 2-10.
[9] Short Term Transportation Plan, San Joaquin River Parkway and Conservation Trust, 2011. Page 4-6.

4.6 Unavoidable Significant Environmental Effects

- *The text on page 4-23 of the DEIR has been revised to read as follows:*

  Section 15126.2(b) of the State CEQA Guidelines requires a description of any significant impacts, including those that can be mitigated but not reduced to a level of insignificance. When impacts cannot be alleviated without imposing an alternative design, the analysis should describe the implications of the impacts and the reasons why the project is being proposed, notwithstanding its effects. The project was evaluated with respect to specific resource areas to determine whether implementation would result in significant adverse impacts. The potential environmental impacts of the project are summarized in Table 1.6-1 in Chapter 1, “Executive Summary,” of this DEIR. Some of the impacts identified would be less than significant. In other instances, incorporating the mitigation measures proposed in this DEIR would reduce the impacts to less than significant. The project would not result in any unavoidable significant environmental impact.

Where the decision of the public agency allows the occurrence of significant effects that are identified in the final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or the information in the record (State CEQA Guidelines Section 15093[b]). This statement is called a “statement of overriding considerations.”

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5. Alternatives

This chapter presents revisions to the analysis of Alternatives 1-5 (sections 5.6 to 5.10) an analysis of new Alternative 5B (sections 5.11), and a revised comparison of alternatives discussion (section 5.12 and 5.13). To promote readability, the introduction (5.1) discussion of regulatory requirements (5.2) and project objectives are presented below without change from the circulated DEIR. Sections 5.4 and 5.5 are revised to add reference to Alternative 5B. The discussion of no project Alternative (Alternative 6) is unchanged from the circulated DEIR (section 5.11 of DEIR at page 5-91).

5.1 Introduction

This chapter describes the alternatives to the project and compares their environmental impacts to those of the project. The purpose of the alternatives analysis in an EIR is to describe a range of reasonable, potentially feasible alternatives to the project that can reasonably attain most of the identified project objectives, but reduce or avoid one or more of the project's significant impacts. A detailed description of the CEQA requirements for the alternatives analysis is provided below.

5.2 Regulatory Requirements

- *Section 5.2 of the circulated DEIR is revised for context and readability as follows.*

Section 15126.6(a) of the State CEQA Guidelines sets forth the requirements for the consideration and discussion of alternatives to the project. An EIR shall describe a range of reasonable alternatives to the project, or to the project location, that would feasibly attain most of the project's basic objectives but would avoid or substantially lessen any of the significant effects of the project, and shall evaluate the comparative merits of the alternatives. An EIR must discuss alternatives even if all of the project's significant environmental impacts will be avoided or reduced by mitigation measures so decision-makers will be provided with adequate information about the range of options available to reduce or avoid environmental impacts.

An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible[10] alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. No ironclad rule governs the nature or scope of the alternatives

[10] CEQA Guidelines Section 15364 defines feasible as: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

to be discussed, other than the rule of reason. If the no project alternative is the environmentally superior alternative, the EIR must identify the environmentally superior alternative among the other alternatives evaluated.

The following are key provisions of the State CEQA Guidelines (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the proposed project, even if these alternatives would impede to some degree the attainment of the proposed project objectives or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The No Project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) was published, as well as what would be reasonably expected to occur in the foreseeable future if the proposed project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasonable choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the proposed project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the proposed project need to be considered for inclusion in the EIR.
- An EIR does not need to consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.
- Although the focus of the alternatives analysis should be on alternatives that reduce or avoid environmental impacts, an EIR may also present alternatives that provide greater project benefits at increased environmental cost, which helps highlight the policy trade-offs in consideration of the project and alternatives to it.

The range of potentially feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in Section 15126.6[f][1] of the State CEQA Guidelines) are environmental impacts; site suitability; economic viability; social and political acceptability; technological capacity; availability of infrastructure; general plan consistency; regulatory limitations; jurisdictional boundaries; and whether the proponent could reasonably acquire, control, or otherwise have access to an alternative site. An EIR need not consider an alternative that would not achieve the basic project objectives.

5.3 Project Objectives

As mentioned in Chapter 2, "Project Description," the Conservancy Act (PRC Section 32500 et seq.) sets forth the statutory mission and authorities of the Conservancy to develop, and manage in the San Joaquin River Parkway, a planned 22-mile natural and recreational area in the San Joaquin River floodplain extending from Friant Dam to SR 99. Specifically, the Conservancy's activities are to implement the Parkway Master Plan, a 22-mile regional greenspace and wildlife corridor along both sides of the River, with an interconnected trail system and recreational and educational features.

5.4 Alternatives

- *Section 5.4 of the circulated DEIR is revised to read in its entirety as follows:*

  This discussion of alternatives identifies and examines a range of potentially feasible alternatives that could avoid or reduce the severity of one or more significant environmental effects or increase the benefits of the project. The alternatives were also selected to address comments received during the scoping process. The circulated DEIR evaluated five action alternatives and a No Project alternative. This Partially Revised DEIR includes revisions to the discussion of Alternatives 1-5, and adds a new discussion of Alternative 5B.

  - Alternative 1: Added Parking
  - Alternative 2: Bluff Trail Alignment
  - Alternative 3: River's Edge Trail Alignment
  - Alternative 4: No Parking
  - Alternative 5: Palm and Nees Access
  - Alternative 5B: Palm and Nees Access
  - Alternative 6: No Project

5.5 Alternative Development Process

- *Section 5.5 of the circulated DEIR is revised to read in its entirety as follows.*

  The project's purpose and objectives and its potentially significant environmental impacts were considered during the development of alternatives. The Conservancy cohosted three open house–style public and agency scoping meetings with the City and the San Joaquin River Parkway and Conservation Trust. The first public meeting was held on November 17, 2008, at 7815 N. Palm Avenue, Suite 310, in Fresno (office of H. T. Harvey & Associates). The second public meeting was held on March 29, 2011, at Nelson Elementary School, 1336 West Spruce Avenue in Fresno. A third public meeting was held on June 17, 2014, at the Pinedale Community Center, 7170 N. San Pablo Avenue in Fresno. These meetings informed the selection of the alternatives. In the circulated DEIR, the five alternatives are modifications of the proposed project and may include project elements as described in Section 2.4, "Project Description."

After circulation of the DEIR, the City of Fresno proposed that the Conservancy evaluate Alternative 5B, which had been removed from further consideration in the circulated DEIR, and recirculate the DEIR for public review and comment. The Conservancy worked collaboratively with the City on this proposal and determined that including analysis of Alternative 5B in a partially recirculated DEIR was appropriate.

The basis for selecting each alternative is provided below.

- Alternative 1, "Added Parking," was developed to provide greater, more convenient vehicle access for residents of the Fresno metropolitan area, including increasing opportunities for equal access for disadvantaged communities, and to provide more parking capacity.
- Alternative 2, "Bluff Trail Alignment," was developed to reduce the circuitous alignment of the proposed trail and to reduce potential impacts on riparian habitat and disturbance to nearby residences on the floodplain.
- Alternative 3, "River's Edge Trail Alignment," was developed to provide multiuse trail access close to the river and to possibly reduce the potential effects of wildland fires on the residences located on the bluffs.
- Alternative 4, "No Parking," was developed to address the potential effects of parking at the project site including noises, vehicle traffic, and safety.
- Alternative 5, "Palm and Nees Access," was developed to provide greater, more convenient vehicle access for residents of the Fresno metropolitan area, including increasing opportunities for equal access for disadvantaged communities; and to provide more parking capacity. In accordance with the State CEQA Guidelines (Section 15126.6[f][2]), Alternative 5 is an added off-site alternative and includes the project as described in Section 2.4, "Project Description."
- Alternative 5B was developed to provide additional options to address limited public access to the River for residents of nearby disadvantaged communities, and more broadly for residents of the Fresno metropolitan area and to provide more parking capacity. In accordance with the State CEQA Guidelines (Section 15126.6[f][2]), Alternative 5B is an added off-site alternative and includes the project as described in Section 2.4, "Project Description.

- Alternative 6, the No Project Alternative, is included in accordance with Section 15126.6(e)(3)(B) of the State CEQA Guidelines. Analysis of this alternative considers the effects if the project were to not proceed, and if no trail extension, parking, or recreational amenities were constructed.

5.6 Alternative 1: Added Parking

- *The following replaces the first paragraph on page 5-4 of the circulated DEIR.*

Alternative 1 consists of the project as described in Section 2.4, “Project Description,” plus a public vehicle entrance, additional parking area, and public access to the trail extension from West Riverview Drive. Alternative 1 was developed to augment public vehicular access to the project site for residents of the Fresno metropolitan area. During the public scoping process, concerns were raised that limiting vehicular access to one entrance at Perrin Avenue limited access for residents on the Fresno side of the River, including residents of disadvantaged communities near the proposed Project and in West Fresno.

5.6.1 Environmental Setting

No changes have been made from the circulated DEIR.

5.6.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

5.6.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

5.6.4 Air Quality

No changes have been made from the circulated DEIR.

5.6.5 Biological Resources

No changes have been made from the circulated DEIR.

5.6.6 Cultural Resources

No changes have been made from the circulated DEIR.

5.6.7 Geology and Soils

No changes have been made from the circulated DEIR.

5.6.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

5.6.9 Hazards and Hazardous Materials

No changes have been made from the circulated DEIR.

5.6.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

5.6.11 Land Use and Planning

- *The following replaces the last paragraph on page 5-14 of the circulated DEIR.*

Under Alternative 1, the trail extension and amenities described for the project and the additional parking lot and a paved two-way road would be located on an alluvial floodplain terrace along the south side of the River. Vehicle access to the parking lot would be provided via West Riverview Drive. Alternative 1 would not physically divide an established community. Alternative 1 does not conflict with the Parkway Master Plan, the Bullard Community Plan, or the City of Fresno's General Plan Update 2035, except for a potential conflict with the City of Fresno General Plan POSS-7-g. POSS-7-g states: "Public access into the River View Drive area/neighborhoods should be limited to cyclists and pedestrians with the exception of public safety, circulation, and/or other government/support service provider vehicles." Alternative 1 does not limit public access to cyclists and pedestrians since it provides a public vehicular access point through River View Drive, which potentially conflicts with POSS-7-g. However, the public access to the Parkway that would be developed under Alternative 1 would be only on land owned by the Conservancy. As explained in Chapter 3, the Conservancy, as a state entity, is not subject to local government land use planning, and therefore, the City of Fresno's General Plan is not an "applicable" plan under CEQA Guidelines section 15125, subdivision (d). The consistency with local plans in this document is discussed for informational purposes only. Therefore, Alternative 1, to the degree the project includes only activities on state owned land, does not conflict with an applicable land use plan or policy. **No impact** would occur.

5.6.12 Mineral Resources

No changes have been made from the circulated DEIR.

5.6.13 Noise

No changes have been made from the circulated DEIR.

5.6.14 Population and Housing

No changes have been made from the circulated DEIR.

5.6.15 Public Services

No changes have been made from the circulated DEIR.

5.6.16 Recreation

- *The following replaces the paragraphs on recreation found on page 5-15 in circulated DEIR.*

Alternative 1 would provide additional parking (40 more spaces) and vehicular visitor access to the trail extension and recreation amenities via the West Riverview Drive entrance. The alternative would promote greater access from the Fresno metropolitan area. Additional access would encourage visitor use such as hiking, bicycling, jogging, and picnicking. The Alternative 1 entrance would also help reduce barriers for access to recreation opportunities for disadvantaged communities. Like the proposed project, the increase in visitor use would not result in substantial damage to or have an adverse physical effect on the environment The impact would be **less than significant**.

5.6.17 Transportation

- *The following replaces Mitigation Measure Alt. 1-Traffic-1 and the evaluation of its effectiveness on page 5-16 and first paragraph of page 5-17 in the circulated DEIR.*

Mitigation Measure Alt. 1–Traffic-1

Installing either a traffic signal or other effective traffic control such as a traffic roundabout, designed by the City for the Audubon Drive/Del Mar Avenue intersection, would improve access to the West Riverview Drive entrance by reducing wait time for traffic entering the intersection from Del Mar Avenue and would reduce the potential for traffic accidents. The Conservancy would negotiate a fair-share contribution to fund these traffic safety improvements.

Effectiveness of Mitigation Measure

Although a traffic signal is listed on the City's priority list, the City has not committed to a date for construction of these improvements. The Conservancy cannot guarantee these improvements would be implemented since they are controlled by another agency. If Alternative 1 was adopted, the Conservancy would recommend approval of this mitigation measure to the City consistent with CEQA Guidelines section 15091, subdivision (a)(2). But since the Conservancy cannot guarantee these improvements will be carried out, if the Conservancy proceeded to carry out Alternative 1 before an effective traffic control measure is installed, this impact would be **significant and unavoidable**. The Conservancy would be required to make a statement of overriding considerations at the time of approval to proceed with this option.

Alternatively, the Conservancy may condition the carrying out of the vehicle entrance and additional parking area accessed from West Riverview Drive under Alternative 1 upon the City constructing and operating these traffic improvements. By not carrying out any of the project activities that could lead to the identified Transportation impacts until the traffic improvements are operational, the potential for impacts would be reduced to **less than significant**.

5.6.18 Utilities and Service Systems

No changes have been made from circulated DEIR.

5.6.19 Cumulative Impacts

- *The following paragraph has been added to the text of the DEIR.*

Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a).

Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities.

The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), the proposed Project would not result in significant adverse environmental impacts viewed independently (circulated DEIR chapter 3) and would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR chapter 4). Similar to the proposed Project, Alternative 1 would not substantially contribute to a cumulative impact for any studied topic except traffic because all other environmental impacts are either less than significant or reduced to a less than significant level with the imposition of mitigation measures and application of BMPs.

Under future Year 2025 with Alternative 1 conditions, a significant impact at the intersection of Del Mar and Audubon Avenue is expected due to increased delays at an intersection predicted to operate below acceptable LOS. Payment of fees to fund a fair share contribution towards construction of an intersection improvement at this location would reduce the proposed Project's incremental contribution toward this cumulative impact. While mitigation measures are identified, it is beyond the ability of the Conservancy to ensure implementation of the traffic signal. The City has not designed or identified funding to construct improvements at present because signal warrants are not met. If the Conservancy were to construct and operate Alternative 1 prior to a funding source and design of the necessary improvements then the traffic associated with Alternative 1 would present a cumulatively considerable contribution to a **significant impact**. Alternatively, if the Conservancy were to condition the carrying out of the vehicle entrance and parking accessed from West Riverview Drive as proposed under Alternative 1 until that time the City constructs these traffic improvements then **no cumulative impact** would result.

5.6.20 Environmental Justice Considerations

- *The following replaces section 5.6.19 on page 5-17 of circulated DEIR.*

As discussed in Chapter 4, section 4.2, the proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities. Alternative 1 proposes an additional parking lot accessed by West Riverview Drive, which results in slightly more potential environmental impacts than the proposed project. For air quality, construction-related and operational emissions are slightly higher than the proposed project, but these impacts remain less than significant with no mitigation required. This alternative also results in short-term, temporary increases in ambient noise levels due the construction required for the added roadway, parking lot, and facilities, but this impact is reduced to less than significant levels with Mitigation Measure Noise-1. Overall, based on the environmental impacts analysis for Alternative 1, this alternative does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

As discussed in Chapter 4, section 4.2, access to the proposed Project for disadvantaged communities would most likely occur by private vehicle because transit options are limited and most disadvantaged communities in Fresno are not within walking or bicycle distance of the proposed Project. The proposed entrance at Perrin Avenue is near a currently used informal vehicular access point at the gate of the existing Lewis S. Eaton Trail, which this project extends down river to the west. While the proposed Project does improve vehicular access to the River Parkway trail system with this proposed 50 space parking lot, that access point from the Fresno side requires travel north along SR 41 to Children's Boulevard, then travel south along the SR 41 East Frontage Road (Blackstone Avenue). Adding another vehicular access point at existing West Riverview Drive gate and access road, as proposed for Alternative 1, could improve access to the project for disadvantaged communities by providing a more convenient access point utilizing surface roadways near the proposed Project. Not requiring the additional travel up SR 41 may help reduce barriers to access for disadvantaged communities in Fresno, including central, southeast and west Fresno, and help ensure the benefits of the project, in terms of equitable access to parks and greenspaces, is shared equitably within the community.

5.7 Alternative 2: Bluff Trail Alignment

5.7.1 Environmental Setting

No changes have been made from the circulated DEIR.

5.7.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

5.7.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

5.7.4 Air Quality

No changes have been made from the circulated DEIR.

5.7.5 Biological Resources

No changes have been made from the circulated DEIR.

5.7.6 Cultural Resources

No changes have been made from the circulated DEIR.

5.7.7 Geology and Soils

No changes have been made from the circulated DEIR.

5.7.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

5.7.9 Hazards and Hazardous Materials

No changes have been made from the circulated DEIR.

5.7.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

5.7.11 Land Use and Planning

No changes have been made from the circulated DEIR.

5.7.12 Mineral Resources

No changes have been made from the circulated DEIR.

5.7.13 Noise

No changes have been made from the circulated DEIR.

5.7.14 Population and Housing

No changes have been made from the circulated DEIR.

5.7.15 Public Services

No changes have been made from the circulated DEIR.

5.7.16 Recreation

No changes have been made from the circulated DEIR.

5.7.17 Transportation

No changes have been made from the circulated DEIR.

5.7.18 Utilities and Service Systems

No changes have been made from the circulated DEIR.

5.7.19 Cumulative

- *The following text has been added on Page 5-26 of the circulated DEIR*

Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a). Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities. The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels. Therefore, the proposed Project would not result in significant adverse environmental impacts viewed independently (circulated DEIR chapter 3) and would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR chapter 4).Similar to the proposed Project, Alternative 2 would not have an incremental effect that is cumulatively considerable for any studied topic. The trail alignment complies with policies adopted for the protection of natural resources including setbacks established by the River Parkway Master Plan and limits on landform alteration established by the City of Fresno bluff protection ordinance. All impacts can be reduced to less than significant with incorporation of BMPs and application of mitigation measures. No cumulative impacts would occur as a result of Alterative 2.

5.7.20 Environmental Justice Considerations

- *The following replaces section 5.7.19 on page 5-26 of circulated DEIR.*

Alternative 2 includes a less circuitous trail extension alignment nearer the toe of the bluff. The impacts analysis for Alternative 2 found that this alternative does not result in any additional adverse environmental impacts than the proposed project. Since the proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities, Alternative 2, which has the same impacts as the proposed project, also does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

In terms of improving access to the project for disadvantaged communities, Alternative 2 does not add any additional access points. Therefore, this alternative does not improve access to the project for disadvantaged communities over the proposed project and does not improve the equitable distribution of the benefits of the trail project.

5.8 Alternative 3: River's Edge Trail Alignment

5.8.1 Environmental Setting

No changes have been made from the circulated DEIR.

5.8.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

5.8.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

5.8.4 Air Quality

No changes have been made from the circulated DEIR.

5.8.5 Biological Resources

No changes have been made from the circulated DEIR.

5.8.6 Cultural Resources

No changes have been made from the circulated DEIR.

5.8.7 Geology and Soils

No changes have been made from the circulated DEIR.

5.8.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

5.8.9 Hazards and Hazardous Materials

No changes have been made from the circulated DEIR.

5.8.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

5.8.11 Land Use and Planning

No changes have been made from the circulated DEIR.

5.8.12 Mineral Resources

No changes have been made from the circulated DEIR.

5.8.13 Noise

No changes have been made from the circulated DEIR.

5.8.14 Population and Housing

No changes have been made from the circulated DEIR.

5.8.15 Public Services

No changes have been made from the circulated DEIR.

5.8.16 Recreation

No changes have been made from the circulated DEIR.

5.8.17 Transportation

No changes have been made from the circulated DEIR.

5.8.18 Utilities and Service Systems

No changes have been made from the circulated DEIR.

5.8.19 Cumulative Impact

- *The following is added to page 5-40 of the circulated DEIR.*

  Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a).

  Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities. One potential project of note is the Fresno Parks Master Plan called

Vision 2050 that intends to increase public access to the river trail by promoting public awareness, expanding educational programs and creating new points of access to enhance recreational opportunities which is aligned with those of the proposed Project and Alternative 3.

The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels. Therefore, the proposed Project would not result in significant adverse environmental impacts viewed independently (circulated DEIR chapter 3), and would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR chapter 4).

Similar to the proposed Project, many impacts associated with Alternative 3 could be avoided or reduced through application of BMPs and implementation of mitigation. However, this Alternative conflicts with policies of the River Parkway Master Plan that established required setbacks from natural resources that are designed to avoid impacts. Under Alternative 3, biological resources within the river could be exposed to physical impacts including noise, increased vehicle emissions, debris, and light/glare. When viewed in combination with increased human activity along the river corridor proposed by the Fresno Parks Master Plan, Alternative 3 may have an incremental effect that is cumulatively considerable. Cumulative impacts are considered **significant and unavoidable**.

5.8.20 Environmental Justice Considerations

- *The following replaces section 5.8.19 on page 5-40 of circulated DEIR.*

As discussed in Chapter 4, section 4.8, the proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities. Alternative 3 proposes a trail alignment that travels closer to the river bottom but retains the parking as conceived for the proposed Project. This alternative would result in impacts similar to those of the proposed Project. For air quality, construction-related and operational emissions are the same as the proposed project, and would be less than significant with no mitigation required. This alternative also results in similar increase in ambient noise levels on a temporary basis due the additional construction required for the added roadway, parking lot, and facilities, but this impact is reduced to less than significant levels with Mitigation Measure Noise-1. Overall, based on the environmental impacts analysis for Alternative 3, this alternative does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

As discussed in Chapter 4, section 4.8, access to the project for disadvantaged communities would most likely occur by private vehicle because transit options are limited and most disadvantaged communities in Fresno are not within walking or bicycle distance of the project. The proposed entrance at Perrin Avenue is near a currently used informal vehicular access point at the gate of the existing Lewis S. Eaton Trail, which this project extends down river to the west. While the project does improve vehicular access to the River Parkway trail system with this proposed 50 space parking lot, that access point from the Fresno side requires travel north along SR 41 to Children's Boulevard, then travel south along the SR 41 East Frontage Road. Implementation of Alternative 3 would result in conditions similar to those for the proposed Project.

5.9 Alternative 4: No Parking

5.9.1 Environmental Setting

No changes have been made from the circulated DEIR.

5.9.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

5.9.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

5.9.4 Air Quality

No changes have been made from the circulated DEIR.

5.9.5 Biological Resources

No changes have been made from the circulated DEIR.

5.9.6 Cultural Resources

No changes have been made from the circulated DEIR.

5.9.7 Geology and Soils

No changes have been made from the circulated DEIR.

5.9.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

5.9.9 Hazards and Hazardous Materials

No changes have been made from the circulated DEIR.

5.9.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

5.9.11 Land Use and Planning

No changes have been made from the circulated DEIR.

5.9.12 Mineral Resources

No changes have been made from the circulated DEIR.

5.9.13 Noise

No changes have been made from the circulated DEIR.

5.9.14 Population and Housing

No changes have been made from the circulated DEIR.

5.9.15 Public Services

No changes have been made from the circulated DEIR.

5.9.16 Recreation

- *The following replaces the text on recreation found on pages 5-51 and 5-52*

  Under Alternative 4, access to the site would be available via pedestrian and bicycle only through Perrin Avenue and West Riverview Drive. Visitors to the trail extension who travel by car would need to park along Perrin Avenue and Blackstone Avenue or along the residential streets near the entrance to the Bluff trail. Some vehicles may park at Woodward Park; visitors would then walk or bike to the Perrin Avenue entrance. No parking or loading or unloading of horses would occur under this Alternative. All other recreation amenities described for the project would be constructed.

  Alternative 4 would not be consistent with adopted policies in the River Parkway Master Plan intended to reduce problems that might be generated by off-site visitor parking. Potential issues include conflicting vehicle movements along neighborhood streets and disruption caused by trail users seeking parking to access the trail extension, which can lead to noise and traffic congestion. and Alternative 4 is in conflict with a San Joaquin River Parkway Master Plan policy which states:

Policy RPP1: Provide sufficient on-site parking at each recreational facility for the desired usage level during peak periods and to meet the parking recommendations of the affected local jurisdiction.

Further, this alternative would preclude access for members of the public who are less mobile, as otherwise accommodated through compliance with the Americans with Disabilities Act. Although there is parking at Spano Park, Alternative 4 would preclude ADA-compliant access because the entrance to the trail and recreation amenities at Spano Park would be too steep to meet ADA requirements. Similarly, access to the Bluff Trail and to the project site would be too steep to meet ADA requirements, and access from Woodward Park on the Eaton Trail would be too steep and would require a long travel distance.

However, ADA-compliant access to the proposed trail and recreation amenities could be made available at the Perrin Avenue entrance. Currently parking along Perrin Avenue is street side parking and no ADA-restricted parking is available. Because of the potential for visitors to create noise and traffic congestion during peak periods while searching for parking, and due to lack of accessible parking, this impact would be **potentially significant**.

Mitigation Measure Alt. 4–Recreation-1

The Conservancy shall provide a limited number of ADA-placard parking spaces at the Perrin Avenue entrance. The accessible parking and passenger loading spaces shall be located on the shortest accessible route of travel to the trail entrance. The parking spaces and passenger loading area shall be striped in a color that contrasts with the surface of the parking area. Colors such as blue and white are preferred. The parking spaces and passenger loading area shall be identified with disabled/ADA-compliant parking signage.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Alt. 4–Recreation-1 would reduce but not eliminate the impact associated with Alternative 4 because the Conservancy would provide accessible parking spaces and passenger loading spaces at the Perrin Avenue entrance; however, since adequate on-site parking is a policy within the San Joaquin River Parkway Master Plan, and general users traveling by motor vehicles to the trail extension would also require parking, this impact is considered to be **significant and unavoidable**.

5.9.17 Transportation

No changes have been made from the circulated DEIR.

5.9.18 Utilities and Service Systems

No changes have been made from the circulated DEIR.

5.9.19 Cumulative Impact

- *The following is added to page 5-53 of circulated DEIR.*

  Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a).

  Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities. One potential cumulative project of note is the Fresno Parks Master Plan called Vision 2050 that intends to increase public access to the river trail by promoting public awareness, expanding educational programs and creating new points of access to enhance recreational opportunities which is aligned with those of the proposed Project and Alternative 4.

  The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels (circulated DEIR chapter 3). Therefore, the proposed Project would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR, chapter 4). Similar to the proposed Project, Alternative 4 would not have an incremental effect that is cumulatively considerable for any study topic, because all environmental impacts are either less than significant or reduced to less than significant levels with imposition of mitigation measures. Alternative 4 would create an inconsistency with policies of Master Plan related to the provision of parking sufficient for the desired level of usage during peak hours, since no parking would be included as part of this alternative. This inconsistency may lead to neighborhood disruption associated with the noise and traffic generated by trail users seeking to find parking along residential streets. Users of the newly constructed trail segment would either travel to the Perrin lot or seek to park on neighboring streets or in commercial lots, which can create conflicts with residents and businesses competing for parking space. Alternative 4's incremental contribution would be cumulatively considerable, and a **significant unavoidable impact**.

5.9.20 Environmental Justice Considerations

- *The following replaces section 5.9.19 on page 5-53 of circulated DEIR.*

As discussed in Chapter 4, section 4.2, the proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities. Alternative 4 proposes to construct the trail extension as described for the proposed Project but no public vehicle entrance to the site or on-site parking would be provided. The selection of Alternative 4 would result in fewer impacts than identified for the proposed Project. For air quality, construction-related and operational emissions are slightly less than the proposed project. This alternative also reduces short-term and temporary increases in ambient noise levels due the fact less construction activity is required since no roadway, parking lot, and facilities, would be constructed. Overall, based on the environmental impacts analysis for Alternative 4, this alternative does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

As discussed in Chapter 4, section 4.2, access to the project for disadvantaged communities would most likely occur by private vehicle because transit options are limited and most disadvantaged communities in Fresno are not within walking or bicycle distance of the project. The proposed entrance at Perrin Avenue is near a currently used informal vehicular access point at the gate of the existing Lewis S. Eaton Trail, which this project extends down river to the west. While the project does improve vehicular access to the River Parkway trail system with this proposed 50 space parking lot, that access point from the Fresno side requires travel north along SR 41 to Children's Boulevard, then travel south along the SR 41 East Frontage Road. Removal of the parking lot and access point at Perrin, as proposed for Alternative 4, would reduce access to the project for disadvantaged communities by limiting access to the trail network from surface roadways near the project.

5.10 Alternative 5: Palm and Nees Access

- *The following replaces the second to last paragraph on page 5-53 of circulated DEIR.*

Alternative 5 includes the project as described in Section 2.4, "Project Description," plus a public vehicle entrance and parking and public access to the trail extension through adjacent privately owned property near the intersection of Palm and Nees avenues. Alternative 5 was developed to address limited public access to the River for residents of the Fresno metropolitan area, because of the travel distance to the proposed Perrin Avenue parking area. As discussed in Revised Section 4.2, "Environmental Justice—Disadvantaged Communities," providing recreational opportunities along the River is an important benefit of the project to nearby disadvantaged communities and providing adequate convenient vehicular access points is important to reducing barriers to equitable access to the benefits of the project.

5.10.1 Environmental Setting

No changes have been made from the circulated DEIR.

5.10.2 Aesthetics and Visual Resources

No changes have been made from the circulated DEIR.

5.10.3 Agriculture and Forestry Resources

No changes have been made from the circulated DEIR.

5.10.4 Air Quality

No changes have been made from the circulated DEIR.

5.10.5 Biological Resources

No changes have been made from the circulated DEIR.

5.10.6 Cultural Resources

No changes have been made from the circulated DEIR.

5.10.7 Geology and Soils

No changes have been made from the circulated DEIR.

5.10.8 Greenhouse Gas Emissions

No changes have been made from the circulated DEIR.

5.10.9 Hazards and Hazardous Materials

- *Mitigation measure Alt 5 Hazardous Materials 7 through 9 found on page 5-82 through 5-83 of the circulated DEIR is replaced with the following:*

Mitigation Measure Alt. 5–Hazards and Hazardous Materials-1

Consistent with State of California procedures and in conjunction with the Conservancy's real property acquisition process, the Conservancy will obtain:

1.0 A Phase II Environmental Site Assessment prepared by a licensed environmental professional and performed to ASTM standards (ASTM E1903-11) at the locations of the proposed paved pedestrian/bicycle path (adjacent to the existing access road) and new parking area and associated facilities (at the base of the existing access road). Testing shall include sampling of soil and groundwater for constituents of concern such as volatile organic compounds, along with vapor monitoring for ambient air emissions of constituents such as methane. Laboratory results shall be presented and summarized in a report, which shall be submitted to the County of Fresno Department of Public Health. The report shall recommend specific additional site investigation needs if appropriate, remedial activities to clean up the property, and any project design features that are necessary to assure human and environmental health and safety with the implementation of Alternative 5;

2.0 Any further site investigations recommended as part of the Phase II Environmental Site Assessment; and

3.0 A post closure land use plan prepared in compliance with 27 CCR Sections 20950–21420. As required by Section 21190, the post closure land use shall be designed and maintained to:

- protect public health and safety and prevent damage to structures, roads, utilities, and gas monitoring and control systems;
- prevent public contact with waste, landfill gas, and leachate; and
- prevent landfill gas explosions.

The land use plan would be submitted to the County of Fresno Department of Public Health and the Central Valley Regional Water Quality Control Board (RWQCB) for review and approval. Upon approval, the plan shall be implemented before the Conservancy acquires the land for the Parkway project.

After real property acquisition, and in conjunction with final design of Alternative 5, the Conservancy will develop the design to avoid or minimize locating the planned pedestrian/bicycle path, proposed parking lot, and amenities on the landfill material and will ensure consistency with the approved post closure land use plan.

Mitigation Measure Alt. 5–Hazards and Hazardous Materials-2

A worker health and safety plan shall be prepared before the start of construction activities within the Alternative 5B project site. The plan shall identify, at a minimum:

- the potential types of contaminants that could be encountered during construction activity;
- all appropriate equipment and procedures to be used during project activities to protect workers, public health, and the environment;
- emergency response procedures;
- the most direct route to the nearest hospitals; and
- an on-site safety officer.

The plan shall describe actions to be taken should hazardous materials be encountered during construction, including protocols for handling hazardous materials and preventing their spread, and procedures for notifying local and/or State regulatory agencies in case of an emergency. The plan shall specify that if evidence of hazardous materials contamination is observed or suspected during site preparation or construction through either obvious or implied measures (i.e., stained or odorous soil or groundwater), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the site and collect and analyze soil and/or groundwater samples, if needed. If the samples identify contaminants, the Conservancy shall employ measures in accordance with federal and State regulations, or shall coordinate with the landowner or other responsible party to employ such measures, before construction activities can resume at the site.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Alt. 5–Hazards and Hazardous Materials-1, and Alt. 5–Hazards and Hazardous Materials-2 would reduce the potential impact related to human health and environmental hazards from construction at the former Kepco Pinedale Landfill to **less than significant** because any necessary remedial activities would occur before the property was acquired for public use; a worker health and safety plan would be implemented should contaminated soil or groundwater be encountered; and a post closure land use plan approved by regulatory agencies would be implemented.

5.10.10 Hydrology and Water Quality

No changes have been made from the circulated DEIR.

5.10.11 Land Use and Planning

- *The following replaces the second to last paragraph on page 5-88 of circulated DEIR:*

  Some lands in the Alternative 5 project area are in private ownership; they would need to be acquired by a public agency for Alternative 5 to be implemented. The private-access roads affected by Alternative 5 are encumbered by public-access easements owned by the City of Fresno and the State of California. These easements provide for public access under specified conditions; in order to implement Alternative 5 additional easement rights would need to be acquired by a public agency from willing landowners and at mutually agreeable terms.

5.10.12 Mineral Resources

No changes have been made from the circulated DEIR.

5.10.13 Noise

No changes have been made from the circulated DEIR.

5.10.14 Population and Housing

No changes have been made from the circulated DEIR.

5.10.15 Public Services

No changes have been made from the circulated DEIR.

5.10.16 Recreation

- *The following replaces the last paragraph on page 5-93 of circulated DEIR:*

  Under Alternative 5, additional parking (40 more spaces) and vehicular visitor access to the trail extension and recreation amenities would be provided through the Palm and Nees Avenue entrance. ADA-compliant access would be provided from the parking area to the trail extension. The alternative would reduce the travel distance for each visitor from the Fresno metropolitan area. Additional access would encourage visitor use such as hiking, bicycling, jogging, and picnicking. The Alternative 5 entrance would also help reduce barriers for access to recreation opportunities for disadvantaged communities Like the proposed project, the increase in visitor use would not result in substantial damage to or have an adverse physical effect on the environment. The impact would be **less than significant**.

5.10.17 Traffic

- *The following is added to the analysis of Alternative 5 in circulated DEIR.*

The circulated DEIR found that all study roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base plus Alternative 5 conditions and no impacts were identified. The transportation analysis of Project Buildout (2025) Base plus Alternative 5 considers all improvements that are constructed or planned for completion by 2025.

A supplemental traffic study was prepared to evaluate impacts of the proposed project and alternatives to the project at two study intersections. A copy of the report is found in Appendix DD. The report was prepared consistent with the approach outlined by the City of Fresno Traffic Impact Analysis Guidelines (2009).

As shown below in Table 5.10-1, intersection No. 1) Palm Ave (NS) / Nees Ave (EW)) and intersection No 2) (Del Mar Ave (NS) / Audubon Dr. (EW)) operate at acceptable LOS under current conditions (2017). With the addition of vehicle trips from Alternative 5, operating conditions in the year 2025 Base Conditions would increase delays at intersection No. 2 (Del Mar Ave (NS) / Audubon Dr. (EW)) which is forecast to operate below acceptable LOS. However, the contribution to delays at this intersection with construction of Alternative 5 is less than the 5 second delay utilized by the City of Fresno when evaluating cumulative traffic impacts (See table 5.10-2). For this reason, impacts to the Audubon Drive/Del Mar Avenue intersection under Alternative 5 would be less than **significant impact.**

Table 5.10-1 Intersection Level of Service Year 2017 Base Condition

#	Intersection Location	Control	Existing (Year 2017) Condition			
			AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Palm Ave (NS) / Nees Ave (EW)	TS	29.8	C	31.1	C
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	20.2	C	28.0	D

Table 5.10-2 Intersection Level of Service Year 2025 Plus Alternative 5 Condition

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Alt 5 Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	56.2	E	65.4	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	33.8	D	66.4	F	No

5.10.18 Utilities and Service Systems

No changes have been made from the circulated DEIR.

5.10.19 Cumulative

- *The following is added to the analysis of Alternative 5*

  Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a).

  Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities.

  The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels (circulated DEIR chapter 3). Therefore, the proposed project would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR, chapter 4).

  The trail alignment under Alternative 5complies with policies adopted for the protection of natural resources including setbacks established by the River Parkway Master Plan and limits on landform alteration established by the City of Fresno bluff protection ordinance. All impacts can be reduced to less than significant with incorporation of BMPs and application of mitigation measures. Alternative 5 would not result in a cumulatively considerable contribution to a significant impact.

5.10.20 Environmental Justice Considerations

- *The following replaces the information contained in the DEIR.*

The proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on at Palm and Nees, which results in slightly more potential environmental impacts than the proposed project. For air quality, construction-related and operational emissions are slightly higher than the proposed project, but these impacts remain less than significant with no mitigation required. This alternative also results in additional short-term temporary increases ambient noise levels due the additional construction required for the added roadway, parking lot, and facilities, but this impact is reduced to less than significant levels with Mitigation Measure Noise-1. Overall, based on the environmental impacts analysis for Alternative 5, this alternative does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

As discussed the Revised section 4.2, access to the project for disadvantaged communities would most likely occur by private vehicle because transit options to the project are limited and most disadvantaged communities in Fresno are not within walking or bicycle distance of the project. The proposed entrance at Perrin Avenue is near a currently used informal vehicular access point at the gate of the existing Lewis S. Eaton Trail, which this project extends down river to the west. While the project does improve vehicular access to the River Parkway trail system with this proposed 50 space parking lot, that access point from the Fresno side requires travel north along SR 41 to Children's Boulevard, then travel south along the SR 41 East Frontage Road. Adding another vehicular access point at the existing West Riverview Drive gate and access road, as proposed for Alternative 1, would improve access to the project for disadvantaged communities by providing a more convenient access point utilizing surface roadways near the project. Not requiring the additional travel up SR 41 may help reduce barriers to access for disadvantaged communities in Fresno, including central, southeast and west Fresno, and help ensure the benefits of the project, in terms of equitable access to parks and greenspaces, is shared equitably within the community.

5.11 Alternative 5B

- *Section 5.11is added to the circulated DEIR to read in its entirety as follows. Sections 5.11 through 5.13 of the circulated Draft EIR have been renumbered as 5.12 through 5.14 to follow this new section.*

Alternative 5B includes the proposed Project as described in Section 2.4, “Project Description,” of the circulated DEIR plus an additional public vehicle entrance, and public access to the trail extension through Spano Park, at the terminus of Palm Avenue north of its intersection with Nees Avenue, and parking for 40 vehicles on the floodplain. Alternative 5B was developed to provide additional options to address limited public access to the River for residents of nearby disadvantaged communities, and more broadly for residents of the Fresno metropolitan area.

As shown in Figure 5.11-1, under alternative 5B public access would be provided at Perrin Avenue and by constructing a road from the cul-de-sac at Palm Avenue north of Nees Avenue. The road, with two 12-foot travel lanes and a 6-foot shoulder, would be constructed across the bluff face at a 10% gradient to the River bottom and then proceed in a horseshoe turn around the FMFCD’s stormwater detention Basin “DH.”[11] A retaining wall would be required to stabilize the slope face along the edge of the roadway. A physically separated pedestrian path would parallel the paved road; bicyclists would share the vehicle travel lane. The paved road and pedestrian path would lead to a turnaround near a 40-space parking lot. The turnaround would be designed to accommodate the turning radius of a Fresno Fire Department fire truck. Emergency vehicle access would also be provided via the existing gravel road.

Pedestrians and bicyclists will have two options to access the river from the top of the bluff. Pedestrians and bicyclists can utilize the 6 foot wide sidewalk alongside the access road or make use of a proposed new stairway with bike ramp that will commence from the top of the bluff and at the northwest corner of Spano Park. The parking area, pedestrian path, and a staircase at Spano Park would all connect to the proposed Lewis S. Eaton Trail \extension.

Recreational amenities such as a self-contained vault-toilet ADA-compliant restroom, landscaping, security lighting, and picnic tables would be provided near the parking lot. Although the pedestrian path from the top of the bluff would not be ADA-accessible, the proposed parking area would provide for ADA parking and at-grade access to the proposed trail. The restroom would consist of a prefabricated building that is ADA compliant and constructed on a pad elevated above the 100-year floodplain.

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[11] The proposed access road geometry generally conforms to City Standard Drawing P-56, “Local Street Cross-Section” with a few modifications. Those modifications include continuous cross slope and sidewalk, curb and gutter on one side only.

Figure 5.11-1 Alternative 5B Alignment

Figure 5.11-2 depicts the planned access point at Palm and Nees Avenues. As shown, access to the parking lot would be managed by a vehicle control gate and a fee entrance station. Traffic bollards or boulders would be installed to prevent vehicles from going off-road. A wooden split-rail or similar style fence would parallel the road and pedestrian path from cul-de-sac to the parking lot. The parking lot would also be fenced or encircled with boulders. Natural surface walking paths would lead from the parking lot to the River and an adjacent pond. Both walking paths would be fenced. More details are provided in the preliminary engineering design provided in Appendix EE, Palm Bluffs River Access Schematic Design Report (August 2017).

Table 5.11-1 summarizes Alternative 5B project components by length and area.

Table 5.11-1 Summary of Alternative 5B Project Components

Project Component	Alternative 5B	
	Length (miles)	**Area (Acres)**
Multi-Use Trail (Paved-12 feet wide)	2.5	3.5
Multi-Use Trail (Unpaved-10 feet wide)	3.7	4.3
Access Road	-	.32
Perrin Avenue Parking (Paved)	-	2.2
Palm/Nees Ave Parking (Paved)	-	1.1
Existing Unimproved Trails	2.6	2.6
Restroom, Picnic Area	-	.03
Total	**8.8**	**14.05**

Source: Compiled by AECOM in 2017

Construction of Alternative 5B would require modification to the existing storm drainage facilities within the project limits. In addition to construction of new drainage conduit and inlet there is also the need to modify an existing box culvert and concrete headwall. A non-master plan inlet and vegetative swale with berms would be constructed to collect runoff from the parking lot and northern segment of the access roadway. The swale is proposed to route around the parking lot before daylighting into the river. The purpose of the berm is to allow any collected sediments to settle in the swale before the storm water releases into the river.

For purposes of analysis the design, construction, operation and maintenance of Alternative 5B includes the BMPs described in the previously circulated DEIR. See Section 3.2.2 of the circulated DEIR for a complete list.

5.11.1 Environmental Setting

The Alternative 5B study area is generally delineated on the north by the River and on the south by commercially developed parcels on the plateau above the steep river bluff, including the Park Place Shopping Center and the Palm Bluffs Corporate Center. Residential development is located on the plateau southeast of the study area. Other than Spano Park and the stormwater basin, most of the study area for Alternative 5B consists of undeveloped open space. The area is located adjacent to the end of the proposed trail extension and has been identified in the Parkway Master Plan and the City's General Plan 2025 as a potential River access point. Refer to Figure 5.11-3 for photographs depicting the existing setting along the alignment.

The alignment for Alternative 5B traverses Spano Park, which was constructed in 2001 and dedicated for public use in 2002. The park was built by Riverview Estates in conjunction with Tract Map No. 4913. This map included an 18-lot commercial development, and a 9-lot single-family residential development. The usable park space is 1.13 acres. However, the City also owns the adjacent river bluff-slope property which is 2.3 acres. The park has a concrete walkway along the top of the bluff that provides users with a view of the San Joaquin River and the open space surrounding the River. There is a large cul-de-sac on Palm Avenue with diagonal parking for 18 vehicles.

Table 5.11-2 identifies the parcels, their sizes, land uses and zoning, and owner names. Figure 5.11-4 illustrates the parcels that would be crossed by Alignment 5B. The footprint of Alternative 5B improvements is limited to approximately 1.5 acres.

Table 5.11-2 Study Area for Alternative 5B; Parcels, Sizes, Land Uses, and Owner(s)

Assessor's Parcel Number	Acreage	Existing Land Use Description	Planned Land Use Description	Zoning	Owner
40203063S	11.6	Open Space/Multiuse	Open Space/Multiuse	AE-5	SOB Enterprises
40203047ST	2.3	Open Space/Multiuse	Open Space/Multiuse	Split: AE-20/AE-5	City of Fresno
40203038ST	0.3	Open Space/Multiuse	Open Space/Multiuse	Split: AE-20/AE-5	FMFCD
40203048ST	4.4	Open Space/Multiuse	Open Space/Multiuse	Split: AE-20/AE-5	City of Fresno
40203069ST	206	Open Space/Multiuse	Open Space/Multiuse	AE-5	State of California-Conservancy
40203052ST	3.8	Ponding Basin	Open Space	AE-5	FMFCD
40257012T	1.1	Spano Park	Open Space/ Recreational Park	OS/BP	City of Fresno
40203050ST	0.1	Open Space	Open Space/Multiuse	AE-5	FMFCD
Total Acres	**229.5**				

Source: Compiled by AECOM in 2017

The project area contains a number of utility easements including Comcast, the County of Fresno, Qwest Communications and Time Warner Telecom.

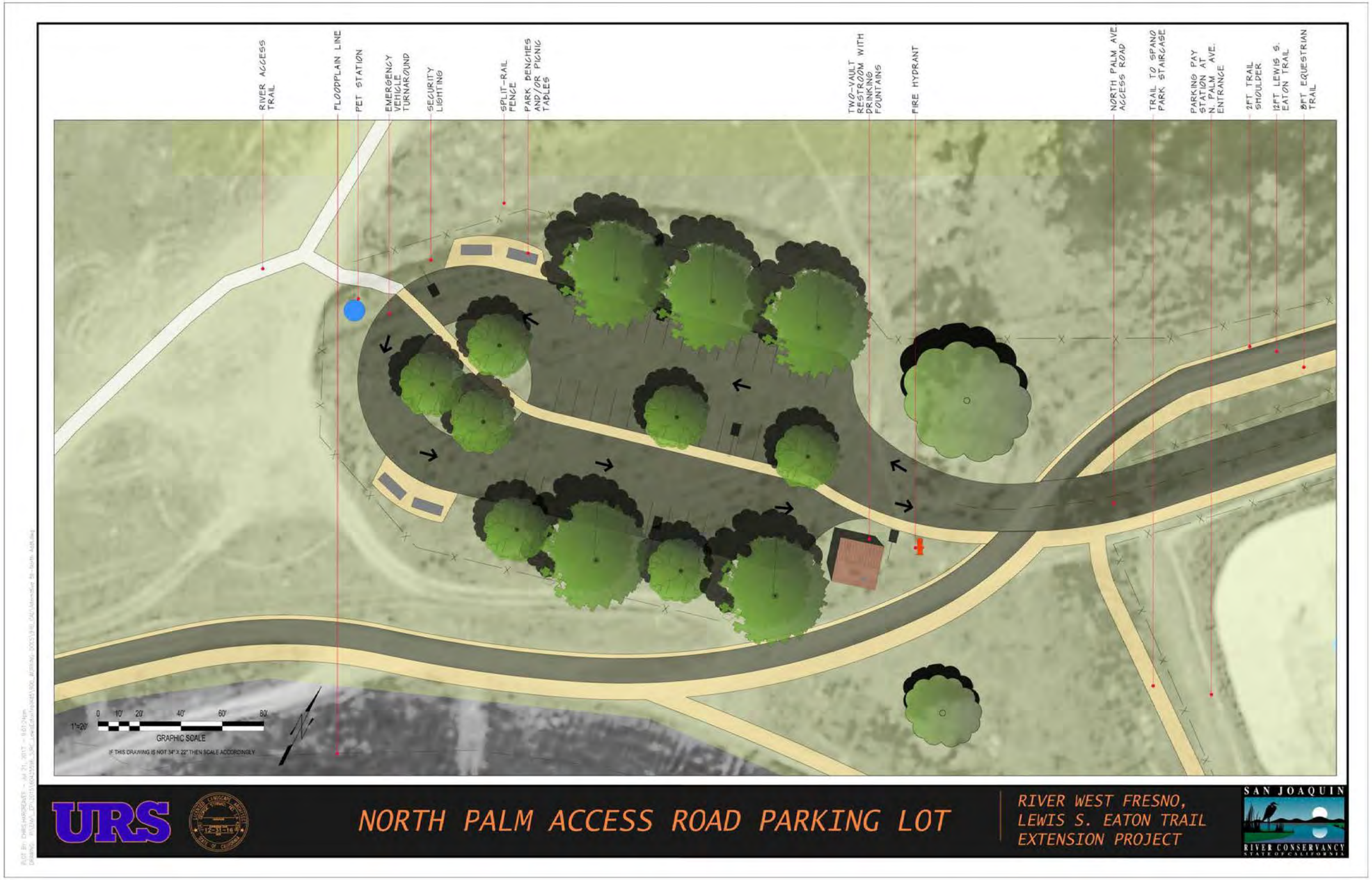

Figure 5.11-2 Palm Nees Parking

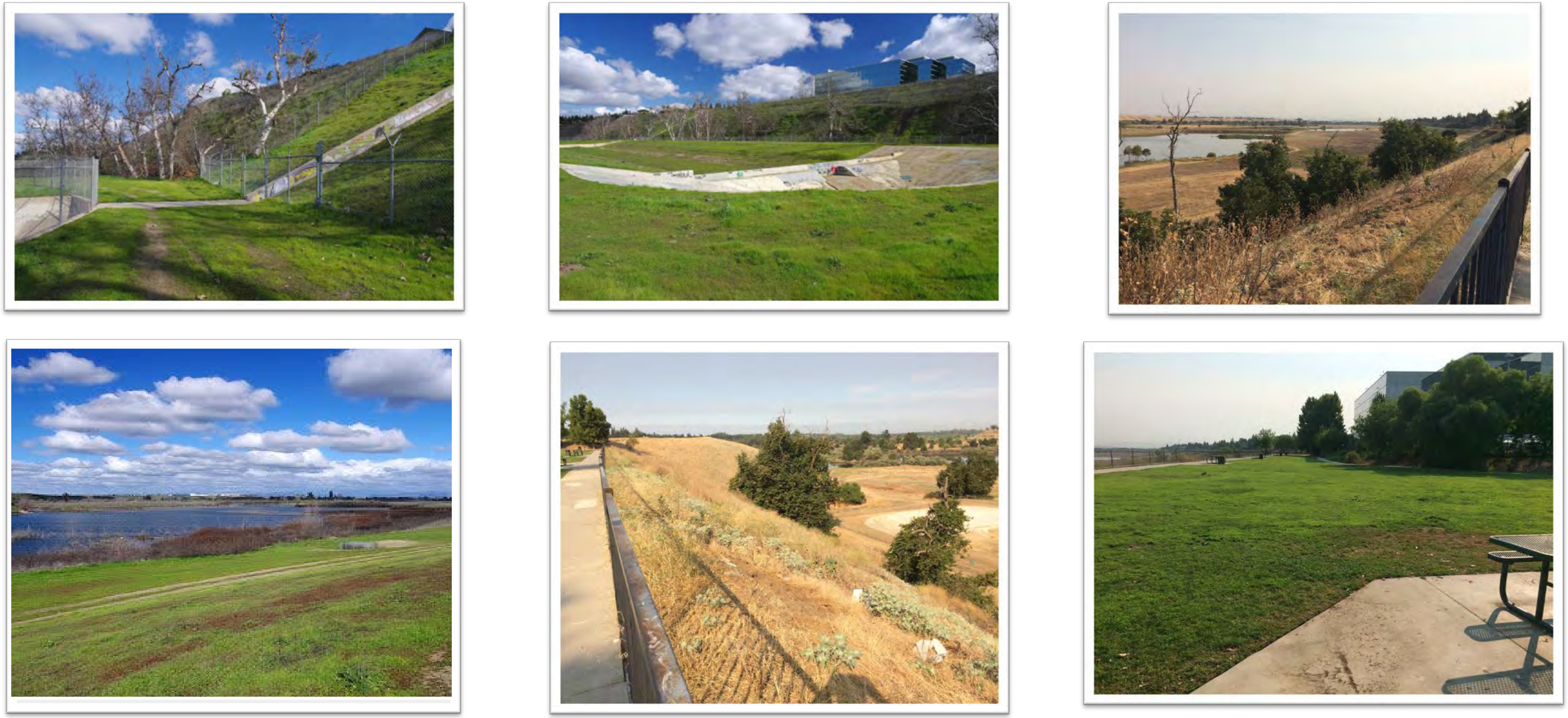

Figure 5.11-3 Views of Alignment

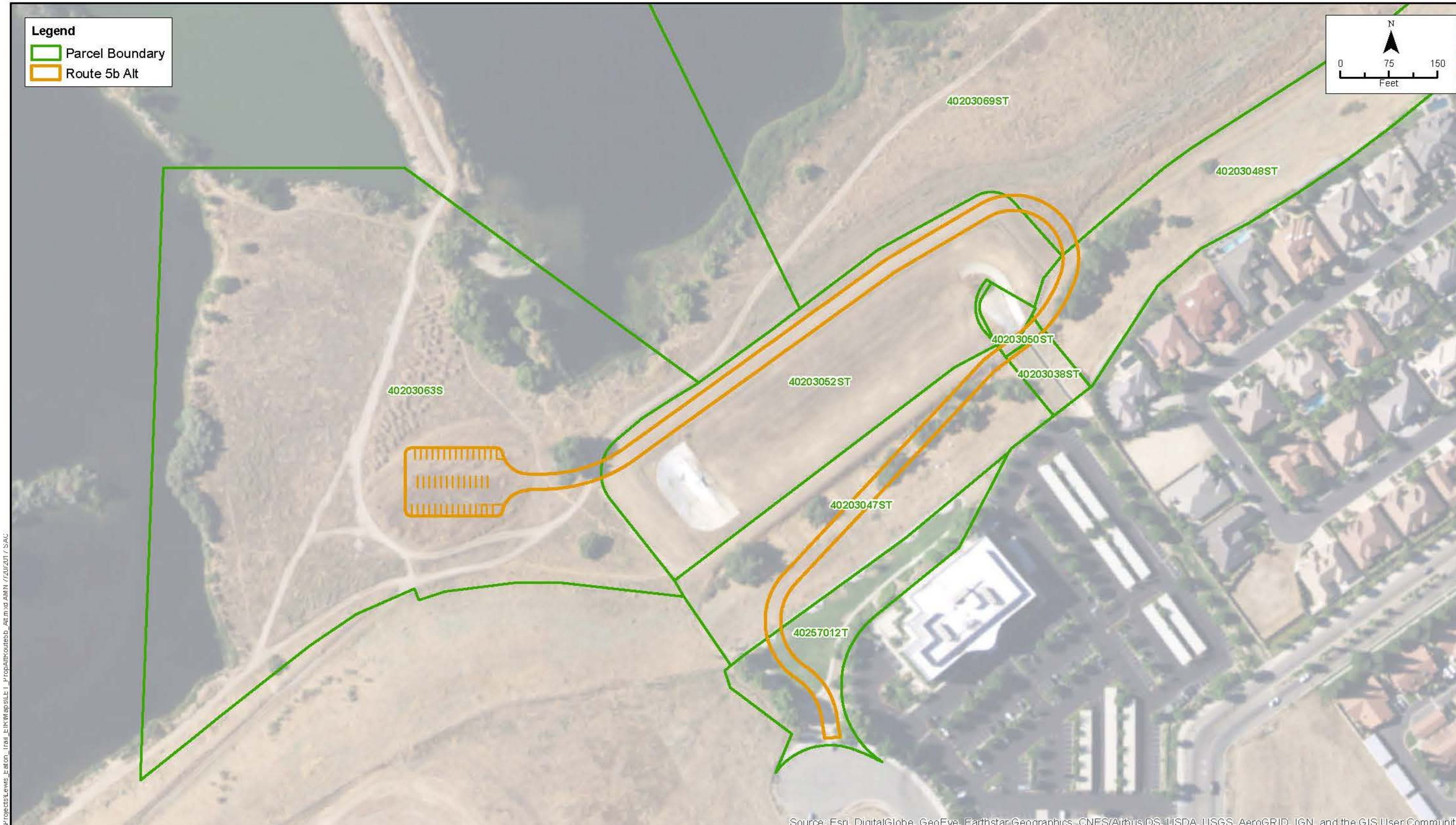

Figure 5.11-4 Parcels

5.11.2 Past Land Use

From the early 1940s to mid-1970s, several locations in the Alternative 5B study area were used for open dumps and landfills. Figure 5.11-5 depicts the approximate location of the various disposal sites[12]. The earliest landfilling is associated with the U.S. Army's Camp Pinedale in 1942; landfilling continued to 1947, when the base was closed. A sewage treatment plant and associated ponds were built in 1943 to serve the Army camp. In 1962, Pinedale Utility District took over the treatment plant and began landfilling or allowed landfilling by Kepco until 1977, when the plant was closed.

The majority of the former Pinedale Dump exists near Palm Avenue and West Nees Avenue, and portions have been more deeply buried, reworked, or remediated. Land in the Alternative 5B study area at the location of the proposed parking area has been used for the disposal of concrete, asphalt, and construction and demolition wastes. Additional landfilling activities of organic wastes (domestic garbage) took place at the former Pinedale Dump (also known as Kepco Pinedale Landfill) along the bluffs.

Based on historical information, the California Department of Resources Recycling and Recovery (CalRecycle) and the County of Fresno Public Health Department, Environmental Health Division, now consider the Kepco landfill, the adjacent A. R. Richer landfill, Calcot landfill, Spano River Ranch landfill, and Pinedale Utility District landfill to be one landfill site. Other names for this landfill area include Kepley Dump, Pinedale Dump, Spano Dump, and Spano River Ranch Landfill Cell. According to the Solid Waste Information System database maintained by CalRecycle, the landfill was known as the Kepco Pinedale Landfill, a Class II landfill, and its regulatory status was "permitted" and operational status was "closed."

Additional information about the past disposal operations are provided in the Phase I Environmental Site Assessment contained in Appendix F to the previously circulated DEIR.

5.11.3 Environmental Consequences

This section of the Revised DEIR addresses environmental impacts for the same topic areas described for alternatives that were examined in the previously circulated DEIR. Mitigation measures are identified immediately following the impact analysis. The degree to which identified mitigation measures would reduce an impact is also described.

When more than one mitigation measure is recommended for a specific impact, all the measures are required to reduce the impact to a level of insignificance unless the word "or" or "alternatively" appears

[12] The illustrated boundaries are approximate and are based on a review of data provided from a Phase I Environmental Site Assessment contained in Appendix F to the previously circulated DEIR.

in the list of mitigation measures. Although not specifically required by CEQA, less-than-significant impacts have also been discussed. No mitigation is required for less-than-significant impacts.

5.11.4 Aesthetics and Visual Resources

Alternative 5B would result in construction of an additional entrance, roadway, parking lot and recreational amenities on vacant land located between the River and Spano Park, and on the western edge of Spano Park. The parking area will include trees for shade and screening. Introduction of these recreational features would be most visible to tenants in commercial buildings; however, some improvements would also be visible to homeowners on the bluffs overlooking the River. This alternative would alter views of the River corridor by grading the existing bluff face and river bottom to accommodate a paved road and parking lot, along with construction of a restroom and picnic structures in the foreground of the existing viewshed. Construction of the roadway on the slope face along the bluff would require removal of mature sycamore trees.

The long-term presence of a parking lot, along with related visitor use, would conflict with the existing visual character of the area if not properly designed. Introduction of security lighting in the parking lot would also create a new source of glare that presently does not exist. Visual impacts under Alternative 5B, like the proposed project, would be **potentially significant;** however**,** implementation of Mitigation Measures Aesthetics and Visual Resources-1 and Aesthetics and Visual Resources-2 from the circulated DEIR would reduce the impact to **less than significant**. No additional mitigation is required.

5.11.5 Agriculture and Forestry Resources

No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forestland is present in the project area. **No impact** on agriculture and forestry resources would occur under Alternative 5B.

5.11.6 Air Quality

Alternative 5B includes construction of the project and an additional parking lot off Palm and Nees Avenues. Air pollutant emissions for this alternative were calculated based upon the information that follows. The Perrin Avenue parking lot is estimated to be 2.23 acres (97,055 square feet) and the Palm and Nees parking lot (including access road) is estimated to be 1.5 acres (65,340 square feet). The modeling also assumed construction of 1,000 square feet of recreational amenities and a restroom at the Palm and Nees Avenue parking area. As with the proposed project, alternative 5B is estimated to generate a total of 558 daily vehicle trips.

Figure 5.11-5 Closed Landfills

As shown in Tables 5.11-3 and 5.11-4, this alternative would generate more construction-related and operational emissions than predicted for the proposed project because of the additional access road and parking lot proposed as part of Alternative 5B. Increases in earthmoving and grading during construction are the greatest contributors to the increase. On a long term basis, enhancing trail access by increasing parking from Palm Avenue is expected to contribute to a small increase in overall operational emissions, assuming a greater number of vehicle miles traveled due to the added entrance and expanded length of the access road. Even with the added emissions, all impacts associated with Alternative 5B would be **less than significant** when compared to air quality thresholds**,** with no mitigation required. The CalEEMod results for lot can be found in Appendix BB.

Table 5.11-3 Estimated Unmitigated Annual Construction Emissions—Project vs. Alternative 5B

	Criteria Pollutant Emissions (tons per year)					
	CO	NO_X	ROG	SO_X	PM_{10}[1]	$PM_{2.5}$[1]
Project	1.0	1.5	2.2	0.0	0.1	0.1
Alternative 5B	3.0	2.6	2.3	0.0	0.3	0.2
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:
CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur
[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.
Source: Estimated by AECOM in 2017

Table 5.11-4 Estimated Unmitigated Annual Operational Emissions-Project vs. Alternative 5B 1

	Criteria Pollutant Emissions (tons per year)					
	CO	NO_X	ROG	SO_X	PM_{10}[1]	$PM_{2.5}$[1]
Project	2.7	0.8	1.9	0.0	0.4	0.1
Alternative 5B	4.0	1.1	2.3	0.0	0.5	0.1
SJVAPCD Threshold	100	10	10	27	15	15
Exceed Threshold?	No	No	No	No	No	No

Notes:
CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = suspended particulate matter; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_X = oxides of sulfur
[1] PM emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 micrometers and particulate matter with aerodynamic diameter 2.5 to 10 micrometers.
Source: Estimated by AECOM in 2017

5.11.7 Biological Resources

This section describes the habitat conditions and species observed on the day of the biological resources survey for Alternative 5B. On September 22, 2015, a reconnaissance-level biological field survey was performed on about 62 acres of land within the Alternative 5B study area. Before this survey, this area had not been surveyed for biological resources. However, two previous surveys had been conducted on adjacent lands. Copies of all prior biological surveys are provided in the previously circulated DEIR.

The study area along the alignment of Alternative 5B is predominately disturbed land that was reclaimed from landfill operations (See Section 3.2.11 Hazards and Hazardous Materials). There are no federally listed or State-listed endangered or threatened plant species with the potential to occur on the Alternative 5B project site. Various special-status wildlife species occur in Fresno and Madera counties and the project vicinity, but those species were determined to be absent from the project site (other than occasional foraging) because the site is outside of the known range of the species, no suitable habitat occurs on the project site, and/or recent species occurrence records are lacking in the site vicinity.

Construction of Alternative 5B would require grading along the bluff face to achieve a 2:1 slope aspect ratio and develop the grade of the roadway and trail at maximum 10%. (See Section 3.2.9 Geotechnical and Soils) Grading activity would remove approximately 5 mature western Sycamore trees which could support nesting birds. Although no special-status wildlife species are present along the Alternative 5B alignment, the potential exists for some of these species to be present at a future time. All native nongame birds are protected under the federal Migratory Bird Treaty Act (MBTA), which prohibits the take of birds and destruction of their nests and eggs. Nesting raptors are present in the vicinity of the site, and previous surveys have identified red-tailed hawks and an osprey nesting within a mile of the site. During the 2015 survey, an osprey and red-tailed hawk were observed flying over the site. Raptors are protected under the MBTA and could be affected by work at this site.

No occurrences of burrowing owl (*Athene cunicularia*) are currently recorded within 5 miles of the Alternative 5B site; however, this project is within the species’ California range and habitat is present. San Joaquin kit fox (*Vulpes macrotis mutica*) is currently absent from the site, but the area is within its range.

Project construction and operation would directly disturb sensitive resources through grading and increased human presence and activity once operational. Similar to the proposed Project, potential impacts of Alternative 5B on plant and animal species would be **significant.** The biological resources BMPs identified in Section 2.5.1, “Best Management Practices,” of the previously circulated DEIR would be implemented as part of Alternative 5B. In addition, Mitigation Measures Biological Resources-1 (Special-Status Plant Species) through Biological Resources-10 (Wildlife Movement) from the previously circulated DEIR would be applied to Alternative 5B which would reduce the impact to **less than significant**. In addition to the BMPS and biological resource mitigation measures 1-10 from the previously circulated DEIR; Alternative 5B would also require the following measure to address the loss of mature trees.

Mitigation Measure Alternative 5B-Biological Resources-1

All mature sycamore trees to be removed during construction of Alternative 5B shall be replaced at a ratio of 5 western Sycamore trees planted for every tree removed, or as otherwise required by the California Department of Fish and Wildlife (CDFW). The replacement trees shall be a minimum of 10 gallon in size and shall be planted within the project site. Irrigation shall be provided for to achieve the survival rate required by CDFW.

Effectiveness of Mitigation Measures

Replanting the western Sycamore trees removed during construction of the roadway and trail along the bluff face would restore the tree canopy and provide nesting and roosting spots for avian species. Potential impacts would be reduced to **less than significant**.

5.11.8 Cultural Resources

A pedestrian survey of the project area was conducted in October 2015. Survey results are presented in the Phase II Archaeological Survey Report found in Appendix E of the previously circulated DEIR. The investigation identified no historical resources in the area. Aside from a few small fragments of historic ceramics and concrete that lacked association or context, no cultural resources were found during the pedestrian survey.

Impacts of Alternative 5B on cultural resources would be similar to those of the proposed Project. No historic resources are present in the area, which has been extensively disturbed by prior excavation for gravel and use as a landfill. On-site soils were excavated and removed during remedial grading at the site of Spano Park with the depth of excavation 30 feet below ground surface. While Native Americans are known to have relied upon the resources found along the San Joaquin River, the alignment traveled by proposed 5B site on the river floodplain largely has been excavated for gravel and subsequently filled with disposed wastes (see Hazards impacts section), so little potential exists to uncover cultural resources or human remains along the river during construction of the Alternative 5B trail extension, parking lot, and turnaround. The impacts would be **less than significant**. The cultural resources BMPs identified in Section 2.5.1, “Best Management Practices,” above would be implemented as part of Alternative 5 in the event unknown resources are uncovered during grading.

5.11.9 Geology and Soils

Topography along the proposed Alternative 5B alignment has been altered over time by previous land uses such that the slope and location of the bluff crest has been substantially modified from natural conditions. Implementation of Alternative 5B would further alter site topography as it would require re-grading the bluff face to lay back the slope to a 2:1 aspect ratio.

According to the U.S. Natural Resources Conservation Service, soils of the Alternative 5B project area are the same as described for the proposed Project: Grangeville fine sandy loam, Hesperia sandy loam, Tujunga, and Riverwash (NRCS 2014). However, native soils along the Alternative 5B alignment have been heavily disturbed by previous land uses. Portions of the land proposed for Alternative 5B are located on and immediately adjacent to the Kepco-Pinedale disposal site which accepted solid wastes and construction and demolition wastes in the 1950s and 1960s (see section 3.2.10 for details). These materials were intermixed with layers of soil, and the landfill waste in un-remediated areas reportedly extends to a maximum depth of approximately 30 feet below the ground surface

The Alternative 5B alignment has been designed such that the proposed roadway traverses land that was remediated in the mid-1990s for development of Spano Park. Soil at the site of Spano Park was excavated to remove solid waste and expose native soils which then were backfilled with clean fill. Approximately 30 feet of engineered fill material was placed over the native soil after the landfill waste was removed, and compacted in accordance with Uniform Building Code Chapter 33 (Appendix CC Twinning Laboratories, 2002).

Implementation of Alternative 5B would require grading along the bluff face to create the access road down to the River bottom. The road grade would have a maximum slope of 10% and a retaining wall would be constructed to support the bluff and ensure soil stability (Figure 5.11-6). This route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: “No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it.” The proposed grading along the bluff face for the access road would be on City-owned land and would not be exempted from the City Bluff Protection Overlay District. The Conservancy would need to apply for approval from the City for a variance. All work would be conducted in accordance with design standards contained in the latest State building code, which requires the preparation of a preliminary soil report, engineering geologic report, and geotechnical report to identify the site specific geologic and soil conditions of the property. The reports would recommend standards to regulate grading activity, soil conditions including density, moisture, and vegetation content, identify preferred methods of drainage control, and evaluate slope stability and foundation, among other standards.

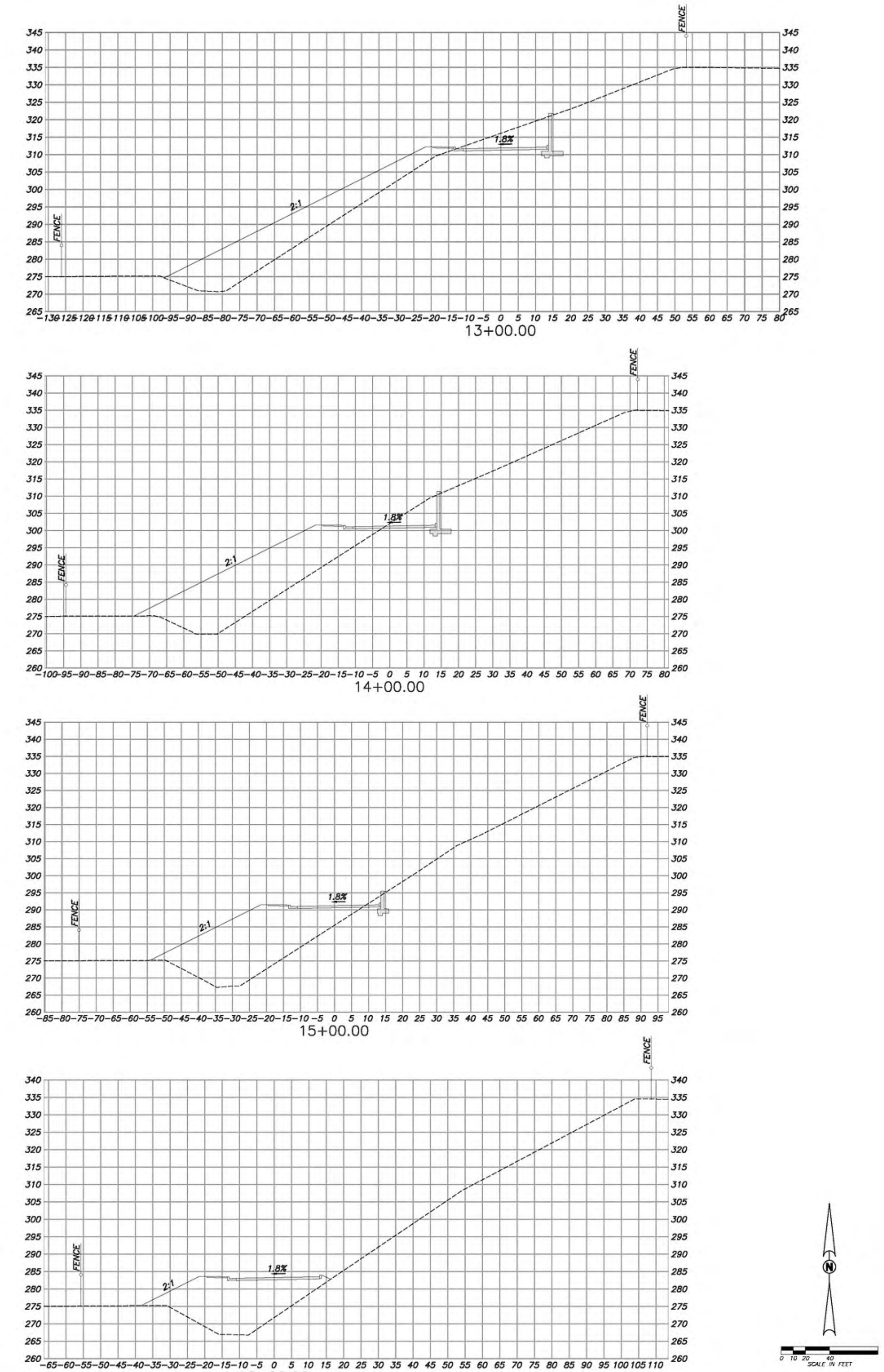

Figure 5.11-6 Proposed Road Grade

Potential impacts of Alternative 5B on geology and soils would be **potentially significant**. The amount of earthwork required to construct Alternative 5B would be greater than that for the project and Alternative 5B creates the need to seek a variance from the City of Fresno to address the Bluff Protection Overlay District**.** The geology BMPs identified in Section 2.5.1, "Best Management Practices," of the previously circulated DEIR would be implemented as part of Alternative 5B. Additionally, implementation of Mitigation Measure Geology and Soils-1 from the previously circulated DEIR and Mitigation Measures Alt 5B Land Use-1, below, would reduce the impact to **less than significant**. No additional mitigation is required.

Mitigation Measure Alt 5B-Geology-1

The Conservancy shall work with the City of Fresno to obtain a variance from the requirements of the Bluff Overlay District to permit construction of the access road and staircase down the slope of the bluff. The variance must be approved by the City of Fresno prior to construction along the slope of the bluff.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Alternative 5B-Geology-1 would reduce the impact to less than significant because the Conservancy would not construct the access road or stairway on the bluff until that time a variance from the requirements is obtained. Conservancy will also prepare the required geology and soils report to document that construction of the facility would not destabilize the slope face.

5.11.10 Greenhouse Gas Emissions

Alternative 5B includes construction of the project plus an additional parking lot off Palm and Nees Avenues. GHG emissions for this alternative were calculated based upon the information that follows. The Perrin Avenue parking lot is estimated to be 2.23 acres (97,055 square feet) and the Palm and Nees parking lot is estimated to be 1.5 acres (65,340 square feet). With construction of the Palm and Nees Avenue parking lot, an additional 1,000 square feet of recreational amenities and a restroom would be constructed. This alternative including the proposed Project elements is estimated to generate a total of 558 total daily vehicle trips.

As shown in Table 5.11-5, this alternative would generate slightly more construction-related and operational emissions than the project. Increased construction activity required to grade the access road across the bluff face would be primarily responsible for the increase in construction emissions associated with Alternative 5B. However, the emissions would not approach any adopted or recommended thresholds[13]. Similarly, Alternative 5B would increase operational emissions compared to the proposed Project by providing conveniently accessible parking that may encourage use of motor vehicles to access the project. The CalEEMod results for the Perrin Avenue parking lot and the Palm and Nees parking lot can be found in Appendix BB. All impacts associated with Alternative 5B would be **less than significant** with no mitigation required.

Table 5.11-5 Total Greenhouse Gas Emissions—Project vs. Alternative 5B

	Total Construction Emissions ($MTCO_2e$)	Amortized Construction Emissions ($MTCO_2e$)	Total Operational Emissions ($MTCO_2e$)
Project	192	6	501
Alternative 5B	348	12	640

Note: $MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: Estimated by AECOM in 2017

5.11.11 Hazards and Hazardous Materials

Impacts of Alternative 5B from routine transport, storage, and use of hazardous materials, along with the potential for accidental spills, would be similar to those of the project and would be **less than significant**. No mitigation is required.

The additional facilities proposed under Alternative 5B would be located west of the project site, but would still be approximately 0.60 mile from Nelson Elementary School, 3.1 miles from the Sierra Skypark airport, and 2.45 miles from the heliport at Valley Children's Hospital. Therefore, like the project, Alternative 5B would have **no impact** related to emissions of hazardous materials within 0.25 mile of a school or related to hazards from airports and airstrips.

Alternative 5B would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees Avenue entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The Perrin Avenue entrance would also provide access for emergency vehicles. The trail leading from the Alternative 5B site to the trail extension would accommodate emergency response vehicles. Construction activity would occur only within the project site and would not block or reduce access to city streets. Therefore, like the project, Alternative 5B would have **no impact** related to interference with emergency response and/or evacuation plans.

[13] The Bay Area Air Quality Management District and Sacramento Metropolitan Air Quality Management District developed a threshold of 1,100 $MTCO_2e$ annually; San Diego County developed a threshold of 2,500 $MTCO_2e$ annually, based on the different mix and scale of forecast development projects in this region compared to the Bay Area. The California Air Pollution Control Officers Association developed a threshold of 900 $MTCO_2e$ annually, which was designed to "capture" approximately 90% of future stationary emission sources, so that feasible mitigation could be imposed on most projects.

Because Alternative 5B would entail construction of additional recreation facilities near to the River, the potential for wildland fire hazards from sparks emitted by construction equipment would be greater than the project's wildland fire hazard, and the impact would be **potentially significant**. The hazards and hazardous materials BMPs identified in Section 2.5.1, "Best Management Practices," of the previously circulated DEIR would be implemented as part of Alternative 5B. Implementing Mitigation Measures Hazards and Hazardous Materials-1 through Hazards and Hazardous Materials-6 from the previously circulated DEIR would reduce the potential impact to **less than significant**. No additional mitigation is required.

As discussed in the Phase I Environmental Site Assessment (Appendix F of the previously circulated DEIR), an open dump and landfill on private land in the vicinity of Alternative 5B was operating under the name Kepco in the 1950s. Solid wastes were placed in natural depressions and drainages and on the bluff face from the 1950s to 1978. The exact boundaries of the Kepco landfill are difficult to determine. Anecdotal reports suggest that several locations were used somewhat indiscriminately in the 1950s and 1960s. Paint and degreaser sludge were also deposited into the Kepco Pinedale Landfill. This sludge contained metallic pigments, volatile aliphatic hydrocarbons, alcohols, esters, and ketones. Waste also included household and commercial refuse, garbage, other decomposable organic material, scrap metals, and solid inert materials. These materials have been intermixed with layers of soil, and they reportedly extend to a maximum depth of approximately 30 feet below the ground surface. In addition, construction debris has been dumped on the surface. The proposed alignment of Alternative 5B has been designed to cross Spano Park, where remedial activity to remove landfill waste was conducted in the 1990s.

Waste accepted in past gravel pit excavations below the bluff included concrete and brick construction debris and garbage. These wastes underlie the site of the proposed parking area.

Previous tests concluded that groundwater quality has not been adversely affected by the landfill activities, with the exception of the deposit of Freon-12 into the landfill (Appendix F of previously circulated DEIR). Gas monitoring wells have detected the presence of methane gas, a gas generated by decomposing wastes, at levels above the lower explosive limit.[14] Two underground fires were observed in the 1990s at locations along the bluff east and south of the proposed parking lot, at the foot of the existing private access road. Soil vapor samples collected from within the landfill area have indicated the presence of several volatile organic compounds, such as vinyl chloride and benzene, at levels above the respective human health screening levels (OEHHA 2010).

Post closure plans must be prepared before disposal areas can be converted to other uses. A post closure plan has not been prepared for the unregulated landfill activities on and near the Alternative 5B

[14] The lower explosive limit is the lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (arc, flame, or heat).

site. The presence of the known contaminants in the Kepco-Pinedale Landfill represents a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway and a new parking lot at the base of the road, under Alternative 5B could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene). Furthermore, construction activities at former landfill areas could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet. Over time, this condition would increase the potential for the presence of explosive and flammable gases and possible leachate movement and accumulation. Additionally, disturbed landfill soils could become mobilized, causing potential human health and pollution issues. Due to the proximity to the Kenpo-Pinedale Disposal Site construction at the location of the parking lot may potentially encounter landfill materials and present a potential hazard from unstable soils that may be unsuitable for use as a base material. Therefore, the impact of Alternative 5B from hazards related to project construction and operation would be **potentially significant**.

Mitigation Measure Alt. 5B–Hazards and Hazardous Materials-1

Consistent with State of California procedures and in conjunction with the Conservancy's real property acquisition process, the Conservancy will obtain:

1.0 A Phase II Environmental Site Assessment prepared by a licensed environmental professional and performed to ASTM standards (ASTM E1903-11) at the locations of the proposed paved pedestrian/bicycle path (adjacent to the existing access road) and new parking area and associated facilities (at the base of the existing access road). Testing shall include sampling of soil and groundwater for constituents of concern such as volatile organic compounds, along with vapor monitoring for ambient air emissions of constituents such as methane. Laboratory results shall be presented and summarized in a report, which shall be submitted to the County of Fresno Department of Public Health. The report shall recommend specific additional site investigation needs if appropriate, remedial activities to clean up the property, and any project design features that are necessary to assure human and environmental health and safety with the implementation of Alternative 5B;

2.0 Any further site investigations recommended as part of the Phase II Environmental Site Assessment; and

3.0 A post closure land use plan prepared in compliance with 27 CCR Sections 20950–21420. As required by Section 21190, the post closure land use shall be designed and maintained to:

- protect public health and safety and prevent damage to structures, roads, utilities, and gas monitoring and control systems;

- prevent public contact with waste, landfill gas, and leachate; and
- prevent landfill gas explosions.

The land use plan would be submitted to the County of Fresno Department of Public Health and the Central Valley RWQCB for review and approval. Upon approval, the plan shall be implemented before the Conservancy acquires the land for the Parkway project.

After real property acquisition, and in conjunction with final design of Alternative 5, the Conservancy will develop the design to avoid or minimize locating the planned pedestrian/bicycle path, proposed parking lot, and amenities on the landfill material and will ensure consistency with the approved post closure land use plan.

Mitigation Measure Alt. 5B–Hazards and Hazardous Materials-2

A worker health and safety plan shall be prepared before the start of construction activities within the Alternative 5B project site. The plan shall identify, at a minimum:

- the potential types of contaminants that could be encountered during construction activity;
- all appropriate equipment and procedures to be used during project activities to protect workers, public health, and the environment;
- emergency response procedures;
- the most direct route to the nearest hospitals; and
- an on-site safety officer.

The plan shall describe actions to be taken should hazardous materials be encountered during construction, including protocols for handling hazardous materials and preventing their spread, and procedures for notifying local and/or State regulatory agencies in case of an emergency. The plan shall specify that if evidence of hazardous materials contamination is observed or suspected during site preparation or construction through either obvious or implied measures (i.e., stained or odorous soil or groundwater), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the site and collect and analyze soil and/or groundwater samples, if needed. If the samples identify contaminants, the Conservancy shall employ measures in accordance with federal and State regulations, or shall coordinate with the landowner or other responsible party to employ such measures, before construction activities can resume at the site.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Alt. 5B–Hazards and Hazardous Materials-1, and Alt. 5B–Hazards and Hazardous Materials-2 would reduce the potential impact related to human health and environmental hazards from construction at the former Kepco Pinedale Landfill to **less than significant** because any necessary remedial activities would occur before the property was acquired for public use; a worker health and safety plan would be implemented should contaminated soil or groundwater be encountered; and a post closure land use plan approved by regulatory agencies would be implemented.

5.11.12 Hydrology and Water Quality

Water Quality

Temporary Impacts. For Alternative 5B, an extended multiuse trail route, 40-stall parking lot, access road and turnaround, and restrooms would be constructed in addition to the facilities described in Chapter 3 for the proposed Project. The BMPs would be the same for this alternative as for the project. The area of disturbance and paved surfaces for Alternative 5B would be greater than that of the proposed Project and the access road under this alternative would be constructed on a steep, erodible slope. Alternative 5B includes project features located in an area that was formerly used for the Kepco Pinedale Landfill. A plume of groundwater contaminated with trichloroethylene, polychlorinated biphenyls, and chloroform is situated below the residential development on the bluffs, near the intersection of Nees and Palm avenues. The soils near the groundwater plume may also be contaminated. Disturbing the soil during construction could mobilize sediments laced with contaminants of concern, resulting in a health hazard and a potential source of polluted sediment that could enter receiving waters. Construction near the former landfill could disturb drainage patterns, or could disturb vegetative cover, which could cause or allow the landfill materials to become wet, thereby increasing the potential for possible leachate releases over time. The impact would be **potentially significant.**

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Additionally, implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 as described for the project in the previously circulated DEIR would adequately reduce most water quality impacts associated with construction of Alternative 5B to **less than significant**. However, the potential would remain for water quality impacts associated with construction in areas with possible contamination. The impact would be **potentially significant.**

Mitigation Measure Alt. 5B–Hydrology and Water Quality-1

Before any surface-disturbing construction begins, the Conservancy shall implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-1, requiring completion of a subsurface assessment, avoidance, and post closure plan (if required) for land within and adjacent to the alignment of the access road, multiuse trail, and parking lot, to determine the presence of contaminants of concern. The assessment shall be completed along the face of the slope adjacent to the trail and access road alignment. If contaminants of concern are present, the area shall be remediated as recommended in the assessment and as required by regulatory agencies. In addition, the Conservancy shall implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-2, requiring preparation of a worker health and safety plan.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measure Alt. 5 Hydrology and Water Quality-1 would reduce the potential temporary impact on water quality associated with the former and fills to **less than significant** because a post closure land use plan approved by regulatory agencies would be implemented to remediate any hazards before the start of earthmoving activities, and a worker health and safety plan would be implemented should any contaminated soil or groundwater be encountered. No additional mitigation is required.

<u>Long-Term Impacts</u>. The area of new impervious/paved surfaces associated with Alternative 5B would add additional surfaces to those of the proposed Project (Table 5.11-6). Alternative 5B would provide an additional restroom facility along with the facilities and uses described for the project.

As discussed above for temporary impacts, placing facilities near the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet, thereby increasing the potential for possible leachate movement or accumulation over time. The impact would be **potentially significant**.

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, Hydrology and Water Quality-3, and Hydrology and Water Quality-4 as described for the project in the previously circulated DEIR would adequately reduce long-term water quality impacts of Alternative 5B to **less than significant**. No additional mitigation is required.

Grading along the face of the bluff to construct the access road could cause erosion if not properly designed and constructed. Alternative 5B includes grading the bluff face to reach a 2:1 slope angle, which would improve soil stability and reduce the potential for erosion. A retaining wall and drainage system would also be constructed along the roadway to stabilize the slope face and further minimize the potential for soil erosion. With the incorporation of BMPs found in the previously circulated DEIR the potential impacts to water quality would be **less than significant**. No additional mitigation is required.

Groundwater

Temporary Impacts. The construction activities for the proposed Project and Alternative 5B would be similar; therefore, the temporary impacts of Alternative 5B on groundwater would be similar to those for the project and would be **less than significant**. (Potential impacts associated with the creation and movement of leachate is discussed in the previous section.) No mitigation is required

Long-Term Impacts. The area of new impervious/paved surface associated with Alternative 5B would be greater than that of the proposed Project (see Table 5.11-6). However, the percentage of impervious/paved surface proposed is very small relative to the total area of the project site, and this increase would not measurably affect recharge to the local groundwater basin. Operations under Alternative 5B would not substantially increase groundwater demands, and existing supplies provided for fire suppression are expected to be adequate to serve the site under Alternative 5B without lowering groundwater levels. The long-term impact on groundwater would be **less than significant.** No mitigation is required.

Drainage

Temporary Impacts. As with the proposed Project, Alternative 5B would require grading, moving soil, and placing structures within flood zones, which could alter drainage courses and runoff patterns from existing conditions. In addition, Alternative 5B would require construction of structures on steep slopes, which can further alter drainage patterns. As shown in Table 5.11-6, the area of disturbance in the Federal Emergency Management Agency (FEMA) 100-year floodplain and the designated floodway is greater than that for the project. Although the area of disturbance is slightly larger for Alternative 5B compared to the proposed project, the construction activities for the project and Alternative 5B would be similar, and the BMPs and mitigation measures would be the same. Therefore, the temporary impacts of Alternative 5B would be similar to those of the project. This temporary impact would be **potentially significant.**

Table 5.11-6 Project plus Alternative 5B Components within the 100-Year Floodplain and Designated Floodway

Project Component	100-Year Floodplain		Designated Floodway	
	Length (miles)	Area (acres)	Length (miles)	Area (acres)
Multiuse Trail (paved—12 feet wide)	1.4	2.0	0	0
Multiuse Trail (unpaved—10 feet wide)	1.7	2.1	0	0
Perrin Avenue Parking (paved)	0	0	0	0
Perrin Avenue Parking(unpaved)	0	0	0	0
Bluff Roadway (paved)	0	0	0	0
Hiking Trails	1.8	1.3	0	0
Trail Extension (paved)	0.09	0.48	0	0
5B Parking (paved)	0.034	1.18	0	0
Total	**5.02**	**7.06**	**0**	**0**

Source: Compiled by AECOM in 2017

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, and Hydrology and Water Quality-6 as described for the project in the previously circulated DEIR would reduce the temporary hydromodification impacts from placement of Alternative 5B structures in areas of the former landfill to **less than significant**.

<u>Long-Term Impacts</u>. Placing impervious/paved surfaces, structures, fences, landscaping and other project components adjacent to or within the floodway and FEMA 100-year floodplain could contribute to changes to hydrologic and/or geomorphic processes. Table 5.11-6 presents the portion of Alternative 5B located within the designated floodway and floodplain. Both the parking lot and restroom would encroach into the designated FEMA floodplain. These surfaces would be hardscaped or paved. The total area of impervious/paved and hard-packed surfaces within the 100-year floodplain and designated floodway would be slightly greater under Alternative 5B than under the project. As discussed above for construction, placing facilities within the 100-year floodplain and designated floodway could disturb drainage patterns or disturb the cover in landfill areas, which could further affect hydrologic and/or geomorphic processes. This impact would be **potentially significant.**

Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measures Hydrology and Water Quality-4, Hydrology and Water Quality-5, Hydrology and Water Quality-6 as described for the project in the previously circulated DEIR would reduce the long-term hydromodification impacts from placement of structures for Alternative 5B to **less than significant**.

Runoff. Temporary and long-term impacts of Alternative 5B on runoff would be similar to those described for the project. Improvements associated with Alternative 5 B would include drainage improvements to capture runoff and direct it to a new inlet at the toe of the bluff (see Appendix EE for the design study). Hydrology and water quality BMPs and applicable policies from the Conservancy's Parkway Master Plan would be implemented and other regulatory requirements would be met. Implementation of Mitigation Measure Hydrology and Water Quality-7 from the previously circulated DEIR, and Mitigation Measure Alt. 5 Hydrology and Water Quality-3 as described above would reduce hydromodification impacts from placement of structures for Alternative 5B to **less than significant**. No additional mitigation is required.

100-Year Floodplain and Designated Floodway. Table 5.11-6 summarizes the components of Alternative 5B that would affect land within the 100-year floodplain and designated floodway. Under Alternative 5B, a total of 7 acres within the 100-year floodplain would be affected, which is slightly more area than under the proposed project. Construction of both paved and unpaved portions of the trail would occur within the 100-year floodplain and designated floodway.

Construction of the prefabricated restroom and parking area would lie within the 100 year floodplain. The restroom must be elevated one foot above the base flood elevation as required by the Parkway Master Plan, which requires introduction of fill into the river bottom. City of Fresno Ordinance 11-616(g) prohibits the import of fill below base flood elevation. Under this ordinance, the City of Fresno Flood Plain Administrator must determine that the volume of space occupied by fill is compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation and the ordinance requires submittal of a Letter of Map Revision (LOMR) to FEMA once the ground is proven to be above flood level. Overall, impacts of Alternative 5B would be greater than impacts of the project and would be **potentially significant**. Portions of the multiuse trail and emergency vehicle turn around would be located within the designated floodway. However, implementation of Mitigation Measure Hydrology and Water Quality-9 from the previously circulated DEIR would reduce the impact to **less than significant**. No additional mitigation is required.

Exposure of People or Structures to Flooding. Temporary and long-term impacts of Alternative 5B regarding exposure of people or structures would be similar to those described for the proposed Project and would be **less than significant**. No mitigation is required.

Seiche, Tsunami, or Mudflow. Temporary and long-term impacts of Alternative 5B regarding the potential for seiche, tsunami, or mudflow would be similar to those described for the project. **No impact** would occur related to potential for a seiche or tsunami, and the impact related to mudflow potential would be **less than significant**. No mitigation is required.

5.11.13 Land Use and Planning

The California State Lands Commission has jurisdiction and management authority over all ungranted submerged lands owned by the State; the beds of navigable rivers, streams, lakes, bays, estuaries, inlets, and straits including tidelands and submerged lands; and the beds of navigable rivers (PRC Section 6301). The lands along the River between the ordinary high-water marks are subject to the jurisdiction of the California State Lands Commission. The proposed parking area for Alternative 5B is within state sovereign lands under the State Lands Commission's jurisdiction. The proposed uses and improvements are generally consistent with the public-trust uses allowed by the commission. As for the proposed Project, Conservancy improvements proposed on state sovereign lands will require the Conservancy to enter into a lease with the State Lands Commission.

Alternative 5B would not physically divide an established community, but may be inconsistent with the Bullard Community Plan policy 4 under Special Issues, Policies and Standards: River bottom and Bluffs, which states, "Preserve the river bluffs as a unique geological feature in the San Joaquin Valley." Alternative 5B would alter the face of the bluff traveling 62 vertical feet and removing over 17,000 cubic yards. Alternative 5B may also be found inconsistent with the grading standards as described in Article 16 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1603 of the overlay limits alteration of the bluff face. Measures would be required to provide for slope stabilization and erosion control including drainage swale, and the Conservancy must apply for a variance from the City's policy (see Land Use. This is considered to be a **potentially significant impact.**

Alternative 5B would meet multiple objectives of the San Joaquin River Master Plan by providing recreational and educational opportunities to all segments of the population avoids disturbance to sensitive habitat areas by using existing points of access, siting uses on previously disturbed land when feasible, and locates intensive activities away from natural resources, and minimizes disturbance to private property. **No impact** would occur

Mitigation Measure Alternative 5B-Land Use-1

In accordance with Mitigation Measure Alternative 5B-Land Use 1, the conservancy shall work with the City of Fresno to obtain a variance from the requirements of the Bluff Overlay District to permit construction of the access road and staircase down the slope of the bluff. The variance must be approved by the City of Fresno prior to construction along the slope of the bluff.

Effectiveness of Mitigation Measure

Implementation of Mitigation Measures Alternative 5B-1 Land Use 1would reduce the impact to **less than significant** because the Conservancy would not construct the access road or stairway on the bluff until such time that a variance from the requirements is obtained from the City. The Conservancy will also prepare the required geology and soils report to document that construction of the facility would not destabilize the slope face. In order to implement Alternative 5B additional property and easement rights would need to be acquired by a public agency from willing landowners and at mutually agreeable terms.

5.11.14 Mineral Resources

Like the project, Alternative 5B would not result in the loss of a known mineral resource. **No impact** would occur.

5.11.15 Noise

Construction of the additional public parking lot and access road under Alternative 5b would involve increased construction activity compared to the proposed project. However, the construction activities would cause only a short-term temporary increase in ambient noise levels. Noise levels could exceed ambient noise standards established by the City of Fresno for residential areas. The impact of noise levels exceeding 55 dBA, even temporarily, would be **significant**. Implementation of Mitigation Measure Noise-1 from the previously circulated DEIR would reduce the impact to **less than significant**. No additional mitigation is required.

5.11.16 Population and Housing

Similar to the project, Alternative 5B would not induce substantial population growth or displace a substantial number of housing units. **No impact** would occur.

5.11.17 Public Services

Similar to the project, Alternative 5B would not alter existing public service ratios, response times, or performance standards for fire or police protection and would not induce population growth or demand for new school facilities. **No impact** would occur.

5.11.18 Recreation

Under Alternative 5B, additional parking (40 more spaces) and vehicular visitor access to the trail extension and recreation amenities would be provided through the Palm and Nees Avenue entrance. ADA-compliant access would be provided from the parking area to the trail extension. This additional access may be more convenient and involve shorter trip distances for visitors from the Fresno metropolitan area, which may encourage increased visitor use such for recreational access to hiking, bicycling, jogging, and picnicking. The increase in visitor use would not result in substantial damage to or have an adverse physical effect on the environment.

Spano Park is currently 1.13 acres, used as a vista point, with picnic tables, benches, and irrigated turf and shade trees. With construction of the Alternative 5B entrance and access road, the usable park area would be reduced to 0.89 acres. The project would include restoration of the landscaping, tables, and benches. Most of the current function of the park would be restored, and the alternative would result in an added public vehicle and bicycle access point for the project area, consisting of approximately 500 acres of public open space. The impact would be less than significant. No mitigation is required.

5.11.19 Transportation

A supplemental traffic study was prepared to evaluate impacts of the proposed project and alternatives to the project. A copy of the report is found in Appendix DD. The report was prepared consistent with the approach outlined by the City of Fresno Traffic Impact Analysis Guidelines (2009).

As shown in Table 5.11-7, five of six studied roadway segments are forecast to operate at LOS C or better under Project Buildout (2025) Base plus Alternative 5B condition. Segment No. 3, Audubon Drive between SR-41 and Palm Avenue, would operate at LOS E in the year 2025 base and Base plus Alternative 5B condition. Alternative E is considered as the minimum acceptable operating condition according to the City of Fresno Traffic Impact Study Report Guidelines (City of Fresno 2009).[15] Similar to with-project conditions, all roadway segments under Alternative 5B have sufficient capacity to accommodate added traffic and still operate at acceptable LOS. The impact to roadway segments would be **less than significant.** No mitigation is required.

Table 5.11-8 illustrates the operating condition of two roadway intersections examined in this partially revised DEIR. As shown in Table 5.11-8, intersection No. 1) Palm Ave (NS) / Nees Ave (EW)) and intersection No 2 (Del Mar Ave (NS) / Audubon Dr. (EW)) operate at acceptable LOS under current conditions (2017). With implementation of the proposed project, the intersections would continue to operate at acceptable levels in both existing plus project and cumulative (year 2025 plus project) conditions. In comparison, addition vehicle trips from Alternative 5B to the year 2025 Base Conditions would increase delays at intersection No. 2 (Del Mar Ave (NS) / Audubon Dr. (EW)) which is forecast to operate below acceptable LOS. However, the contribution to delays at this intersection with construction of Alternative 5B is 1.1 seconds, which is less than the 5 second delay utilized by the City of Fresno when evaluating cumulative traffic impacts. For this reason, impacts to the Audubon Drive/Del Mar Avenue intersection would be less than **significant impact.**

[15] A project is considered to have an individually significant impact on the operation of an intersection if the additional traffic generated from the project would:
- trigger an intersection operating at an acceptable LOS to operate at an unacceptable LOS,
- trigger an intersection operating at an unacceptable LOS (LOS E) to operate at LOS F, or
- increase the average delay for a study intersection that is already operating at an unacceptable LOS.

Table 5.11-7 Roadway Segment Analysis Project Buildout (2025) Base plus Alternative 5B Conditions

Roadway Segment		# of Lanes	Direction	Year 2025 Baseline Condition					Year 2025 Plus Project Plus Alternative 5B Condition				
#	Location			ADT	AM Peak Hour		PM Peak Hour		ADT	AM Peak Hour		PM Peak Hour	
					Volume	LOS	Volume	LOS		Volume	LOS	Volume	LOS
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	36,630	760	B	1,142	B	36,948	800	B	1,195	B
			SB		603	B	1,368	B		623	B	1,388	B
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	210	11	C	8	C	528	31	C	28	C
			SB		3	C	8	C		43	C	61	C
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	18,177	526	C	1,152	E	18,225	529	C	1,155	E
			WB		921	E	686	C		927	E	694	C
4	Audubon Drive East of SR-41	2/D	EB	20,228	636	C	1,188	C	20,276	639	C	1,191	C
			WB		911	C	799	C		917	C	807	C
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	2,168	33	C	68	C	2,168	33	C	68	C
			SB		91	C	95	C		91	C	95	C
6	Palm Avenue South of Nees Avenue	2/D	NB	42,798	896	C	1,554	C	42,894	908	C	1,570	C
			SB		1,228	C	1,208	C		1,234	C	1,214	C

Table 5.11-8 Intersection Analysis Existing (2017) Base plus Alternative 5B Conditions

#	Intersection Location	Control	Existing (Year 2017) Condition				Existing Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	29.8	C	31.1	C	29.8	C	31.1	C	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	TWSC	20.2	C	28.0	D	20.2	C	28.0	D	No

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	59.0	E	67.8	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	TWSC	33.3	D	65.3	F	33.3	D	65.3	F	No

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Alt 5B Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	58.7	E	67.3	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	TWSC	33.3	D	65.3	F	33.8	D	66.4	F	*No*

5.11.20 Utilities and Service Systems

Alternative 5B would provide another all-weather point of access to reach the river bottom which enhances the ability of emergency first responders to meet a call for service in timely manner. The access road will be designed to meet code requirements for width, grade, and turning radius.[16] Like the project, Alternative 5B would not alter existing public service ratios, response times, or performance standards for fire or police protection, would not require a significant new water supply, and would not induce population growth or demand for new school facilities. The impact would be **less than significant.** No mitigation is required.

5.11.21 Cumulative

Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as cumulative impacts. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (State CEQA Guidelines 15130(a).

Land within the river corridor is primarily designated for flood control and open space related use and most of the bluff and uplands is built out. As shown in Table 4.1-1 found on page 4-2 of the circulated DEIR opportunities for new development are limited to bridge improvements, river enhancement and related restoration activities.

The previously circulated DEIR concluded that with implementation of best management practices (BMPs) and application of proposed mitigation measures (e.g., for biological resources and aesthetic and visual resources), all potentially significant environmental impacts of the project would be avoided or reduced to less-than-significant levels (circulated DEIR chapter 3). Therefore, the proposed Project would not have an incremental effect that is cumulatively considerable when viewed in conjunction with other projects causing related impacts in the study area (circulated DEIR, chapter 4).

Under Alternative 5B, the trail alignment complies with policies requiring setbacks from natural resources established by the River Parkway Master Plan but would conflict with the City of Fresno Bluff Protection Ordinance that limits landform alteration along the river bluff. This conflict would be site specific in nature as no other cumulative projects are proposed on or adjacent to the river bluff. Further, all impacts can be reduced to less than significant with incorporation of BMPs and application of mitigation measures. The incremental impact of Alternative 5B would not be cumulatively considerable.

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[16] According to Section 403.2, “Fire Department Access,” the road must be an approved all weather surface, capable of supporting an 80,000 pound vehicle, have a grade of 10% (10H:1V) or less, and have 24 feet of unobstructed width. Lanes that are one way shall be 15 feet in width.

5.11.22 Environmental Justice Considerations

As discussed in Revised Chapter 4, section 4.2, the proposed project causes no significant adverse environmental impacts and does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities. Alternative 5B proposes an additional parking lot accessed at Palm and Nees Avenues, which results in slightly more potential environmental impacts than the proposed Project. For air quality, construction-related and operational emissions are slightly higher than the proposed Project, but these impacts remain less than significant with no mitigation required. This alternative also results in additional short-term temporary increases ambient noise levels due the additional construction required for the added roadway, parking lot, and facilities, but this impact is reduced to less than significant levels with Mitigation Measure Noise-1. Overall, based on the environmental impacts analysis for Alternative 5B, this alternative does not have the potential to result in a disproportionately high and adverse environmental effect on disadvantaged communities.

In terms of socioeconomic effects, this alternative has the potential to increase access to the proposed Project for all residents of Fresno, including from disadvantaged communities. As discussed in Revised Chapter 4, section 4.2, access to the project from disadvantaged communities would most likely occur by private vehicle because transit options are limited and most disadvantaged communities in Fresno are not within walking or bicycle distance of the proposed Project. The proposed entrance at Perrin Avenue is near a currently used informal vehicular access point at the gate of the existing Lewis S. Eaton Trail, which this project extends down-river to the west. While the proposed Project does improve vehicular access to the River Parkway trail system with the addition of this proposed 50 space parking lot, that access point from the Fresno side requires travel north along SR 41 to Children's Boulevard, then travel south along Blackstone Avenue, the SR 41 East Frontage Road. Adding another vehicular access point at Palm and Nees Avenues, as proposed for Alternative 5B, could improve public access to the project for disadvantaged communities by providing a more convenient access point utilizing surface roadways near the project. Not requiring the additional travel up SR 41 may help reduce barriers to access for disadvantaged communities in Fresno, including those in central, southeast and west Fresno, and help ensure the benefits of the project, in terms of equitable access to parks and greenspaces, is shared equitably within the community.

5.12 Comparison of Alternatives to the Project

- *The following text replaces Section 5.12 on page 5-92 through 5-105 of the circulated DEIR.*

  State CEQA Guidelines Section 15126.6 mandates that the EIR must include a comparative evaluation of a proposed project against a range of reasonable alternatives, which would feasibly attain most of the basic project objectives while avoiding or lessening the significant project effects. As stated in Section 15126.6(f)(1) of the State CEQA Guidelines:

> [A]mong the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

Although these factors do not present a strict limit on the scope of reasonable alternatives to be considered, they help establish the context against which "the rule of reason" is measured when determining an appropriate range of alternatives sufficient to establish and foster meaningful public participation and informed decision-making.

Table 5.12-1 compares the results of the CEQA analysis for each resource category, and identifies alternatives that would result in unavoidable significant impacts. A summary of the resources with significant impacts that can be mitigated to less than significant or unavoidable significant impacts is provided. This comparison provides the means to consider, in conformance with Section 15126.6 of the State CEQA Guidelines, factors affecting the feasibility of the alternatives, whether any of the alternatives would mitigate, avoid, or substantially lessen environmental impacts associated with the project.

5.12.1 Mitigated Significant Impacts

For the proposed project and Alternatives 1–5B, impacts on the following resource categories would be significant but would be reduced to less than significant with mitigation measures: aesthetics and visual resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise. Alternative 1, would also result in a traffic impact that can be mitigated through incorporation of a traffic signal. Alternatives 3 and 4 could be found to be inconsistent with policies of the River Parkway Master plan that require setbacks from natural resources in the river and construction of parking lots to support visitor activities. Alternative 5B could be considered inconsistent with policies of the City protecting the River Bluff.

Table 5.12-1 Comparison of Environmental Impacts of the Project with Impacts of the Alternatives

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
Meets Project Objectives?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Is Land Owned by State of California/San Joaquin River Conservancy?	Yes	Yes	Yes	Yes	Yes	No, land or easement must be acquired by willing seller	No, land or easement must be acquired by willing seller	Yes
	Aesthetics and Visual Resources							
Impact 3.2-1: Scenic Vista	Less than Significant with Mitigation Incorporated	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.2-2: Scenic Resources	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.2-3: Visual Character	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.3-4: Light and Glare	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
	Agriculture and Forestry Resources							
Impact 3.3-1: Conversion of Prime Farmland, etc.	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.3-2: Conflict with Agricultural Zoning, Williamson Act	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.3-3: Forestland Zoning	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.3-4: Conversion of Forestland	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.3-5: Conversion of Agriculture and Forestland to Nonagricultural Use	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Air Quality							
Impact 3.4-1: Conflict with Air Quality Plans	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.4-2: Air Quality Violation	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.4-3: Cumulative Increase of Criteria Pollutants	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.4-4: Exposure to Sensitive Receptors	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
Impact 3.4-5: Objectionable Odors	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
	Biological Resources							
Impact 3.5-1: Special-Status Species	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.5-2: Riparian Habitat, Natural Communities	Less than Significant	LTS	LTS	LTS with MM	LTS	LTS	LTS	No Impact
Impact 3.5-3: Federally Protected Wetlands	Less than Significant	LTS	LTS	LTS with MM	LTS	LTS	LTS	No Impact
Impact 3.5-4: Wildlife Corridors	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.5-5: Policies and Ordinances	No Impact	No Impact	No Impact	SU	No Impact	No Impact	LTS with MM	No Impact
Impact 3.5-6: Conservation Plans	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Cultural Resources							
Impact 3.6-1: Historical Resources	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.6-2: Archaeological Resources	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.6-3: Paleontological Resources	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.6-4: Human Remains	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
	Geology and Soils							
Impact 3.7-1: Exposure to Earthquake Fault	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.7-2: Soil Erosion	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.7-3: Unstable Geologic Unit or Soil	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS with MM	No Impact
Impact 3.7-4: Expansive Soils	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.7-5: Soil Incapable of Wastewater Disposal	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
	Greenhouse Gas Emissions							
Impact 3.8-1: Greenhouse Gas Emissions	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
Impact 3.8-2: Conflicts with Greenhouse Gas Reduction Plans	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
	Hazardous Materials							
Impact 3.9-1: Transport of Hazardous Materials	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.9-2: Emission of Hazardous Materials	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.9-3: Hazardous Materials Site	Less than Significant	LTS	LTS	LTS	LTS	LTS with MM	LTS with MM	No Impact
Impact 3.9-4: Airport Land Use Plan Conflict	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.9-5: Hazard due to Private Airstrip	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.9-6: Conflict with Emergency Response Plan	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.9-7: Exposure to Wildland Fire	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
	Hydrology and Water Quality							
Impact 3.10-1: Water Quality Standards	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with additional MM	LTS with MM	LTS with additional MM	LTS with additional MM	No Impact
Impact 3.10-2: Groundwater Supply	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.10-3: Drainage Patterns Affecting Erosion	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.10-4: Drainage Patterns Affecting Flooding	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.10-5: Exceedance of Drainage Capacity	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.10-6: Other Degradation of Water Quality	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.10-7: Housing within 100-Year Floodplain	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.10-8: Structures within 100-Year Floodplain	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	S LTS with MM	No Impact
Impact 3.10-9: Failure of Dam or Levee	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.10-10: Seiche, Tsunami, Mudflow	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
	Land Use and Planning							
Impact 3.11-1: Physical Division of Established Community	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.11-2: Conflict with Land Use Policy	Less than Significant	LTS	LTS	SU	LTS	LTS	LTS	No Impact
Impact 3.11-3: Conflict with Habitat Conservation Plan	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Mineral Resources							
Impact 3.12-1: Loss of Mineral Resource	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.12-2: Loss of Locally Important Mineral Resource Recovery Site	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Noise							
Impact 3.13-1: Noise Levels Exceeding Standards	Less than Significant with Mitigation Incorporated	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	LTS with MM	No Impact
Impact 3.13-2: Exposure to Groundborne Vibration or Noise	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.13-3: Permanent Increase in Ambient Noise Levels	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.13-4: Temporary Increase in Ambient Noise Levels	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.13-5: Noise Exposure within Airport Land Use Plan	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.13-6: Noise Exposure within Private Airstrip Vicinity	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Population and Housing							
Impact 3.14-1: Inducement of Substantial Population Growth	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.14-2: Displacement of Existing Housing	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
Impact 3.14-3: Displacement of Substantial Numbers of People	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Public Services							
Impact 3.15-1: Impacts from Construction of Government Facilities	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Recreation							
Impact 3.16-1: Neighborhood and Regional Parks	Less than Significant	LTS	LTS	LTS	LTS with additional MM	LTS	LTS	No Impact
Impact 3.16-2: Adverse Physical Impact of Recreation Facilities	Less than Significant	LTS	LTS	LTS	SU	LTS	LTS	No Impact
	Transportation							
Impact 3.17-1: Conflict with Traffic Plan or Policy	Less than Significant	SU	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.17-2: Conflict with Congestion Management Program	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.17-3: Change in Air Traffic Pattern	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.17-4: Increased Design Standards	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.17-5: Inadequate Emergency Access	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.17-6: Conflict with Public Transit, Bicycle, Pedestrian Plan	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	Utilities and Service Systems							
Impact 3.18-1: Exceedance of Wastewater Treatment Requirements	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.18-2: New Water or Wastewater Treatment	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.18-3: New or Expanded Water Drainage Facilities	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 3.18-4: Insufficient Water Supply	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact

	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 5B	No Project
Impact 3.18-5: Exceedance of Wastewater Treatment Capacity	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.18-6: Insufficient Landfill Capacity	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Impact 3.18-7: Noncompliance with Solid Waste Regulations	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Cumulative Impacts	Less than Significant	LTS	LTS	SU	SU	LTS	LTS	No Impact
Impact 4.3-1: Growth Inducing	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Impact 4.3-2: Energy	Less than Significant	LTS	LTS	LTS	LTS	LTS	LTS	No Impact
Environmental Justice – Access to Parkway	Provides benefits by increasing access to parks and greenspaces but access may be limited by providing only one vehicular access to one location at Perrin Avenue that requires travel up SR 41.	Likely to reduce barriers to access by creating additional convenient vehicular access point from surface street at West Riverview Drive	Same as proposed project	Same as proposed project	Same as proposed project	Likely to reduce barriers to access by providing additional convenient vehicular access point from surface street at Palm and Nees	Likely to reduce barriers to access by providing additional convenient vehicular access point from surface street at Palm and Nees	Does not provide benefits or improve access to benefits of the Parkway.

LTS=Less than Significant

LTS with MM= Less than Significant with Mitigation Measures

SU=Significant and Unavoidable

5.12.2 Alternatives with Additional Mitigation Measures

Impacts on biological resources and hydrology and water quality in Alternative 3 would be reduced to less than significant, but with additional mitigation measures compared to the proposed Project. Recreation impacts under Alternative 4 would require additional mitigation measures compared to the proposed Project. Under Alternatives 5 and 5B, impacts associated with hazards and hazardous materials, hydrology and water quality, and land use would also require additional mitigation measures compared to the proposed Project.

5.12.3 Alternatives with Unavoidable Significant Impacts

Under CEQA, a project would result in unavoidable significant environmental effects if the impacts of the project (both construction-related and operational impacts) would be significant and no feasible mitigation is available or only partial mitigation is feasible. Significant and unavoidable impacts are presented in Table 5.13-1. Alternative 1 would result in a significant and unavoidable impact under Transportation. Alternative 3 would result in a conflict with Parkway Master Plan policies that are intended to protect the River riparian corridor. Alternative 4 would result in a conflict with Parkway Master Plan policy directed at the provision of parking to support visitor activities.

5.12.4 Alternatives Not Meeting Project Objectives

The No Project Alternative would not extend the existing Lewis S. Eaton Trail downstream along the San Joaquin River on public open space lands, nor would it provide recreation amenities. This alternative fails to meet the basic objectives of the proposed project as described in Section 1.4 of this EIR by denying linkage to the existing multiuse trail, and preventing access and use of a public open space, and recreation amenities to the residents of Fresno.

5.13 Comparison of Alternatives

- *The following is added to the circulated DEIR.*

  The broad objective of the Conservancy is to conserve habitat, provide public access to the River, and provide low-impact public recreation, linking all public recreational areas between SR 99 and Friant Dam with a continuous, multipurpose trail on land along the River; to create a low-impact recreation system with a variety of recreational opportunities; and to connect the multipurpose trail with other local and regional trails. Specifically, the objective of the proposed project is to extend the existing Lewis S. Eaton Trail from its current southern terminus near Woodward Park for about 2.4 miles downstream along the San Joaquin River across State-owned land and provide recreational amenities consistent with the policies of the Parkway Master Plan.

Alternative 1 results in a significant and unavoidable impact to Transportation and is not consistent with policies of the City of Fresno General Plan. Alternatives 3, 5, and 5B require additional mitigation measures to reduce impacts to less than significant. Alternative 3 also conflicts with the Parkway Master Plan policies related to protecting the River riparian corridor while Alternative 5B conflicts with policies of the City of Fresno Bluff Protection Ordinance. Therefore, these alternatives would not be environmentally superior compared to the proposed project. Alternative 4, the No Parking Alternative, minimizes the potential impacts by eliminating the parking area, at the expense of consistency with policies of the River Parkway Master Plan that encourage parking to support visitor activity. Each is described in greater detail below.

5.13.1 No Project

The No Project Alternative fails to meet the objectives of the proposed project as described in Section 1.4 of this EIR by denying linkage to the existing Lewis S. Eaton Trail, and preventing access and use of a planned public park, open space, and recreation amenities to the residents of Fresno. None of the impacts identified for the proposed Project would occur under the No Project Alternative.

5.13.2 Alternative 1

Alternative 1, “Added Parking,” was developed to provide convenient vehicle access for residents of the Fresno metropolitan area, including increasing opportunities for equal access for disadvantaged communities, and to increase parking capacity for visitors to the trail.

This alternative found significant impacts to transportation that could be mitigated with a traffic signal or traffic roundabout at the intersection of Audubon Avenue and Del Mar Avenue. But as this mitigation measure requires approval and action by the City of Fresno and the Conservancy cannot guarantee that these improvements will be implemented since they are controlled by another agency. Therefore, this impact would be significant and unavoidable. If the Conservancy wanted to adopt this alternative, it would have to adopt a statement of overriding considerations in accordance with CEQA Guidelines section 15093 unless the improvements are timed to coincide with installation of the intersection improvements.

In terms of access to the Parkway for disadvantaged communities, this alternative is likely to help reduce barriers to access by creating an additional convenient vehicular access point from surface street at West Riverview Drive that does not require travel north on SR 41, which is what visitors would be required to do with the single access point at Perrin Avenue.

5.13.3 Alternative 2

Alternative 2, the Bluff Trail Alignment, was developed to reduce the circuitous proposed trail alignment and reduce potential impacts on riparian habitat and disturbance to nearby residences on the floodplain.

The multiuse trail specifications, the Perrin Avenue parking lot, and associated recreation amenities described for the proposed project would be provided. This alternative does not improve limited access to the River for disadvantaged communities compared to the proposed project and results in impacts similar to those of the proposed Project.

5.13.4 Alternative 3

Alternative 3, the River's Edge Trail Alignment, was developed to provide multiuse trail access close to the River and to possibly reduce the potential effects of wildland fires on residences located on the Bluffs. It includes the project elements described in for the proposed project, with the deviation being that this trail extension alignment lays nearer to and along the bank of the River. This alternative requires additional mitigation measures beyond those of the proposed Project and this trail alignment conflicts with policies of the Parkway Master Plan that require a minimum width of 200 feet on both sides of the River as wildlife movement corridors. A buffer of 150 feet is to be established between riparian habitat and the planned multipurpose trail.

5.13.5 Alternative 4

Alternative 4, the No Parking Alternative, was developed to address the potential impacts of parking near the River. The trail alignment and recreational amenities described for the proposed project would be constructed. However, no public vehicle parking would be provided on the project site. This alternative does not improve access to the River for disadvantaged communities compared to the proposed project, and conflicts with policies of the Parkway Master Plan that encourage construction of parking to enhance visitor access. Impacts would be similar to those of the proposed Project.

5.13.6 Alternative 5

Alternative 5, the Palm and Nees Access, was developed to provide more convenient vehicle access for residents of the Fresno metropolitan area, including disadvantaged communities. This alternative is likely to help reduce barriers to access by creating an additional convenient vehicular access point from surface streets at West Riverview Drive that does not require travel up the SR 41, which is what visitors would be required to do with the single access point at Perrin Avenue. This alternative requires the acquisition of private land from willing sellers and on mutually agreeable terms, and requires additional mitigation to address the potential for exposure to hazardous materials.

5.13.7 Alternative 5B

Alternative 5B was developed to provide convenient access for residents of the Fresno metropolitan area. This alternative requires additional mitigation measures beyond those identified for the proposed Project to address inconsistency with the City of Fresno Bluff Protection Ordinance, and address the potential exposure to hazardous materials, a. Moreover, this alternative requires the acquisition of private land from willing sellers and on mutually agreeable terms and acquisition of land or easements from the FMFCD.

6. References

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7. Preparers

This section identifies all individuals, firms, and agencies involved in preparing the DEIR, by contract or other authorization.

7.1 San Joaquin River Conservancy

Melinda Marks, Executive Director

7.2 AECOM

David Young, Project Manager

Ken Koch, Technical Lead

Chris Hargreaves, Landscape Design

Noel Casil, PE, TE, PTOE, Traffic

Caitlin Miller, Air Quality/Greenhouse Gas Emissions

Frank Gegunde, PG, Hazards and Hazardous Materials, Environmental Site Assessment

Rachel Avila, Biological Resources

Julie Nichols, Senior Technical Editor

Beth Duffey, Senior Technical Editor

Deborah Jew, Document Specialist

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Appendix AA
Notice of Availability

SAN JOAQUIN RIVER CONSERVANCY
STATE OF CALIFORNIA

5469 E. Olive Avenue
Fresno, California 93727
Telephone (559) 253-7324
Fax (559) 456-3194
www.sjrc.ca.gov

TO: Agencies, Organizations, and Interested Parties

FROM: Melinda Marks, Executive Officer
San Joaquin River Conservancy

SUBJECT: Notice of Availability of a Partially Revised Draft Environmental Impact Report for the San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project

NOTICE IS HEREBY GIVEN, pursuant to Public Resources Code Sections 21091 and 21092, and California Environmental Quality Act Guidelines (State CEQA Guidelines) Sections 15087, and 15105, that a Partially Revised Draft Environmental Impact Report (DEIR) for the San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project (proposed project), State Clearinghouse No. 2014061017, is available for public review from August 17, 2017, through October 2, 2017.

PROJECT TITLE: San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project

PROJECT LOCATION: The study area is located along the San Joaquin River between State Route (SR) 41 and Spano Park within the city limits of Fresno. The boundary extends from the San Joaquin River south to the bluffs and westward from SR 41 to Spano Park, near the intersection of Palm Avenue and Nees Avenue. The project area is sited within Sections 21, 28, and 29 of Township 12S, Range 20E, Mount Diablo Baseline and Meridian, Fresno North 7.5-minute series, U.S. Geological Survey topographic quadrangle.

PROJECT DESCRIPTION: The proposed project plans to extend the existing Lewis S. Eaton Trail by constructing a multipurpose trail extension approximately 2.4 miles, from the Perrin Avenue alignment near SR 41 on the east to Spano Park on the west. The trail would be about 22 feet wide, with a 12-foot-wide paved surface, a parallel 8-foot-wide hard natural surface for equestrian use, and a 2-foot shoulder (opposite the natural surface area) and generally would proceed from SR 41 to a point below the Spano Park overlook.

A parking lot (Perrin Avenue parking lot) for 50 vehicles with a controlled vehicle entrance would be constructed adjacent to SR 41. Vehicular access to the parking lot would be at the Perrin Avenue undercrossing of SR 41. A gate and unmanned parking pay station would be included to manage vehicle access.

Pedestrian and bicycle access would be provided at four locations: Perrin Avenue, Spano Park, and the West Riverview Drive and Churchill Avenue entrances to the Bluff Trail. An emergency/service gate would provide access to the trail extension for emergency first responders and maintenance staff.

The trail extension would be landscaped at intervals with native vegetation for habitat enhancement, visual screening, and shade. Picnic areas, tables, benches, public safety and information signs, and wildlife observation areas would be provided along the trail extension at various locations. An Americans with Disabilities Act–accessible vault restroom would be included at the Perrin Avenue parking area and near the toe of Spano Park. Portions of the alternative trail alignments travel across land that was formerly used as a landfill and listed by Gov. Code 65962.5 as a Cortese site.

ANTICIPATED IMPACTS AND PURPOSE OF PARTIALLY REVISED DEIR: The San Joaquin River Conservancy (Conservancy), as Lead Agency, previously circulated a DEIR for a 45-day public review period from February 15, 2017, to April 15, 2017. The DEIR analyzed the proposed project's impacts on all 17 environmental topic areas: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation and Traffic, and Utilities and Service Systems. The DEIR analysis determined that with implementation of best management practices and application of proposed mitigation measures (e.g., for Aesthetics and for Biological Resources), all potentially significant environmental impacts of the proposed project would be avoided or reduced to less-than-significant levels.

The EIR also analyzed a no project alternative and 5 action alternatives, and discussed proposed mitigation measures to minimize, offset, reduce, or avoid significant environmental impacts. The Conservancy has determined that various sections of the DEIR for the San Joaquin River Conservancy River West Fresno, Eaton Trail Extension Project (State Clearinghouse No. 2014061017) should be revised and recirculated to analyze a new public access alternative, Alternative 5B, and to revise other portions of the EIR to address issues raised in comments received during the public review of the original DEIR.

Consistent with the procedures in CEQA Guidelines section 15088.5, the following sections and chapters from the circulated DEIR have been revised in the Partially Revised DEIR:

- Section 3.11, "Land Use and Planning"
- Section 3.17, "Transportation"
- Section 4.2, "Environmental Justice—Disadvantaged Communities"
- Chapter 5, "Alternatives"

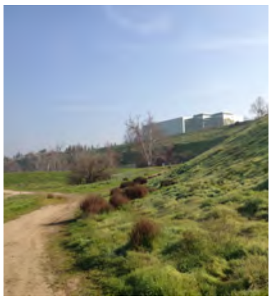
AVAILABLITY OF ENVIRONMENTAL DOCUMENTATION: This Notice of Availability, the Partially Revised DEIR, and all other documents referenced in the DEIR are available for public review at the Conservancy website, www.sjrc.ca.gov, from August 17, 2017, through October 2, 2017. A printed copy of the Partially Revised DEIR may also be viewed at the San Joaquin River Conservancy, 5469 E. Olive Avenue, Fresno, CA 93727, during regular business hours from 8:00 a.m. to 5:00 p.m. An electronic copy of the Partially Revised DEIR on CD may be requested from the Conservancy by calling (559) 253-7324.

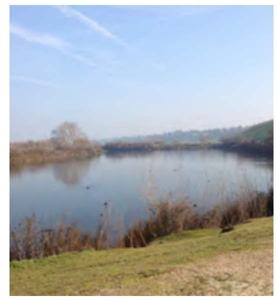
COMMENTS: Pursuant to State CEQA Guidelines Section 15087, responsible and trustee agencies and other interested parties, including members of the public, must submit any comments on the Partially Revised DEIR in response to this notice no later than October 2, 2017. Please send written comments by first-class mail to Melinda Marks, Executive Officer, San Joaquin River

Conservancy, 5469 E Olive Ave., Fresno, CA 93727, or via electronic mail to Melinda.Marks@sjrc.ca.gov with the subject line "Partially Revised Circulated DEIR" **Comments must be postmarked or emailed by October 2, 2017.**

Consistent with CEQA Guidelines section 15088.5(f)(2), the Conservancy requests that reviewers limit their comments to the revised text provided in the Partially Revised DEIR. The Conservancy will prepare a Final EIR that will address comments previously received on the original DEIR as well as new comments submitted on the Partially Revised DEIR.

Appendix BB
Blair, Church & Flynn Technical Report





August 3, 2017

City of Fresno, California • Department of Public Works

Palm Bluffs River Access Schematic Design Report

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City of Fresno, California • Department of Public Works

Palm Bluffs River Access Schematic Design Report

August 3, 2017

Prepared for:

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City of Fresno, California
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CHAPTER 1
INTRODUCTION

1.1 Project Background

The Palm Bluffs River Access Schematic Design (project) presents additional information regarding an access alternative for a proposed public recreation facility that was initially identified as “Site 1 (Route 2)” in the “Palm Bluffs River Access Feasibility Study” prepared for the City of Fresno and dated May 2015. This route was evaluated in the San Joaquin River Conservancy’s River West Fresno, Eaton Trail Extension Draft Environmental Impact Report (DEIR), and is referred to in that evaluation as “Route 5b.” The design presented in this report may be incorporated into the DEIR as a new alternative access, Alternative 5B. The location of the project is shown on the map in Figure 1.1 and is identified as “Project Location.”

The project would provide for a controlled entrance; an access roadway for vehicles, bicyclists, and emergency response; a sidewalk for pedestrians; a staircase for pedestrians with a channel for bicycle portage; a 40-space, paved and landscaped parking area; a vault toilet restroom; connection to the proposed multi-use trail extension; and unpaved, fenced trails to the river. The access roadway would include two 12-foot travel lanes and a 6-foot wide sidewalk from the existing North Palm Avenue cul-de-sac, near the top of the riverside bluff, to a proposed parking lot near the river and below the riverside bluff. The proposed public vehicle entrance would traverse an area currently developed as a City of Fresno Park, Spano Park. Design features are included to reconfigure the park, its landscaping and irrigation system.

The alignment of the access roadway and site of other improvements are shown on the Site Map included with this report as Appendix A. It is expected that the configuration of the Alternative 5B, if it is incorporated in the DEIR, would generally conform to any findings and recommendations provided by this schematic design report.

Much of the surrounding land has now been developed as Palm Bluffs, Park Place, and River Bluff developments and to a considerable extent contains buried landfill materials that remain in place. Special compaction efforts were employed as part of those developments, and some new buildings in the area reportedly contain gas detection facilities to monitor for the presence of landfill gasses. Some of the land within the proposed project area contains similar landfill materials.

A portion of the area that could be affected by the access facilities is privately owned by the Spano Enterprises and various partners. Other lands affected by the project are owned by the City of Fresno, Fresno Metropolitan Flood Control District (FMFCD), and State of California, under the jurisdiction of the San Joaquin River Conservancy.

1.2 Purpose

The purpose of this report is to: document the information gathered and utilized from the topographic survey results, geotechnical investigation, and coordination with the affected property owners; present findings and recommendations related to project feasibility; submit schematic design drawings; and to provide recommendations for future detailed design.

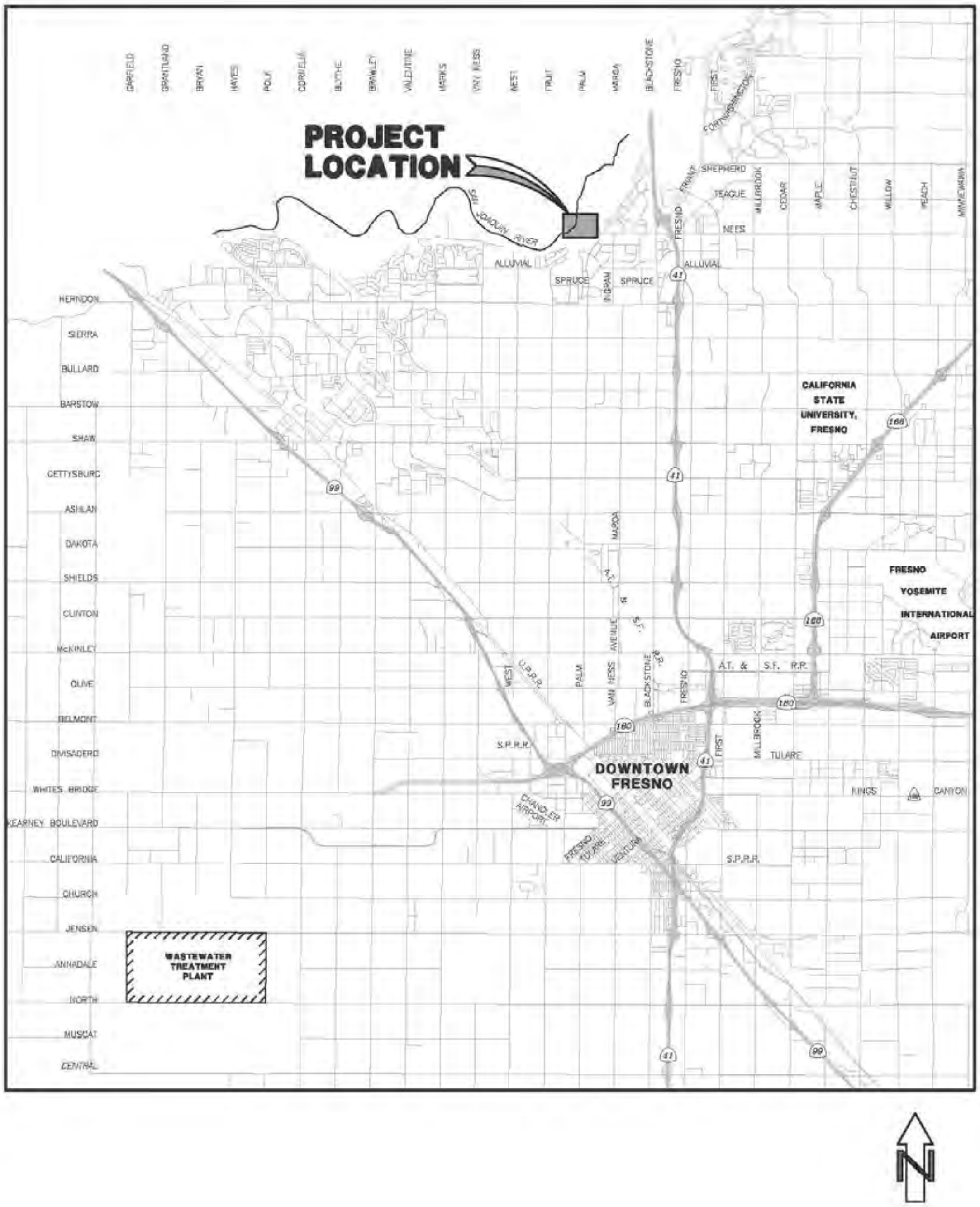


Figure 1.1 Location Map

CHAPTER 2
SCHEMATIC DESIGN PHASE PLANS

2.1 General

Included in Appendix B of this report are reduced scale Schematic Design Phase Plans. The Schematic Design Phase Plans represent a level of design completion of approximately 30% and include the horizontal geometry, limited vertical geometry, and the existing and proposed utilities.

2.2 Topography

The topography shown on the Schematic Design Phase Plans was obtained from field surveys conducted by Blair, Church & Flynn. The surveys were completed on July 3, 2017.

2.3 Easements and Property Lines

The existing property lines are shown on Sheet 2 – Plan and Profile Sheet Index Map of the schematic drawings. The property line locations are approximate and were obtained from City of Fresno GIS data. The land owner name and Assessor's Parcel Number (APN) for parcels within the proposed project area are shown on the same map.

There is an existing 15-foot FMFCD easement over the existing storm drain system that crosses Spano Park. The easement boundaries are shown on Sheet 4 – Plan and Profile and were obtained from a set of as-built provided by FMFCD.

There is an existing City of Fresno ingress-egress easement over the FMFCD baffled apron structure located on the southeast corner of FMFCD's Basin DH2 site.

2.4 Existing Utilities

Letters were sent to various utility owners and agencies to determine all existing utilities within the project limits. Several responses have been received, and of the responses received, some do not provide enough detail to accurately map the utilities. Additional contact with the utility owners is being made as required. A summary of the utility responses received from the utility owners and agencies as of the date of this report is shown in Table 2.1. Known utilities are shown on the reduced scale Schematic Design Phase Plans. Comcast, the County of Fresno, Qwest Communications and Time Warner Telecom are the utility companies and agencies that have not provided utility information. A follow-up letter would be sent to these utility companies and agencies in order to refine the design.

Table 2.1 Existing Utility Information

Utility Owner	Response Received?	Utilities in Area?
AC Square (Comcast)	N	—
AT&T California	Y	Y
AT&T Transmission	Y	N
CVIN	Y	N
City of Fresno	Y	Y
Comcast	N	—
County of Fresno	N	—
Fresno Irrigation District	Y	N
FMFCD	Y	Y
Level 3 Communications	Y	Y
MCI Network Services	Y	N
PG&E	Y	Y
Ponderosa Telephone	Y	N
Qwest Communications	N	—
Sebastian Corporation	Y	N
Sprint	Y	N
Time Warner Telecom	N	—

CHAPTER 3
EXISTING CONDITIONS & DESIGN REQUIREMENTS

3.1 100 Year Flood Limits

The federal 100-year flood limits were obtained using digital Flood Insurance Rate Maps (FIRMs) for Fresno and Madera Counties, which are available through the Federal Emergency Management Agency (FEMA). Any improvement within the 100-year flood zone is susceptible to inundation by a rain event that has a 1% probability of occurring each year. The base flood elevation changes within the project boundary from an elevation of approximately 265.5 feet to 265.8 feet from west to east respectively using the NGVD 29 datum. Base flood elevations shown in the FIRMs were changed from the NAVD 88 datum to the NGVD 29 datum because it is primarily used by the City of Fresno. All FIRMs associated with the project are available in Appendix C of this report.

3.2 Limits of Waste and Site Description

The project site is known to be within areas used in the past for waste disposal. Wastes from various sources were disposed over many years in the bluff area. In the floodplain, construction and demolition wastes were disposed.

3.2.1 Landfill Wastes

A review was conducted of all of the landfill documents acquired from the Fresno County Department of Public Health (FCDPH). All landfill limit figures that were available were approximate in nature, leaving the precise landfill limits unclear. With the combination of report figures and help from FCDPH personnel, the approximate limits of waste are shown by blue dashed lines on the site map located in Appendix A. As reported in the Geotechnical Memo, landfill materials were encountered in a boring in this area, Boring B-1, at various depths below existing ground surface (EGS).

3.2.2 Construction and Demolition Waste

According to the “Site Reconnaissance” report prepared by Twining in 2002, the location of the proposed parking lot is considered a landfill composed of construction and demolition (C&D) waste. The approximate limits of the C&D waste are identified on the Site Map by magenta dashed lines. This site is also referred to as Spano Landfill.

Per the Environmental Protection Agency website, C&D waste materials consist of the debris generated during the construction, renovation, and demolition of buildings, roads, and bridges that often contain bulky, heavy materials, such as concrete, wood, metals, glass, and salvaged building components.

3.3 Emergency Vehicle Access

In order to provide emergency access to the site, the Fresno Fire Department Development Policies must be followed. According to Section 403.2, “Fire Department Access,” the access road must be an approved all weather surface, capable of supporting an 80,000 pound vehicle, have a grade of 10% (10H:1V) or less, and have 24 feet of unobstructed width. Lanes that are one way shall be 15 feet in width.

A vehicle turnaround would be necessary for emergency vehicles within the parking lot. Requirements for a turnaround include a 44 foot centerline turning radius and a 20 feet clear driving width.

CHAPTER 4
PROPOSED IMPROVEMENTS

4.1 General

Included in Appendix B of this report are reduced scale Schematic Design Drawings. The Schematic Design Drawings represent a level of design completion of approximately 30% and include the horizontal geometry, limited vertical geometry, and the existing and proposed utilities. The drawings also include retaining wall and embankment concepts, and a parking lot with security lighting and self-contained vault toilet restroom facilities.

4.2 Street Design

The proposed two-lane access road would begin from the existing North Palm Avenue cul-de-sac and go through the west side of Spano Park before proceeding across the bluff face downgradient toward the river bottom. The access road would be constructed with a 10% maximum gradient across the bluff face. The proposed road would then wrap around the FMFCD stormwater detention basin and end at the proposed parking lot.

4.2.1 Street Cross Section

4.2.1.1 General

The access road is considered a future local roadway and according to Figure MT-1, "Major Street Circulation Diagram," of the City's 2014 General Plan, the alignment of future local streets are typically not specified by the General Plan Circulation Diagram. The proposed access road geometry generally conforms to City Standard Drawing P-56, "Local Street Cross-Section" with a few modifications. Those modifications include continuous cross slope and sidewalk, curb and gutter on one side only.

4.2.1.2 Design Speed

According to the State of California Department of Motor Vehicles, the design speed for open space areas and parks is 25 mph. A 5 mph design speed combined with an overall 49.4 foot long fire truck was used for this design to meet the typical fire truck turning radius of 44 feet.

4.2.1.3 Bike Lane and Ramp

The City of Fresno's *Active Transportation Plan* identifies Nees Avenue to the San Joaquin River as hosting a planned Class I Bike Path. The access road would be a roadway shared with vehicles and bicyclists along with the option to utilize a proposed pedestrian stairway. A bicycle ramp is planned to accompany the proposed stairway.

4.3 Emergency Vehicle Access

The emergency vehicle tested was 49.42 feet in length from bumper to bumper with a designed speed of 5 miles per hour. This model was successful with the designed access road shown on the schematic design plans.

4.4 Pedestrians and Bicyclists Access

Pedestrians and bicyclists would have two options to access the river from the top of the bluff. Pedestrians can utilize the 6 foot wide sidewalk alongside the access road or make use of the new stairway with a bike rail that would commence from the top of the bluff and at the northwest corner of Spano Park. Bicyclists would use the access roadway or make use of the stairway.

4.5 Parking Lot with Restrooms

A 40-stall parking lot with solar powered security lights and picnic tables would be constructed at the end of the access road and next to the river. There would be no water service for the parking lot area. For the ADA compliant restroom facility, a prefabricated building would be installed with two self-contained vault toilets and a hand sanitizer station.

4.6 Americans with Disabilities Access

The project would provide public vehicle access from the northern terminus of Palm Avenue to the floodplain parking area. From the parking area where ADA-compliant parking spaces would be provided, ADA-compliant grades would allow for access to the trail extension, picnic tables, and proposed restroom.

4.7 Spano Park

Spano Park would be affected by any improvements proposed to go through the park. Currently, the park area is approximately 1.13 acres. With the proposed access road, several existing amenities such as picnic tables, sidewalk and water fountain would need to be removed and relocated. With the implementation of the proposed improvements, the new park area would be approximately 0.89 acres.

CHAPTER 5
UTILITY IMPROVEMENTS

5.1 Storm Drain

5.1.1 General

There are existing FMFCD master-planned storm drain facilities within the project limits in the area above the top of bluff. New pipelines and drain inlets to provide drainage for the entrance would be constructed. For the roadway and features below the top of slope, on-site drainage must be provided. Additionally, there is an existing single box culvert and concrete headwall associated with the detention basin that must be extended or otherwise modified.

5.1.2 Existing Inlet at North Palm Avenue Cul-De-Sac

There is an existing double type "D" inlet at the north end of the existing North Palm Avenue cul-de-sac, west of the Spano Park drive approach. There is an existing 24-inch storm drain pipe that connects the inlet to an existing Type "A" manhole north of the inlet.

The inlet conflicts with proposed improvements and it is recommended, and this schematic design assumes, that the inlet, pipeline and manhole be relocated further east, and that the curb and gutter be reconstructed to accommodate the new location of the inlet.

5.1.3 Existing Inlets North of Spano Park Drive Approach and West of the Access Road

There are two existing type "E" inlets in Spano Park, north of the Spano Park drive approach and west of the proposed access road. There is an existing 12-inch PVC pipe that connects both inlets to an existing Type "A" manhole northeast of the inlets.

The inlets and pipe conflict with the proposed improvements and it is recommended, and this schematic design assumes, that the inlets and pipeline be relocated further northeast and connected to the relocated Type "A" manhole.

5.1.4 Existing Inlet North of Spano Park Drive Approach and East of the Access Road

There is an existing type "E" inlet in Spano Park, north of the Spano Park drive approach and east of the proposed access road. There is an existing 12-inch PVC pipe that connects the inlet to an existing Type "A" manhole northwest of the inlet.

The existing inlet conflicts with the proposed improvements and it is recommended, and this schematic design assumes, that the inlet and pipeline be relocated further northeast and connected to the relocated Type "A" manhole.

5.1.5 Proposed Inlet near Existing Box Culvert

A non-master planned inlet and storm drain pipe is proposed at the toe of the bluff and next to the existing apron channel. The acceptance of a non-master planned drainage is subject to the approval of FMFCD. The inlet and storm drain pipe is shown on the schematic plans.

5.1.6 Proposed Extension of Existing Box Culvert

There is an existing chain link fence and 6 foot by 6 foot reinforced concrete box culvert that is located near the southeast corner of FMFCD's basin.

The existing facilities are in conflict with the proposed access road and it is recommended, and this schematic design assumes, that the box culvert be extended further north to provide sufficient space for the access road and sidewalk.

5.1.7 Proposed Inlet and Settling Swale North of Basin

A drainage inlet and vegetative swale with berms is proposed to collect runoff from the parking lot and northern segment of the access roadway. The swale is proposed to route around the parking lot before daylighting into the river. The purpose of the berm is to allow any collected sediments to settle in the swale before the storm water releases into the river. The inlet and vegetative swale are shown on the schematic plans.

CHAPTER 6
LANDSCAPE AND IRRIGATION IMPROVEMENTS

6.1 Landscape Planting

6.1.1 Spano Park

The existing trees and turf within the project limits would be removed. New trees conforming to the City's Street Tree Master Plan would be installed and new turf would be established as necessary.

6.1.2 Bluff Area and Parking Lot

Some of the existing trees at the toe of the bluff are within the project limits and would be removed, including several mature western sycamores. For every native tree that is removed, native trees would be replanted at ratios established in the environmental review documentation for the project. New trees and shrubs would be installed along the access road, along the toe of the bluff, and around the parking lot. In addition, for long-term control of erosion, a Caltrans-approved hydroseed mix would be applied to any disturbed areas.

6.2 Irrigation System

6.2.1 Spano Park

The existing irrigation system that is disturbed by the proposed access road would be relocated and re-established as necessary to recreate the remaining park area.

6.2.2 Bluff Area and Parking Lot

There is an existing irrigation system near the proposed parking lot. It is assumed that any new irrigation facilities would be able to connect to the existing irrigation system to provide irrigation for any new trees and shrubs planted within the bluff and parking lot area. If tying into the existing irrigation system is not feasible, then a new well and pump is proposed to provide irrigation for any new vegetation that is planted within the bluff and parking lot area.

CHAPTER 7
GEOTECHNICAL ENGINEERING INVESTIGATION

7.1 General

A geotechnical design memorandum (Geotechnical Memo) was performed for the project by RMA GeoScience, as a subconsultant to the City of Fresno. A copy of the Geotechnical Memo is included in Appendix D for reference. Geotechnical borings were performed at 5 locations. See Figure 2, Boring Location Map in the Geotechnical Memo.

7.2 Pavement Structural Section Design

7.2.1 General

The Geotechnical Memo recommends the pavement structural section should be designed in accordance with the design methodology in the Caltrans Highway Design Manual. Design parameters include the R-value of the soil and the traffic index. The Geotechnical Memo includes various pavement structural sections for various traffic indices.

7.2.2 Traffic Index

North of Nees Avenue, Palm Avenue is considered a local street. The traffic index typically used for design should be 5.0 in conformance with Standard Drawing P-50, “Street Construction Requirements and Traffic Indices.” Recommendations for design traffic indices for 5.5 and 6.0 are also included in this report.

7.2.3 Measured R-Values

A sub-grade resistance value (R-value) was obtained for this report. The R-value and the boring identification number tested are shown in Table 7.1. See Figure 2 Boring Location Map in Appendix D for a location map of the test boring.

Table 7.1 Measured R-values

Test Boring ID	R-value
B-1	53

7.2.4 Design R-values

The recommended R-value for this project is 40.

7.2.5 Pavement Structural Section

There are possible pavement structural sections for each design traffic index shown in Table 7.2. Three different structural sections are shown: one using 2.5 inches of asphalt concrete over 5.0 inches of Class 2 aggregate base, one using 3.0 inches of asphalt concrete over 5.5 inches of Class 2 aggregate base, and one that is using 3.0 inches of asphalt concrete over 6.5 inches of Class 2 aggregate base. For construction cost saving purposes, the actual structural section that would be used on the project is expected to be for a design traffic index of 5.0.

To complete final design, it is recommended that a meeting be held with the Design Engineer and the City to determine the appropriate pavement structural section(s) to be used on the project.

Table 7.2 Pavement Structural Sections by Design Traffic Index

Design TI	Asphalt Concrete over Aggregate Base	
	AC Thickness (in)	AB Thickness (in)
5.0	2.5	5.0
5.5	3.0	5.5
6.0	3.0	6.5

7.3 Retaining Wall Design

7.3.1 General

The elevation change is approximately 62 vertical feet on the existing bluff slope on the north side of Spano Park; there are a few options for constructing the access road, including one or more retaining walls. The retaining wall should be designed per the recommendations provided in the Geotechnical Memo to resist the following lateral active earth pressures. Design parameters include surface side slope, lateral active earth pressures, and footing widths.

7.3.2 Lateral Active Earth Pressure and Surface Side Slope

The retaining wall should be designed to resist the following lateral active earth pressures with the recommended surface side slope as shown in Table 7.3.

Table 7.3 Recommended Surface Side

Equivalent Fluid Weight (pcf)	Surface Side Slope (H:V)
38	Level
41	5:1
42	4:1
45	3:1
58	2:1

7.3.3 Footing Width

The footings for retaining walls are recommended to be embedded at least 24 inches into firm native soils or engineered fill and have a minimum width of 24 inches.

CHAPTER 8
ENVIRONMENTAL DOCUMENTS

8.1 General

In addition to the possible incorporation in the DEIR to meet California Environmental Quality Act requirements, there are permits and environmental documentation that must be considered to develop this alternative.

8.2 §1600 Lake or Streambed Alteration Agreement (LSAA)

According to the California Department of Fish and Wildlife (DFW), an entity must notify the agency prior to work that may substantially divert or obstruct the natural flow of any river, substantially change or use any material from any river, deposit materials that could pass into any river, or adversely affect existing fish or wildlife resources.

It is recommended that completed plans for this project be submitted to the DFW for review and potential recommendations to reduce impacts to the fish and/or wildlife habitat.

8.3 Army Corps Wetland Delineation Survey

Section 404 of the Clean Water Act gives the Army Corps of Engineers jurisdiction over discharges of fill to Waters of the U.S., including projects that impact wetlands. If a site or access road is found to be within wetlands, building within the wetlands may result in mitigation at a to-be-determined ratio through buying mitigation bank credits, building wetland habitat, or restoring wetland habitat at another location.

A wetland delineation study should be conducted to determine if the proposed alternative is within wetland areas. Typical surveys investigate the site for hydric soils, hydrophytic vegetation, and examine the site hydrology. A wetland delineation study should be prepared in coordination with the final plans.

8.4 Army Corps §404 Nationwide Permit

For construction activities where minimal environmental effects are planned in the waters of the United States, a §404 Nationwide Permit would be required. The Army Corps of Engineers issues Nationwide Permits and the Army Corps of Engineers would review the project prior to the applicant acquiring the permit.

8.5 Clean Water Act §401 Permit

Prior to construction or operation of facilities at the project site, which may result in any discharge into the navigable waters, a Clean Water Act §401 permit from the Army Corps of Engineers is required. The permit cannot be submitted until CEQA is completed. After the completion of the CEQA documentation, a 401 Water Quality Certification application would be submitted and reviewed by the State Water Resources Control Board.

8.6 Central Valley Flood Protection Board Encroachment Permit

An encroachment permit application is required to be submitted to the Central Valley Flood Protection Board if a project is located within 300 feet of a designated floodway. The project is located within 300 feet of the floodway and an encroachment permit application would be submitted to the Central Valley Flood Protection Board.

8.7 City of Fresno Permit to Build within a Flood Plain

There are some areas of the project in the federal 100-year flood plain. The City of Fresno Flood Plain Administrator must review the site plans and ensure that it complies with all City ordinances.

According to City of Fresno ordinance 11-616(g), the Flood Plain Administrator must determine that the following requirement is met for construction below the base flood elevation:

> “The volume of space occupied by the proposed fill or structure below the base flood elevation is compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation. All such excavations shall be constructed to drain freely to the watercourse.”

This ordinance prohibits a net increase of soil in any location below the base flood elevation by means of importing fill. It is possible to alter the base flood elevation limits by transferring soil below the base flood elevation and submitting a Letter of Map Revision to FEMA once the ground is proven to be above flood levels. The City of Fresno also requires the finished floor of structures to be six inches above the base flood elevation. The restroom facility is proposed to be one foot above the base flood elevation.

8.8 FEMA Letter of Map Revision (LOMR)

All work for this project is proposed outside the federal “AE” floodway zone but partially within the floodplain boundary. The project includes transferring soil below the base flood elevation and this work would alter the floodplain boundary. A Letter of Map Revision must be prepared and submitted to the Federal Emergency Management Agency to update the Flood Insurance Rate Map. The floodway channel is identified on the Site Map available in Appendix A.

8.9 Landfill Regulation

The area on the flood plain proposed to be developed into a parking area is known to contain construction and demolition waste, referred to herein as the Spano Landfill. The Fresno County Department of Public Health is the regulatory agency for the area affected by past waste disposal. Any change in use, such as the proposed project, would be subject to the County’s review and approval. Limited borings conducted for the Geotechnical Memo found materials consistent with demolition wastes. This schematic design does not include any specific measures or construction methods to remediate wastes, should any cleanup or remediation be required by the County. Future subsurface investigations and refinements in the design could possibly assist in further avoidance of areas containing wastes.

CHAPTER 9
FMFCD COORDINATION

9.1 General

The access road to the parking lot area is proposed to go through Spano Park, then along the existing bluff slope on the north side of Spano Park and wrap around FMFCD's Basin DH2 site before reaching the parking lot.

For this to be achieved, discussions with FMFCD took place to determine if they had any concerns.

9.2 Fresno Metropolitan Flood Control District

On July 14, 2017, the City of Fresno, FMFCD and Blair, Church & Flynn staff met to discuss the proposed alignment of the access road and improvements and to see if FMFCD had any concerns with the project. At the time of the meeting, FMFCD did not have any significant concerns. From an operations stand point, FMFCD executive staff shared that they would need to confirm with their field team that the proposed improvements would not interfere with operating and maintaining the basin site. Any concerns brought forward from FMFCD would be addressed as part of subsequent design efforts.

CHAPTER 10
FINDINGS AND RECOMMENDATIONS

10.1 Findings

This report was designed to further evaluate the access alternative that is identified as "Site 1 (Route 2)" in the "Palm Bluffs River Access Feasibility Study," also known as "Alternative 5b" in the Draft EIR that was prepared by the San Joaquin River Conservancy. This proposed access roadway includes two 12-foot travel lanes and a 6-foot sidewalk commencing from the existing North Palm Avenue cul-de-sac. The access road to the parking lot is proposed to go through Spano Park, along the existing bluff slope and around FMFCD's detention basin before reaching the parking lot. For Site 1 (Route 2), also known as "Alternative 5b," a list of factors to be addressed were determined and a list of options were produced to overcome these, as explained in the following.

10.1.1 Factors

The following list summarizes the challenges to constructing an access road to the San Joaquin River from the Nees and Palm Avenues Intersection:

- Land Use;
- Bluff Slope;
- Emergency Vehicle Access;
- 100-Year Flood Plain;
    - No Net Soil Importation;
- FMFCD Box Culvert; and
- Post Closure Landfill Plan for Spano Landfill.

10.1.2 Access Road Options

In reviewing the list of factors to address, one modification and four options were produced to meet the needs of each factor for constructing the proposed access road. Those options are:

- Reroute Approximately 210 Feet of the Access Road;
- Option 1: Embankments;
- Option 2: Retaining Wall on South Side of Access Road;
- Option 3: Retaining Wall on North Side of Access Road; and
- Option 4: Retaining Wall on North and South Side of Access Road.

10.2 Conclusion

The members of Fresno City Council and City staff recognize the potential of providing an access point to the San Joaquin River for the citizens of Fresno and the surrounding communities, leading to the request for a project feasibility study and a schematic design for access to the river from the Palm Avenue cul-de-sac site. It is important to note that this site does have potential constraints that can be time consuming and costly to address.

On the basis of the findings, it is concluded that there are various access road options that can assist with minimizing the construction cost along with shortening the possible timeline for future completion of the access roadway to the river.

10.3 Recommendations

In order to satisfy the mentioned factors and constraints, along with accommodating access for emergency vehicles, public vehicles, pedestrians and bicyclists, the following recommendations support the design for a future access roadway for the Palm Avenue cul-de-sac site. While several options were produced, the following recommendation assists with meeting the mentioned needs and minimizes the timeline and construction cost for an access road.

The following recommendations are made:

- Re-route Approximately 210 Feet of the Access Road; and
- Option 2: Retaining Wall on South Side of Access Road.

The following elaborates on the recommendations made in this report.

1) Re-route Approximately 210 Feet of the Access Road

The original proposal suggested the initial leg of the access road would be aligned through Assessor's Parcel Number 402-030-70. This parcel is privately owned and according to the 2025 Fresno General Plan this parcel is zoned Commercial Community. Right-of-way would need to be purchased. Also, as reported in the Geotechnical Memo, landfill materials were encountered at Boring B-1 at various depths below existing ground surface (EGS). The soil exploration on Assessor's Parcel Number 402-030-70 encountered debris as early as approximately 5 feet below EGS and to a depth of approximately 32 feet below EGS. Any improvements on this parcel would require development and implementation of a post closure landfill plan. This is an operation that can be very expensive. It is recommended, and the schematic design reflects, re-routing approximately 210 feet of the access road through Spano Park to avoid any improvements on the affected parcel.

2) Option 2: Retaining Wall on South Side of Access Road

To minimize the area needed to construct the access road and minimize disturbance of Spano Park, it is recommended, and the schematic design reflects, constructing a retaining wall along the south side of the road. Though the option without a retaining wall may be more affordable, it would affect more area of the existing Spano Park facilities and the existing access road south of the basin.

CHAPTER 11
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

11.1 General

The Engineer's Opinion of Probable Construction Cost (OPCC) for construction of the Palm Bluffs River Access improvements is shown in Table 11.1. The estimate reflects all work shown on the Schematic Design Drawings, as well as related storm drainage and utility improvements. The estimate does not include the cost of any land purchase, or remediation. The cost does not include an entrance kiosk, picnic amenities, or the costs of an irrigation well or pump.

11.2 Pavement Structural Section

The pavement structural section (PSS) is assumed to be 2.5 inches of asphalt concrete over 5 inches of aggregate base. These numbers are used in the calculations of the weights of asphalt concrete and aggregate base in the OPCC. The PSS would be revised should the design traffic index be modified. At that time the quantities may change, which may cause the related costs to change.

11.3 Roadway and Subgrade Preparation

The quantity of roadway excavation used in the estimate assumes the entire depth of the proposed pavement structural section discussed above would be excavated in order to construct the new roadway. After the profile of the proposed road is developed and grading is finalized for the project, and the pavement structural section is selected, this quantity may change.

Table 11.1 Engineer's Opinion of Probable Construction Cost

Item No.	Description	Quantity	Unit	Unit Cost	Extension
1	Mobilization	lump sum		$150,000	$150,000
2	Mediator	lump sum		$25,000	$25,000
3	Storm Water Pollution Prevention Plan (SWPPP) and Fugitive Dust Control Plan (FDCP) Preparation	lump sum		$5,000	$5,000
4	Storm Water Pollution Prevention	lump sum		$10,000	$10,000
5	Dust Control Pollution Prevention Implementation	lump sum		$8,000	$8,000
6	Worker Protection From Hazardous Materials	lump sum		$20,000	$20,000
7	Clearing and Grubbing	lump sum		$76,000	$76,000
8	FMFCD 6' x 6' Box Culvert Extension	lump sum		$15,000	$15,000
9	Remove and Replace Chain Link Fence	300	ln ft	$31	$9,300
10	Remove Wrought Iron Fence	50	ln ft	$6	$300
11	New Wrought Iron Fence	415	ln ft	$50	$20,750
12	Roadway Excavation and Subgrade Preparation and Site Grading	4,066	cu yd	$17	$69,122
13	Aggregate Base, Class 2	3,882	ton	$15	$58,230
14	Asphalt Concrete (Type A)	2,419	ton	$112	$270,928
15	Concrete Curb and Gutter	2,005	ln ft	$33	$66,165
16	Concrete Drive Approach	510	sq ft	$10	$5,100
17	Concrete Valley Gutter	190	ln ft	$23	$4,370
18	Concrete Sidewalk	15,119	sq ft	$6	$90,714
19	Concrete Island and Restroom Slab	1,120	sq ft	$10	$11,200
20	Gravel Emergency Access Road	215	ton	$15	$3,225
21	New Stairs with Handrails, Bike Rail and Lights	200	ln ft	$550	$110,000
22	18-inch Concrete Pipe (Storm Drain)	375	ln ft	$80	$30,000
23	24-inch RCP (Storm Drain)	78	ln ft	$90	$7,020
24	Existing FMFCD Storm Drain System Relocation	lump sum		$46,000	$46,000
25	FMFCD Basin Improvements (Stand pipe and low pressure manhole)	lump sum		$14,000	$14,000
26	FMFCD Type "D" Inlets	2	ea	$5,000	$10,000
27	24" x 24" Inlet	1	ea	$5,000	$5,000
28	Compacted Slope Fill	18,608	cu yd	$31	$576,848
29	Slope Hydroseeding	5,000	sq yd	$1	$5,000

Item No.	Description	Quantity	Unit	Unit Cost	Extension
30	Retaining Wall	300	ln ft	$413	$123,900
31	Striping and Curb Painting	lump sum		$6,000	$6,000
32	Bioswale	2,080	sq ft	$15	$31,200
33	Guardrail	1,955	ln ft	$250	$488,750
34	Restroom Facility	lump sum		$88,000	$88,000
35	Light Pole	6	ea	$8,000	$48,000
36	Landscaping	lump sum		$15,000	$15,000
37	Landscaping Irrigation	lump sum		$15,000	$15,000
38	Tree Removal Remediation	lump sum		$50,000	$50,000
39	90-Day Maintenance Period (Landscaping and Irrigation)	lump sum		$5,000	$5,000
40	Spano Park Landscape and Irrigation Restoration	1,218	sq ft	$2.00	$2,436
41	Contractor's Pollution Liability Insurance	lump sum		$10,000	$10,000
42	Supplemental Work	lump sum		$100,000	$100,000
43	Misc. Facilities and Operations	lump sum		$405,442	$405,442
				Subtotal Amount:	**$3,111,000**
				Contingencies (approx. 15%):	$466,650
				Total Construction Cost:	**$3,577,650**
1	Engineering & CM Costs	lump sum		$720,000	$720,000
2	Permits and Environmental Documentation	lump sum		$900,000	$900,000
3	Geotechnical Investigation (not including waste assessment)	lump sum		$8,000	$8,000
				Subtotal Amount:	**$1,628,000**
				TOTAL PROJECT COST:	**$5,205,650**

CHAPTER 12
RECOMMENDATIONS FOR FUTURE COMPLETION OF ACCESS ROADWAY DESIGN

12.1 Recommendations

In completing the final design of the access roadway to the parking lot, there are a few recommendations made to assist with meeting this goal.

The following recommendations are:

- Further Geotechnical Investigation; and
- Boundary Survey.

The following elaborates on the recommendations made in this report.

1) Further Geotechnical Investigation

With re-routing the access road through Spano Park, further geotechnical investigation is recommended for the purpose of acquiring detailed data regarding the subsurface conditions of the park, and of the construction and demolition waste site if required by the regulatory agencies.

2) Boundary Survey

As mentioned in Section 2.3, the existing property lines shown on the schematic drawings were obtained from City of Fresno GIS data. It would be appropriate to conduct a boundary survey to display accurately the property lines of each parcels.

CHAPTER 13
REFERENCES

CA DMV. *See* State of California Department of Motor Vehicles.

CalEPA. *See* California Environmental Protection Agency.

Caltrans. *See* California Department of Transportation.

City of Fresno. 2002 (February 1). *2025 Fresno General Plan and Related Draft Environmental Impact Report, No. 10130.* Planning and Development Department, Advance Planning. Fresno, CA.

City of Fresno. 2008 (June). *Fire Prevention Manual Development Requirements.* Section 403.002 Fire Department Access. Fresno, CA.

City of Fresno. 2014 *Fresno General Plan.* Adopted December 18, 2014. Fresno, CA. Prepared by Development and Resource Management Department and Dyett & Bhatia Urban and Regional Planners.

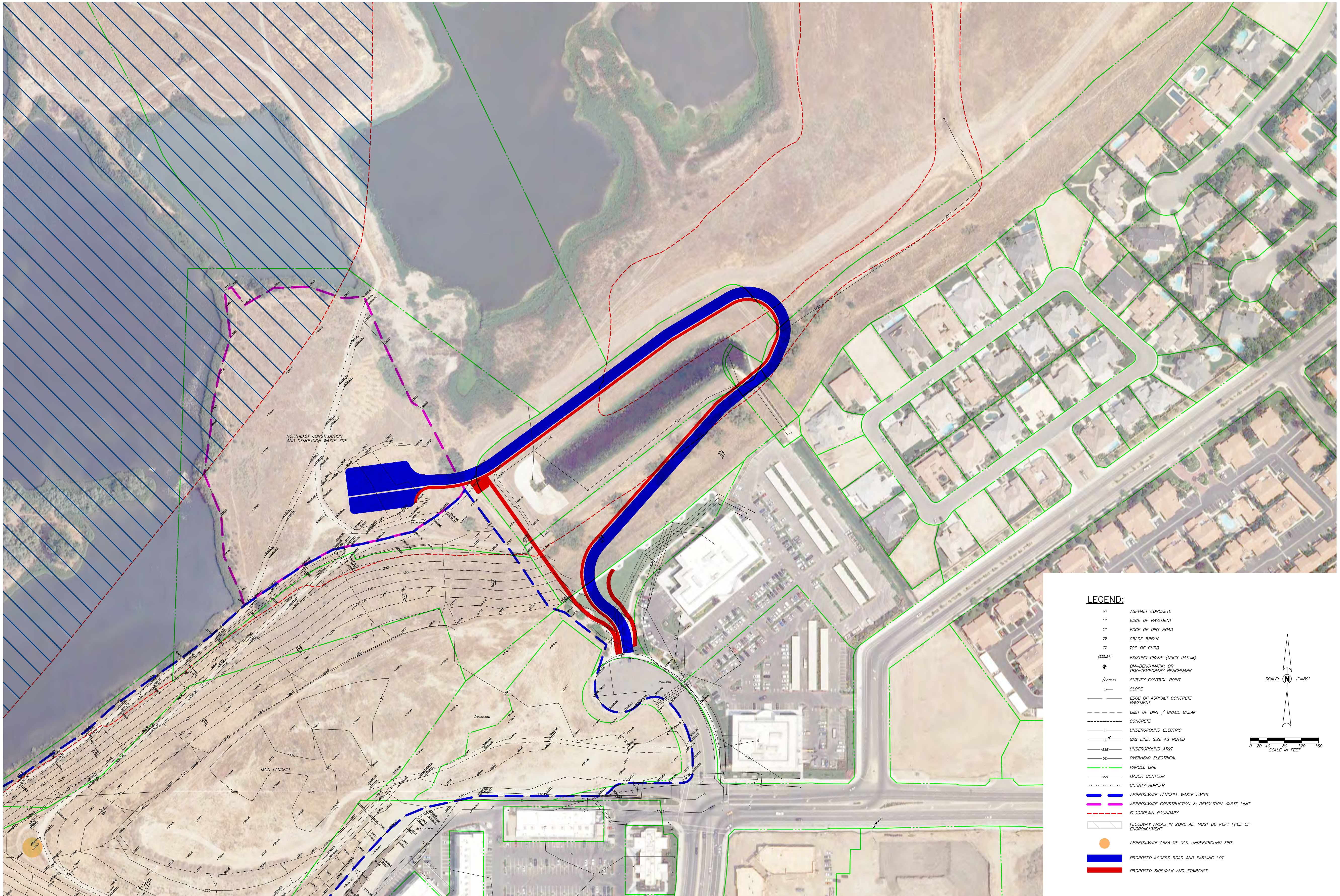
City of Fresno. 2015 (May). *Palm Bluffs River Access Feasibility Study Report.* Fresno, CA. Prepared by Blair, Church & Flynn.

City of Fresno. 2016 (October). *Draft City of Fresno Active Transportation Plan.* Fresno, CA. Prepared by Fehr & Peers.

The Trust for Public Land. 2002 (June 19). *Site Reconnaissance and Soil Assessment Spano River Ranch Property Fresno, California Twining Project No. B32605.01.* San Francisco, CA.

APPENDIX A

Site Map



LEGEND:

AC	ASPHALT CONCRETE
EP	EDGE OF PAVEMENT
ER	EDGE OF DIRT ROAD
GB	GRADE BREAK
TC	TOP OF CURB
(335.21)	EXISTING GRADE (USGS DATUM)
	BM=BENCHMARK; OR TBM=TEMPORARY BENCHMARK
312.55	SURVEY CONTROL POINT
	SLOPE
	EDGE OF ASPHALT CONCRETE PAVEMENT
	LIMIT OF DIRT / GRADE BREAK
	CONCRETE
E	UNDERGROUND ELECTRIC
G 8"	GAS LINE; SIZE AS NOTED
AT&T	UNDERGROUND AT&T
OE	OVERHEAD ELECTRICAL
	PARCEL LINE
350	MAJOR CONTOUR
	COUNTY BORDER
	APPROXIMATE LANDFILL WASTE LIMITS
	APPROXIMATE CONSTRUCTION & DEMOLITION WASTE LIMIT
	FLOODPLAIN BOUNDARY
	FLOODWAY AREAS IN ZONE AE, MUST BE KEPT FREE OF ENCROACHMENT
	APPROXIMATE AREA OF OLD UNDERGROUND FIRE
	PROPOSED ACCESS ROAD AND PARKING LOT
	PROPOSED SIDEWALK AND STAIRCASE

SCALE: N 1"=80'

0 20 40 80 120 160
SCALE IN FEET

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PALM BLUFF RIVER ACCESS
SITE INVESTIGATION AND SURVEY
SITE MAP

DR. BY: JRS
CH. BY: MDG
DATE: 5-20-2015
SCALE AS NOTED

SHEET NO. 1
OF 1 SHEETS

Drawing: P:\214-0332\Site\Exhibits\214332_EX01_Updated.dwg; Layout1 - BCF.ctb
Plot by: jscholz Aug 02, 2017 - 2:30pm

APPENDIX B

Schematic Design Phase Plans

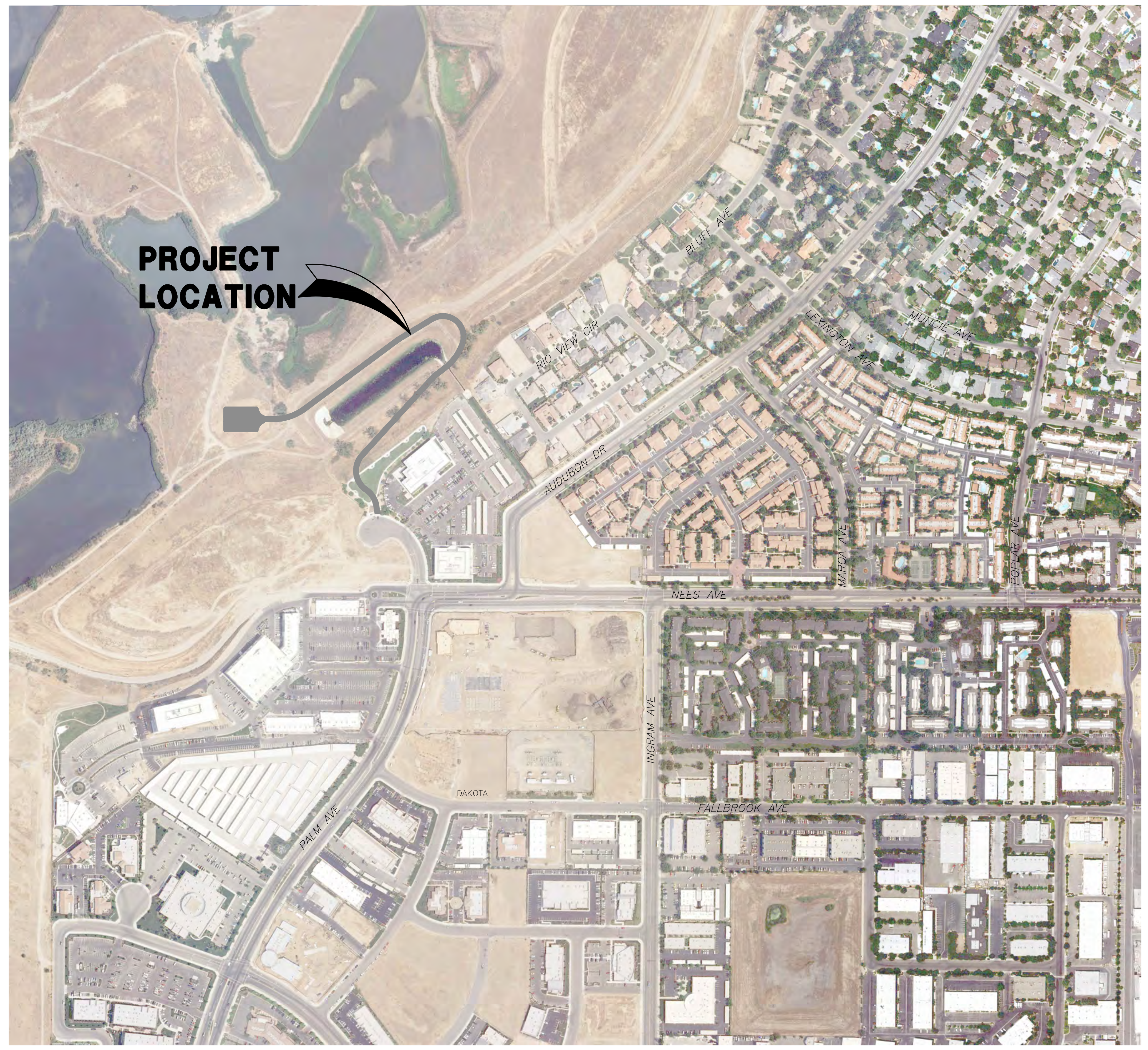
CITY OF FRESNO

DEPARTMENT OF PUBLIC WORKS

PALM BLUFFS RIVER ACCESS

LEGEND AND ABBREVIATIONS

(335.21)	EXISTING ELEVATION
ACE	ASPHALT CONCRETE EDGE
CE	CONCRETE EDGE
C	CONCRETE
EDR	EDGE OF DIRT ROAD
FNCCL	CHAIN LINK FENCE
FNCWI	WROUGHT IRON FENCE
GB	GRADE BREAK
GFL	GUTTER FLOWLINE
LIP	LIP OF GUTTER
SDGR	STORM DRAIN GRATE
SDMG	STORM MANHOLE W/ GRATE
SDML	STORM DRAIN MISC.
STWS	STRIPING WHITE SOLID
TFC	TOP OF CURB
TOB	TOP OF BANK (DITCH / WATER)
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
HW	HEAD WALL
RW	RETAINING WALL
WCR	WHEELCHAIR RAMP
○ BO	BOLLARD
△ 312.55	SURVEY CONTROL POINT
○ 24"STP	IRRIGATION STANDPIPE
Ⓓ	STORM DRAIN MANHOLE
□ SLPB	STREET LIGHT PULLBOX
	TREE; SPREAD SHOWN GRAPHICALLY AND TRUNK DIAMETER AS SHOWN
	WATER BACKFLOW ASSEMBLY
○ DF	WATER DRINKING FOUNTAIN
○ UR	UNIDENTIFIED RISER
□ WVA	WATER VAULT
	CIRCULAR GRATE; ELEVATION AS NOTED
Ⓓ	STORM DRAIN MANHOLE
SD 18"	STORM DRAIN LINE; SIZE AS NOTED
IRR 2"	IRRIGATION LINE; SIZE AS NOTED
	CHAIN LINK FENCE
	LIMITS OF DIRT
	GRADE BREAK LINE
	LIMITS OF CONCRETE
	IRON FENCE
	PROPOSED STORM DRAIN MANHOLE
18" SD	PROPOSED STORM DRAIN, SIZE AS NOTED
	PROPOSED STORM DRAIN INLET
	PROPOSED RETAINING WALL
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	PROPOSED GRAVEL



VICINITY MAP

NOT TO SCALE

N

APPROVALS

CITY OF FRESNO DEPARTMENT OF PUBLIC WORKS	DATE
CITY OF FRESNO DEPARTMENT OF PUBLIC UTILITIES	DATE

BENCHMARK

TBM 4472
CHISELED SQUARE ON CURB, SOUTH SIDE OF NEES,
400' EAST OF PALM
ELEV = 345.195 USGS

TABLE OF CONTENTS

CAUTION
WATCH FOR OVERHEAD POWER LINES

811
Know what's below.
Call before you dig.

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PALM BLUFFS RIVER ACCESS

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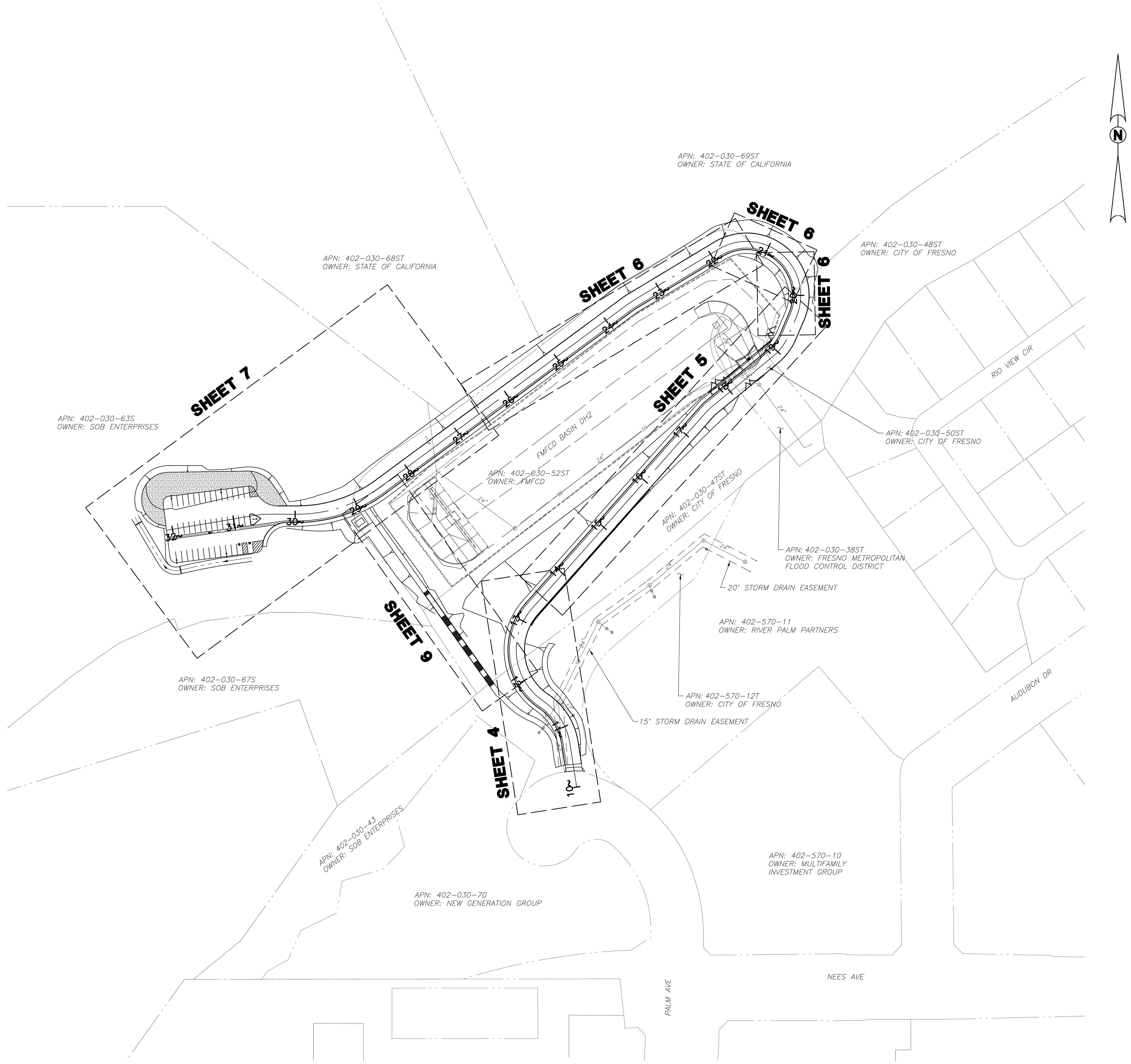
XX-X-XX



PLAN AND PROFILE SHEET INDEX MAP

1" = 100'

LEGEND

- EXISTING PROPERTY LINE
- EXISTING GRADE BREAK
- EXISTING LIMIT OF CONCRETE
- EXISTING STORM DRAIN LINE, SIZE AS NOTED
- EXISTING STORM DRAIN EASEMENT LINE
- PROPOSED ACCESS ROAD CENTERLINE
- EXISTING STORM DRAIN MANHOLE LID
- EXISTING STORM DRAIN GRATE

NOTE

PROPERTY LINES BASED ON CITY OF FRESNO GIS DATA

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PLAN AND PROFILE SHEET INDEX MAP

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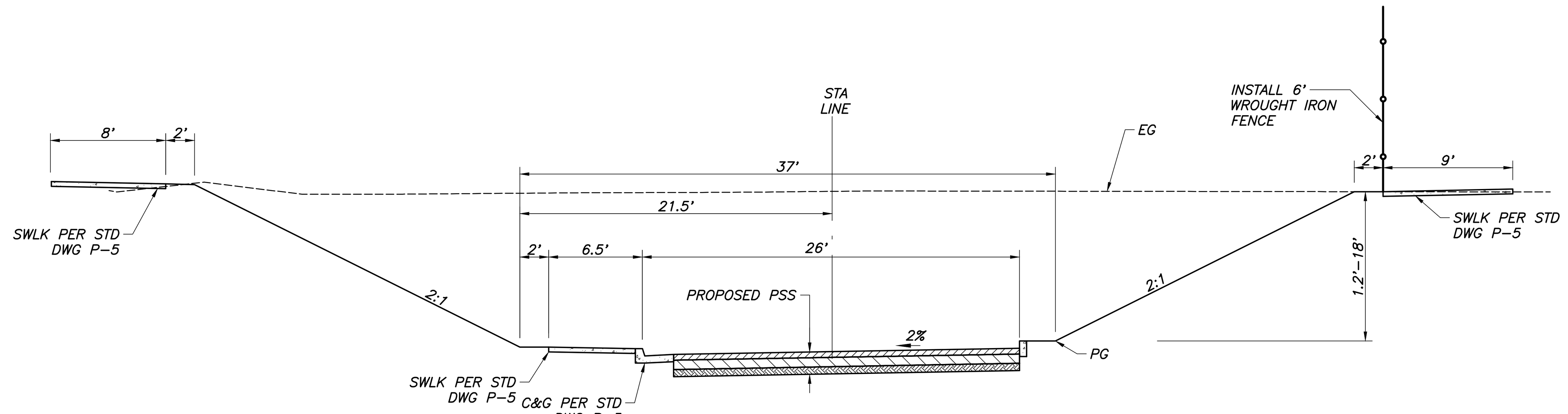

TYPICAL SECTION STA 12+00 TO STA 12+74

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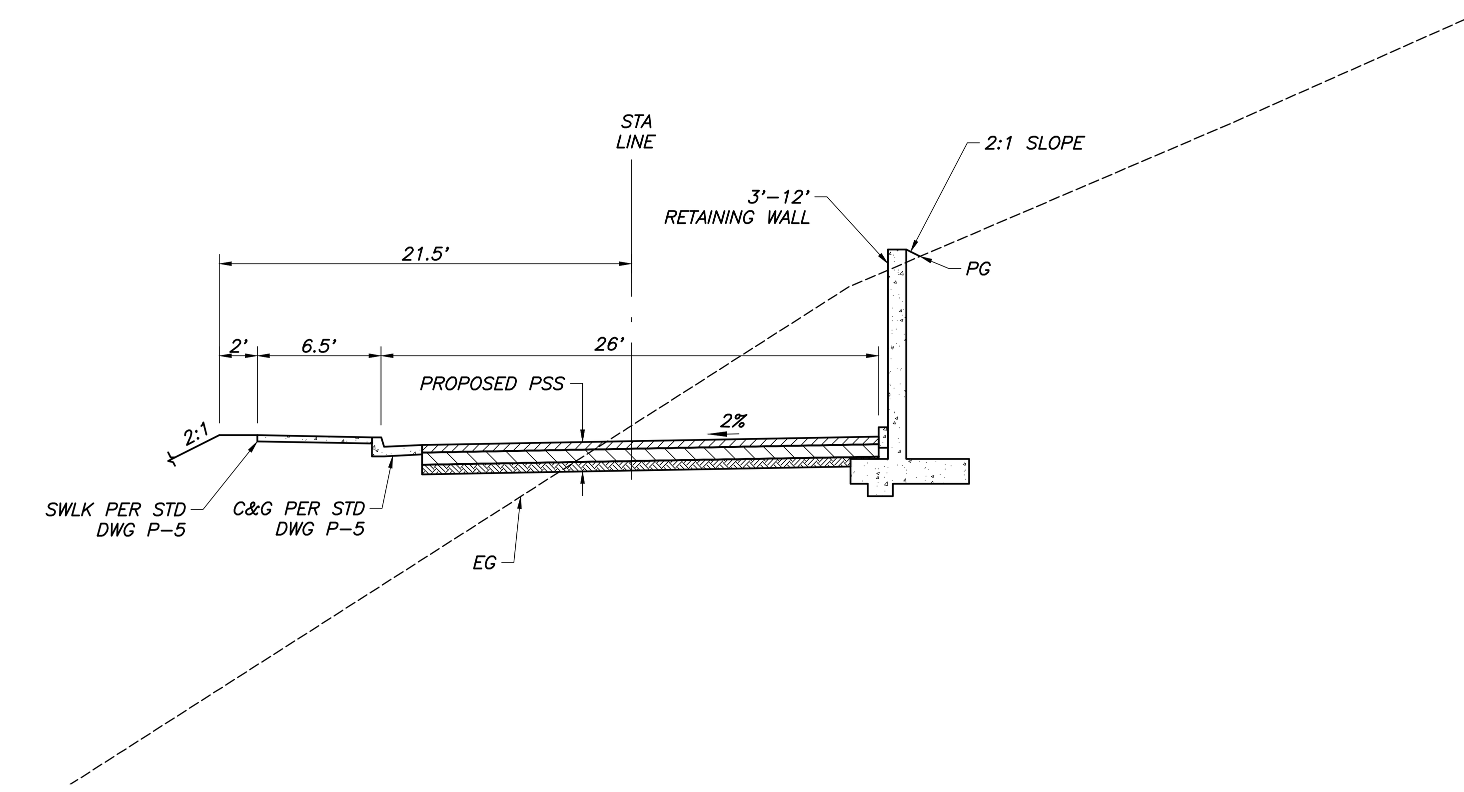
VERTICAL: 1"=8'



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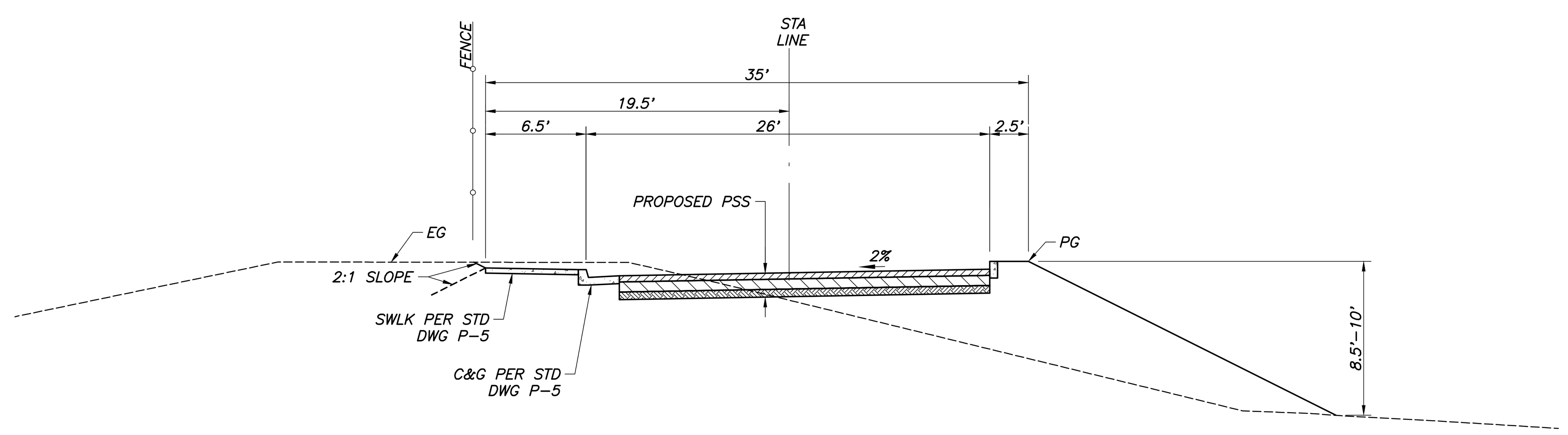

TYPICAL SECTION STA 21+74 TO STA 28+57

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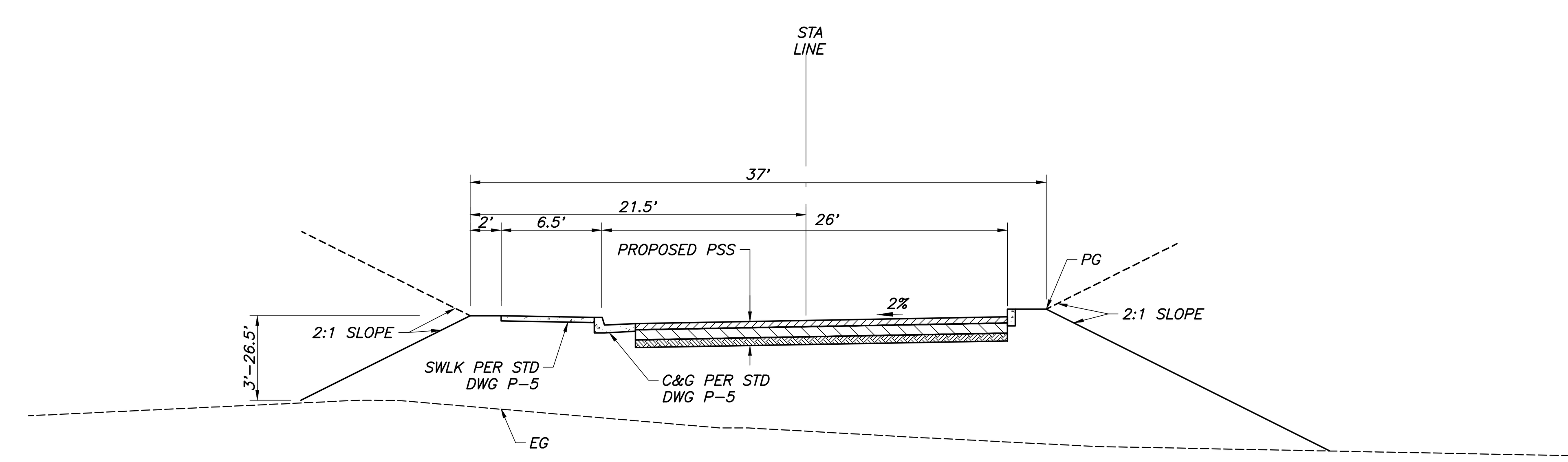

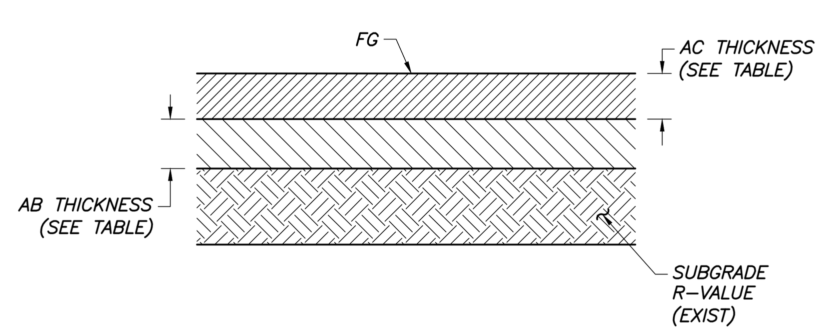

PAVEMENT STRUCTURAL SECTION (PSS) BY DESIGN TRAFFIC INDEX		
DESIGN TRAFFIC INDEX	AC THICKNESS (TYPE A)	AB THICKNESS
5.0 OR LESS	2.5"	5.0"
5.5	3.0"	5.5"
6.0	3.0"	6.5"

TYPICAL SECTION: STA 12+74 TO STA 13+00, STA 16+00 TO STA 21+74, STA 28+57 TO STA 30+20

SCALES: HORIZONTAL: 1"=8'
VERTICAL: 1"=8'

A/3 PAVEMENT STRUCTURAL SECTION (PSS)

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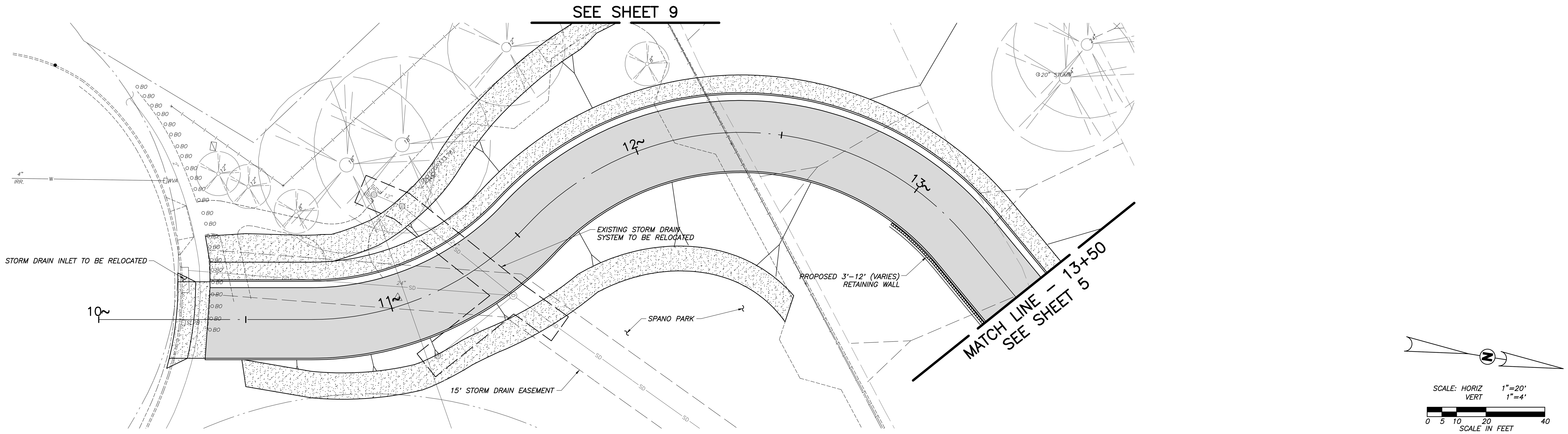

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SEE SHEET 9

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PALM BLUFFS RIVER ACCESS

ACCESS ROADWAY CROSS SECTIONS

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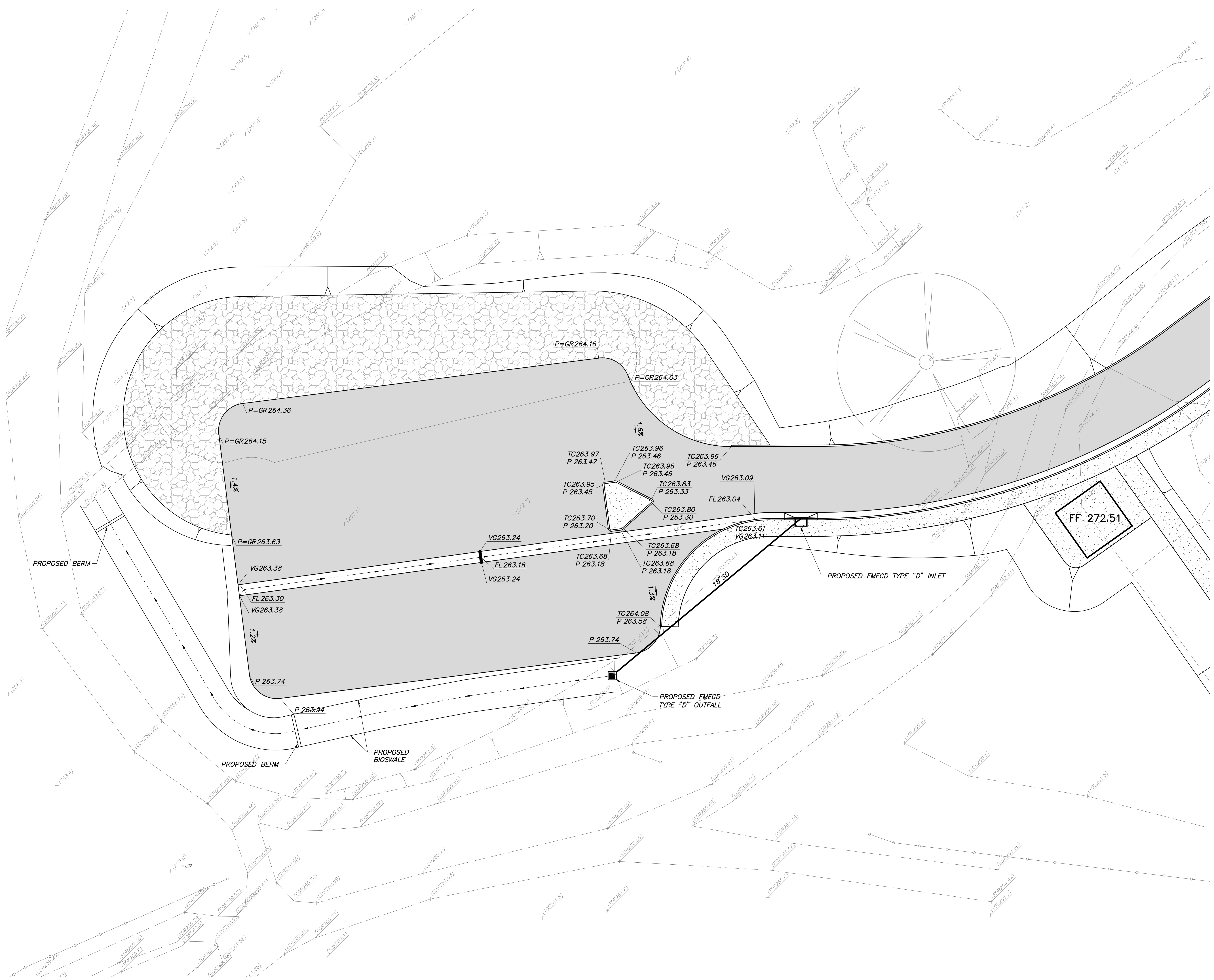

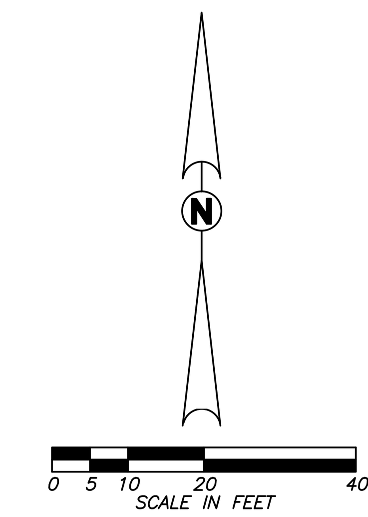

GRADING LEGEND

FF	FINISHED FLOOR
FL	FLOWLINE
GR	GRAVEL
P	PAVEMENT
TC	TOP OF CURB
VG	VALLEY GUTTER

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PALM BLUFFS RIVER ACCESS

PAVING AND GRADING PLAN

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DRAWN BY: JBS
CHECKED BY: JCS
DATE: 7-19-2017
SCALE: AS NOTED
SHEET NO. 10 OF 10 SHEETS
XX-X-XX

BUILDING LOCATION INSTALLATION NOTES:

1. TO PROVIDE PROPER VENTILATION, THE BUILDING IS TO BE ORIENTED WITH THE BLACK VENT SHROUD IN THE BACK FACING SOUTH.
SOLAR HEAT INSIDE THE BLACK VENT SHROUD IMPROVES VENTILATION.

2. SELECT A SITE THAT PROVIDES AN UNOBSTRUCTED AIR FLOW ACROSS THE TOP OF THE 12" VENT PIPE.

3. DO NOT LOCATED BUILDING IN A HOLLOW, BENEATH AN OVER HANG, ON LEE SIDE OF A RIDGE, IMMEDIATELY ADJACENT TO A DENSE TREE LINE, OR IN DENSE BRUSH OR TREES.
NOTE: BOTH BUILDING LOCATION AND ORIENTATION ARE CRITICAL TO PROPER VENTILATION OF BUILDING.

4. SITE SHOULD BE IN A WELL DRAINED AREA THAT CAN BE EXCAVATED TO A DEPTH OF 4'-6" AND GRADED LEVEL 12'-0 x 22'-0.

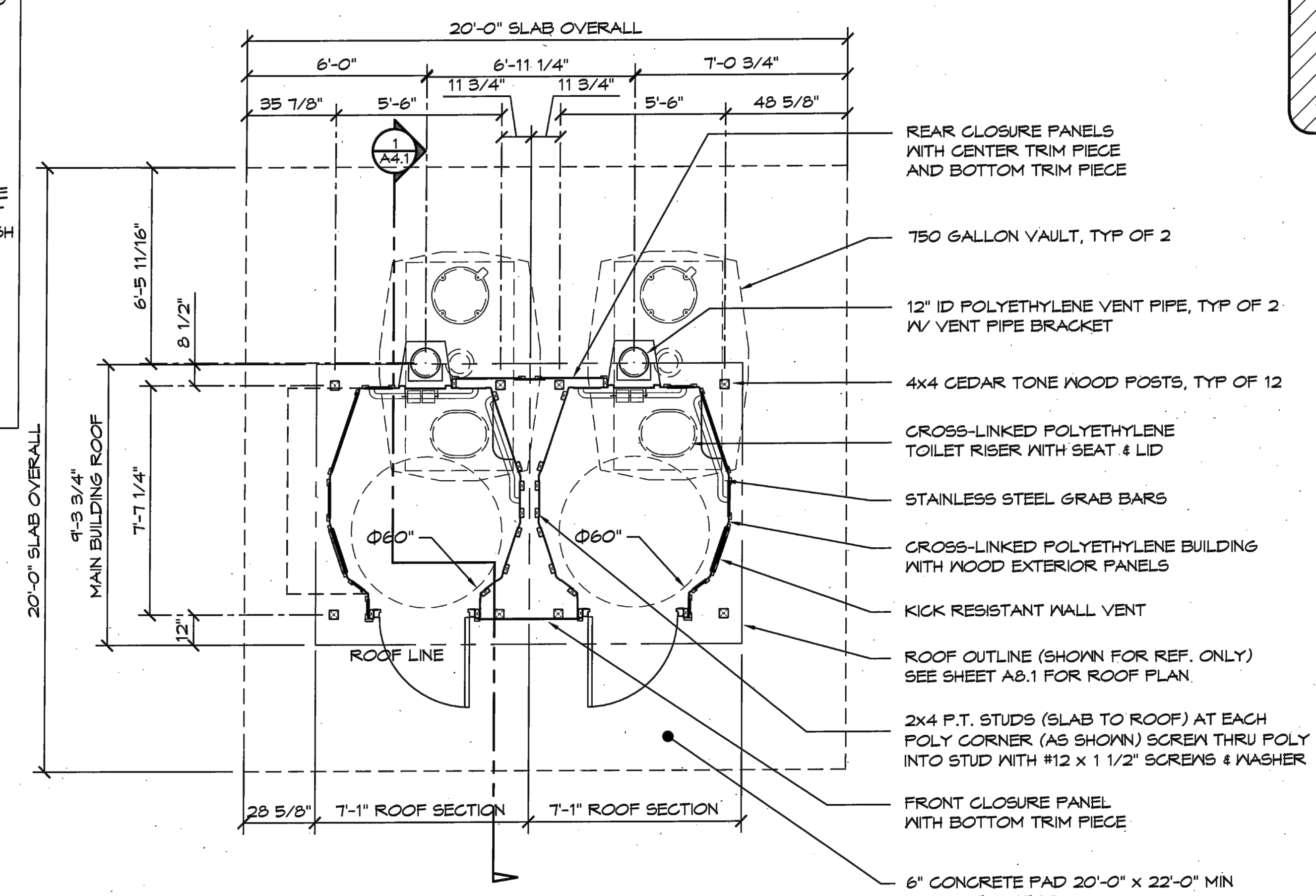
KICK VENT INSTALLATION NOTES:

1. LOCATE VENT ON PREVAILING WIND SIDE OF BUILDING, DO NOT INSTALL THE VENT ON BACK OF BUILDING OR DOOR.

2. TO INSTALL WALL VENT CUT HOLE IN THE WALL THE SIZE OF THE VENT, THEN MOUNT THE VENT IN THE WALL WITH PROVIDED FASTENERS
(6) 1/4"Φ x 1-1/4" BOLTS WITH SPRING NUT.

3. LOUVERS ARE TO BE POINTED DOWN.

4. DO NOT INSTALL ANY OTHER VENTS, THIS WILL DEFEAT THE SPECIFIED VENTILATION SYSTEM.



1 FLOOR PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

FINAL

ROMTEC
18240 NORTH BANK ROAD
ROSEBURG, OR 97470
(541)-496-3541 FAX (541)-496-0803

PROJECT: 1006 TRADITIONAL DBL RR
XXX
XXX
SHEET TITLE: FLOOR PLAN
PLAN SET# XXXXX
DATE: XX/XX/XXXX

REVISIONS

REV.	DATE:	BY

DRAWN BY: XX
SHEET NO. A2.1

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FUND NO.
ORG NO.
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

PALM BLUFFS RIVER ACCESS

DETAILS

APPROVED
CITY. ENG.

DRAWN BY: JRS
CHECKED BY: JCS
DATE: 7-19-2017
SCALE: AS NOTED

SHEET NO. 11 OF 10 SHEETS
XX-X-XX

APPENDIX C

Flood Insurance Rate Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

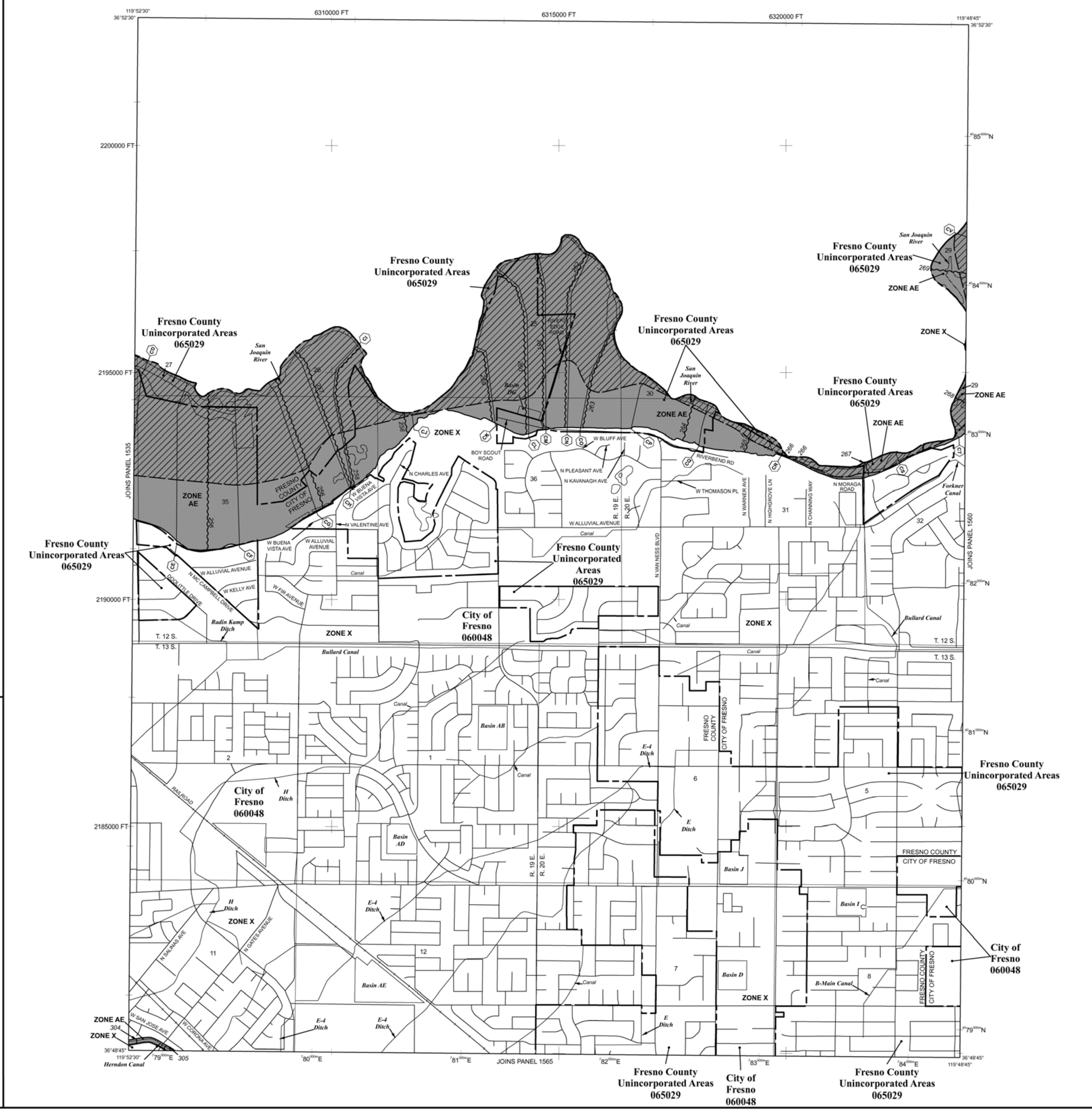
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X 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.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~~~~ 513 ~~~~ Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)——(A) Cross section Line

(23)- - - -(23) Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

$^{24}76^{000m}$N 1000-meter Universal Transverse Mercator grid values, zone 10

600000 FT 5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection

DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)

●M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 30, 2005 - to add base flood elevations, to add special flood hazard areas, to change zone designations, and to reflect updated topographic information.

February 18, 2009 - to update corporate limits, to change base flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

N

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1555H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1555 OF 3525
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	1555	H
FRESNO, CITY OF	060048	1555	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C1555H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency
~~~~

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

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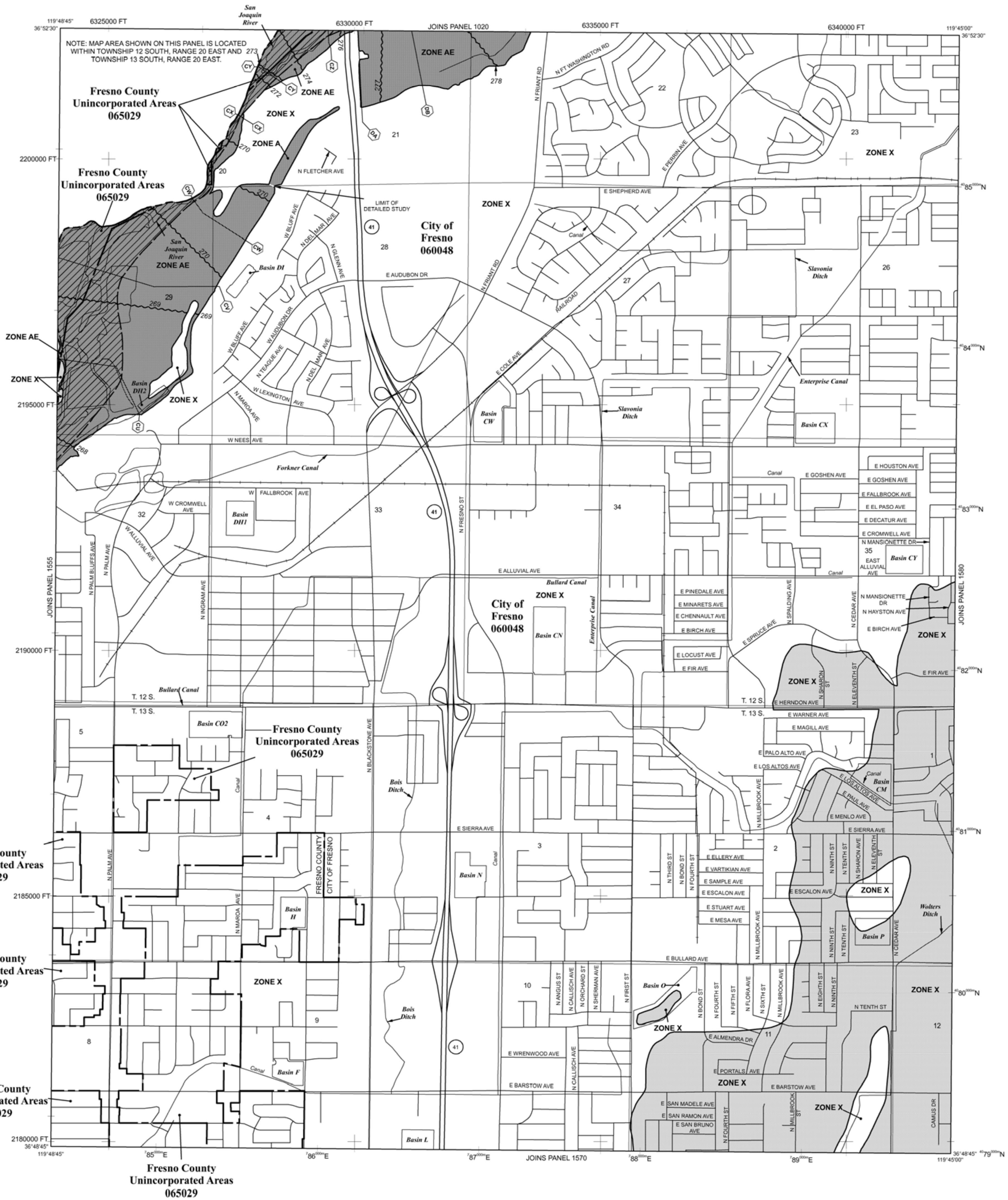
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	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.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section Line
23 - - - 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
$^{24}76^{000m}$N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

N

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1560H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1560 OF 3525
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	1560	H
FRESNO, CITY OF	060048	1560	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C1560H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was California State Plane, Zone III. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the U.S. Geological Survey, 1989 and 1993, California Department of Forestry, 2004, National Geodetic Survey, 2005, and Madera County Road Department, 2007. Additional information was photogrammetrically compiled at a scale of 1:12,000 from U.S. Geological Survey aerial photography dated 1998 to 1999.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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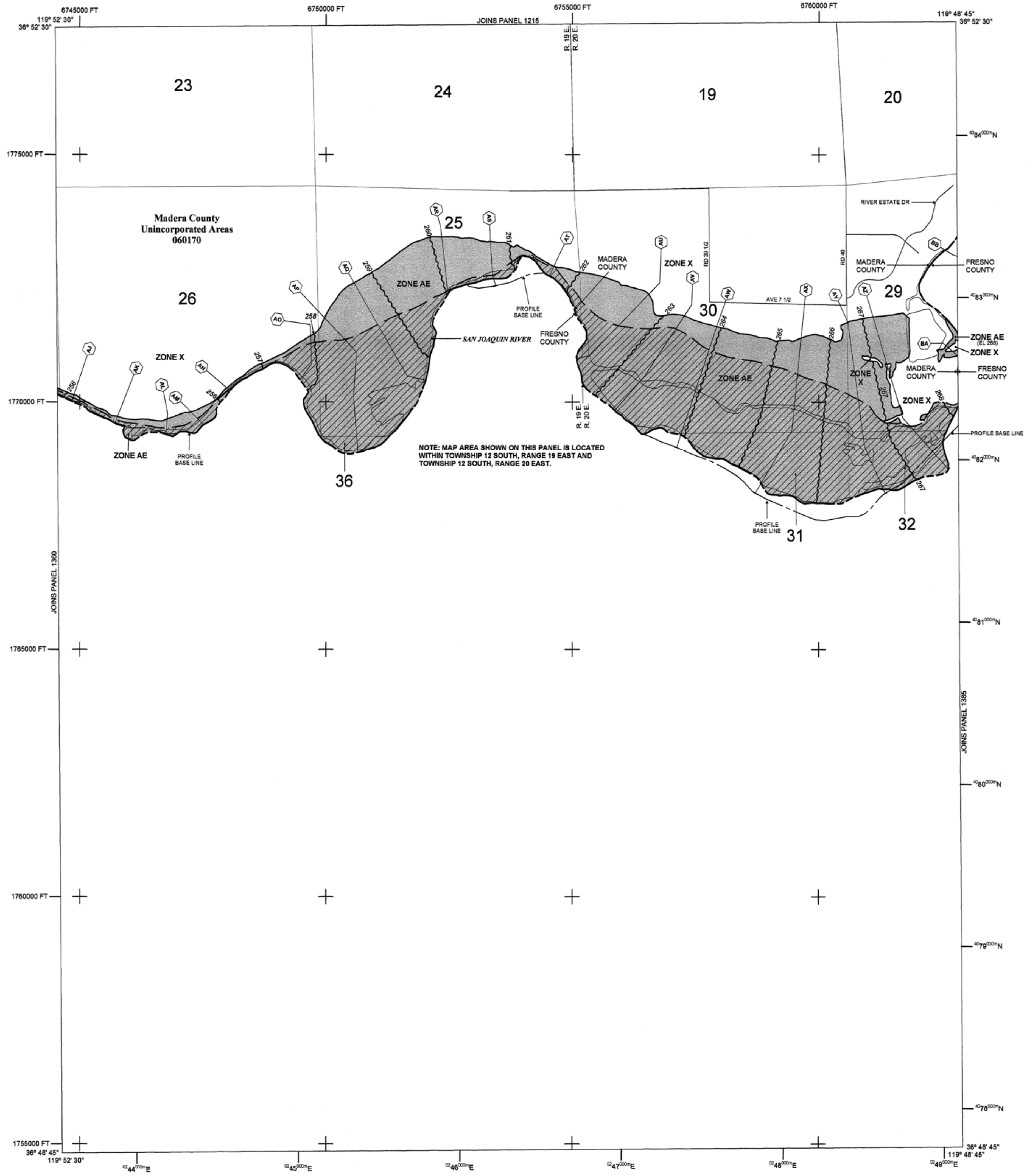
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — 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.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - 23	Transect line
97° 07' 30", 32° 22' 30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000mE	1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone III (FIPSZONE 0403), Lambert Conformal Conic Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL
SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1380E

FIRM
FLOOD INSURANCE RATE MAP
MADERA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1380 OF 1385

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MADERA COUNTY	060170	1380	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06039C1380E

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

APPENDIX D

Geotechnical Design Memorandum

Geotechnical Design Memorandum

To: Andrew Benelli, Assistant Public Works Director (Andrew.Benelli@fresno.gov)
Luis Gonzalez, Project Manager, Blair, Church & Flynn (LGonzalez@bcf-engr.com)

From: George P. Hattrup, G.E.
RMA GeoScience

Date: July 19, 2017

Subject: Geotechnical Design Information
Palm Bluffs River Access at Spano Park
North of Palm Avenue & Nees Avenue
Fresno, California
RMA Project No. 17H-0177-0

In order to help expedite the design process, the following geotechnical design information is being provided in advance of the Geotechnical Investigation Report that is being prepared for this project. The project site lies within the area of Spano Park, an FMFCD Parcel, and the River West Open Space Area, north of the intersection of Nees and Palm Avenues in Fresno, California, as indicated on Figure 1, Site Vicinity Map. The geographic position of the site is 36.8540° north latitude and 119.8064° west longitude. Based on information provided by Blair, Church & Flynn, the access road will run through the west end of Spano Park, head northeast down and along the river bluff for approximately 750 feet, and then make a 180° turn before heading to the southwest for approximately 900 feet, ending in a parking lot near the river. The access road will have overall length of about 3,050 feet. The new roadway will have a cut-fill section along the face of existing approximately 2H:1V bluff slope, with the fill extending from the new road down to the toe of the existing slope. The proposed retaining wall will have a length of approximately 550 feet, with a maximum height of 12 feet, and be located along the cut or upslope portion of the access road. This project will also include making some drainage improvements where the new access road will cross an existing culvert at the bottom of the bluff slope.

Overview of Subsurface Conditions

Five test borings were drilled along or near the alignment of the planned access road. The locations of the borings was based on the planned alignment of the access road as of June 30, 2017, as shown on Figure 2. The soil encountered in the test borings consisted of both fill and native soils. At Boring B-1, landfill materials were encountered within a fine to medium silty sand matrix to a depth of approximately 32 feet. The landfill materials included miscellaneous trash, wood, tin can, plastic, wire, rope, asphalt, motor oil, and paper. In Borings B-2 and B-3 (within the FMFCD parcel), clean fill consisting of fine to medium silty sand with minor/scattered gravel was encountered to depths of approximately 7 and 12 feet, respectively. In Boring B-5, fill with wood debris and a piece of wire was encountered within a fine to medium silty sand matrix to the maximum depth explored of 11 feet. The native soils encountered below the fill in Borings B-1 through B-3, and at Boring B-4, consisted of fine to medium silty sand with scattered fine gravel and seams of fine sand and sandy silt. The consistency of the soils was generally medium dense to very dense. However, a loose zone of soil was encountered in

Boring B-4 at a depth of approximately 15 feet. More details concerning the fill and native soils encountered in the test borings are provided on the attached boring logs.

Following our field exploration, the proposed alignment of the access road at the top of the bluff was shifted to the east so that it would be within the west end of Spano Park. This realignment was done to avoid constructing the road on landfill material as indicated by Boring B-1. Based on two letters dated May 3, 2002, which were prepared by The Twining Laboratories, and letters dated July 7 and 25, 1994, which were prepared by Fresno County Health Services Agency, landfill material was removed and replaced with engineered fill as part of the construction of Spano Park. The landfill material extended to a depth of approximately 30 feet, which corresponds well with the depth of landfill material that was encountered in our Boring B-1. These letters also indicate that engineered fill material was derived from soil that had been removed and separated from any waste and clean imported soils. One of the Twining letters also indicates that a geotechnical investigation was performed by Twining (report dated March 21, 1991, and report update dated December 2, 1999) for the Spano Park project. In addition, the placement of engineered fill following the removal of the landfill material was documented by Twining in reports dated September 6, 1994, and January 5, 1995. It is understood that the City of Fresno does not have a copy of the geotechnical investigation report, related report update, or reports documenting the engineered fill, which could be made available for review.

Seismic Considerations

The subject site is not located within the boundaries of an Earthquake Fault Zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no faults are known to pass through the property. The nearest active earthquake fault zones (evidence of displacement within the past 11,700 years) are the Nunez Fault, the Ortigalita Fault Zone, and the San Andreas Fault Zone, located approximately, 56 miles southwest, 57 miles west, and 70 miles west, respectively, of the project site.

Seismic design parameters have been developed in accordance with Section 1613 of the 2016 California Building Code (CBC) using the online U.S. Geological Survey Seismic Design Maps Calculator (ASCE 7-10 Standard) and a site location based on latitude and longitude. The calculator generates probabilistic and deterministic maximum considered earthquake spectral parameters represented by a 5-percent damped acceleration response spectrum having a 2-percent probability of exceedance in 50 years. The deterministic response accelerations are calculated as 150 percent of the largest median 5-percent damped spectral response acceleration computed on active faults within a region, where the deterministic values govern. The calculator does not, however, produce separate probabilistic and deterministic results. The parameters generated for the subject site are presented below:

2016 California Building Code (CBC) Seismic Parameters

Parameter	Value
Site Location	Latitude = 36.8540 degrees Longitude = -119.8064 degrees
Site Class	Site Class = D Soil Profile Name = Stiff Soil
Mapped Spectral Accelerations	S_s (0.2- second period) = 0.613g S_1 (1-second period) = 0.252g
Site Coefficients (Site Class D)	F_a = 1.309 F_v = 1.896
Maximum Considered Earthquake Spectral Accelerations (Site Class D)	S_{MS} (0.2- second period) = 0.803g S_{M1} (1-second period) = 0.477g
Design Earthquake Spectral Accelerations (Site Class D)	S_{DS} (0.2- second period) = 0.535g S_{D1} (1-second period) = 0.318g

According to CBC Section 1613.3 and based on the spectral response acceleration parameters S_{DS} and S_{D1} indicated above, the Seismic Design Category is D (CBC Table 1604.5 and Section 1613.5.6) for all Risk Categories. Based on our subsurface exploration and our knowledge of the geologic setting, there is no significant risk of ground rupture, liquefaction, lateral spreading, or seismic settlement to occur at the subject site during a design-level seismic event.

Site Preparation and Grading

The following procedures should be implemented during site preparation and earthwork grading for the proposed buildings. It should be noted that all references to maximum dry density, optimum moisture content, and relative compaction are based on ASTM D 1557 laboratory test procedures.

Within the area of the planned roadway, parking lot, and fill slope improvements, trash, debris, and the near-surface soils containing vegetation, roots, or other objectionable organic matter should be stripped to expose a clean soil surface. Based on our field exploration, the site should be stripped to a depth of at least 4 inches. In addition, tree roots will need to be removed or grubbed out and properly disposed of so they are not mixed into over-excavated soils that will be used as engineered fill. It is anticipated that the grubbing of tree roots will need to extend to a depth of approximately 2 to 3 feet below the stripped surface within the canopy area of the trees. All concentrations of tree roots and isolated roots greater than 1/2-inch in diameter must be removed. Materials resulting from stripping and grubbing operations should be removed from the site and properly disposed. The stripped and grubbed surfaces should be reviewed and approved by the Project Geotechnical Engineer prior to placing compacted fill.

In areas where the full width of the roadway is in cut, the subgrade below the AC pavement section and sidewalk area should be scarified at least 8 inches, moisture-conditioned to at least optimum moisture content, and compacted to at least 95 percent relative compaction. In areas where one side of the roadway is in cut and the other side is in fill, the subgrade in the cut area should be over-excavated 12 inches and the exposed ground surface should be scarified at least 6 inches, moisture-conditioned to at least optimum moisture content, and compacted to at least 95 percent relative compaction. In areas where fill will be placed, the stripped ground surface should be scarified at least 8 inches, moisture-conditioned to at least optimum moisture content, and compacted to at least 92 percent relative compaction, except the upper two feet of subgrade below pavement sections should be compacted to at least 95 percent relative compaction.

Excavated soils that are free of organics or other deleterious materials may be used as engineered fill, subject to the review and approval of the Project Geotechnical Engineer. Fill material should be placed in nearly horizontal layers, uniformly moisture conditioned to at least optimum moisture content, and then compacted in layers that do not exceed 8 inches in thickness. Engineered fill must be compacted to achieve a relative compaction of at least 92% except for the upper 24 inches of subgrade pavement sections subject to vehicular traffic, which must be compacted to at least 95 percent.

Permanent cut and fill slopes should be no steeper than 2H:1V. Appropriate measures should be taken to protect the faces of fill and cut slopes from erosion, including the construction of a berm, swale, or curb at the top of the slopes to prevent runoff from flowing over the top of the slope. Temporary cuts must be no steeper than 1:1 and Cal/OSHA construction safety orders should be observed during all underground work.

Fill slopes must be properly keyed and benched into the existing slope where the planned roadway will be constructed along the face of the river bluff. The keyway should be at least 12 feet wide and extend into firm and stable soils at least two feet below the bottom the ditch that exists at the toe of the existing slope. As fill is placed it should be benched into the existing FMFCD embankment using 2-foot vertical benches and benched into the river bluff slope using 4-foot vertical benches. A representative from RMA GeoScience must review and approve the keyway and benches as they are being constructed to evaluate the stability surrounding soils and determine if changes to these recommendations are warranted.

Slope Stability Analysis

A slope stability analysis is being performed to evaluate the overall stability of the existing river bluff slope and the proposed slope condition at roadway Station 14+00. Details of this analysis will be provided in our forthcoming geotechnical report; however, based on the analysis that has been completed to date, the factors of safety against a slope failure are provided below.

Calculated Factors of Safety Against Slope Failure

Slope Condition	Factor of Safety
Existing Slope - Static Conditions	1.67
Existing Slope - Seismic Conditions	1.33
Proposed Slope with Roadway - Static Conditions	2.15
Proposed Slope with Roadway - Seismic Conditions	1.66

Our slope stability analysis indicates that the proposed roadway project will enhance the stability of the river bluff slope in the project area. This was anticipated, since the new fill embankment will act as a buttress on the lower part of the existing slope.

Imported Fill Material

Imported fill materials must be free of organics, non-hazardous and be obtained from a single, uniform source that meets the following criteria:

Maximum Particle Size:	3 inches
Percent Passing 3/4 inch Sieve:	90% - 100%
Percent Passing #4 Sieve:	65% - 100%
Percent Passing #200 Sieve:	20% - 50%
Remolded Angle of Internal Friction:	≥ 32°
Minimum R-Value:	40 (for upper 12" of subgrade below pavement sections)
Soluble Sulfates < 1,000 mg/kg	
Soluble Chlorides < 200 mg/kg	
pH in the range of 6.0 to 8.5	

Retaining Walls

Provided a non-expansive, drained backfill is placed, retaining structures should be designed to resist the following lateral active earth pressures:

Surface Slope of Retained Materials (Horizontal:Vertical)	Equivalent Fluid Weight (pcf)
Level	38
5:1	41
4:1	42
3:1	45
2:1	58

Footings for retaining walls should be embedded at least 24 inches into firm native soils or engineered fill and have a minimum width of 24 inches. Footings may be designed using an allowable average bearing pressure of 3,000 psf with a maximum toe pressure of 3,500 psf. and lateral resistance values recommended for continuous wall footings. This allowable bearing pressure represents an allowable net increase in soil pressure over existing soil pressure and may be increased by one-third for short-term seismic loads. The type and dimensions of concrete, and the size and location of reinforcing steel, used in foundations should be specified by the Project Design Engineer.

Lateral loads may be resisted by soil friction and the passive resistance of the soil. The following parameters are recommended.

- Allowable Passive Earth Pressure = 200 pcf (equivalent fluid weight, includes a factor of safety = 2.0)
- Allowable Coefficient of Friction (soil to footing) = 0.4 (includes a factor of safety = 1.5)

Cement Type and Soil Corrosion Potential

The results of a test performed on a shallow sample of soil obtained from the project site indicate the soluble sulfate content is 13.3 mg/kg (0.000133 percent by weight). Thus, below-grade concrete at the subject site should have a negligible exposure to water-soluble sulfate in the soil. Our recommendations for concrete exposed to soils containing various concentrations of soluble sulfate are presented in the table below.

Recommendations for Concrete Exposed to Soils Containing Soluble Sulfate

Sulfate Exposure	Water Soluble Sulfate (SO_4) in Soil (% by Weight)	Sulfate (SO_4) in Water (ppm)	Cement Type (ASTM C150)	Maximum Water-Cement Ratio (by Weight)	Minimum Compressive Strength (psi)
Negligible	0.00 - 0.10	0-150	--	--	2,500
Moderate	0.10 - 0.20	150-1,500	II	0.50	4,000
Severe	0.20 - 2.00	1,500-10,000	V	0.45	4,500
Very Severe	Over 2.00	Over 10,000	V plus pozzolan or slag	0.45	4,500

Use of alternate combinations of cementitious materials may be permitted if the combinations meet design recommendations contained in American Concrete Institute guideline ACI 318-11.

Our testing also indicates that there is a very low soluble chloride content (15.0mg/kg) in the onsite soils; therefore, no special protection of reinforcing steel should be required due to soil conditions.

The soils were also tested for soil reactivity (pH) and minimum electrical resistivity (ohm-cm). The test results indicate that the on-site soils have a soil reactivity of 8.6 and a minimum electrical resistivity of 11,450 ohm-cm. A neutral or non-corrosive soil has a pH value ranging from approximately 6 to 8.4. Generally, soils that could be considered moderately corrosive to ferrous metals have minimum resistivity values of about 3,000 ohm-cm to 10,000 ohm-cm. Soils with minimum resistivity values less than 3,000 ohm-cm can be considered corrosive and soils with minimum resistivity values less than 1,000 ohm-cm can be considered extremely corrosive. In any case, buried metal conduits should have a protective coating in accordance with the manufacturer's specifications. A corrosion specialist should be consulted if more detailed recommendations are required.

Pavement Sections

The sub-grade Resistance value (R-value) of a near-surface soil sample obtained from Boring B-1 was determined in accordance with CT 301. The results of this test indicated an R-value of 53. However, due to the variability of the soil conditions along the project alignment and that imported fill will probably be used to construct much of the roadway embankment, a subgrade R-value of 40 is recommended for design purposes. The asphalt concrete (AC) structural section recommendations given herein were developed using the procedures outlined in Chapter 630 of the California Highway Design Manual. The design procedure is based on the principle that the pavement structural section must be of adequate thickness to distribute the load from the design Traffic Index (TI) to the subgrade soils in such a manner that the stresses from the applied loads do not exceed the strength of the soil (R-value). Recommended structural sections are given below:

Design TI	Recommended Pavement Section
5.0 or less	2.5” AC over 5.0” Class 2 AB
5.5	3.0” AC over 5.5” Class 2 AB
6.0	3.0” AC over 6.5” Class 2 AB

Prior to paving, the subgrade should be prepared in accordance with the "Site Preparation and Grading" section of this document. All aggregate base courses should be moisture conditioned to within 2% of optimum moisture content and compacted to a minimum of 95% relative compaction. The AC mix design(s) and installation requirements should be specified by the Project Civil Engineer.

Attachments: Figure 1, Site Vicinity Map
Figure 2, Boring Location Map
Logs for Borings B-1 through B-5

Figure 1

Site vicinity Map

Palm Bluffs River Access

North of Palm and Nees Avenues

Fresno, California 93711

Project #17H-0177-0

Scale: 1" ≈ 2,170'

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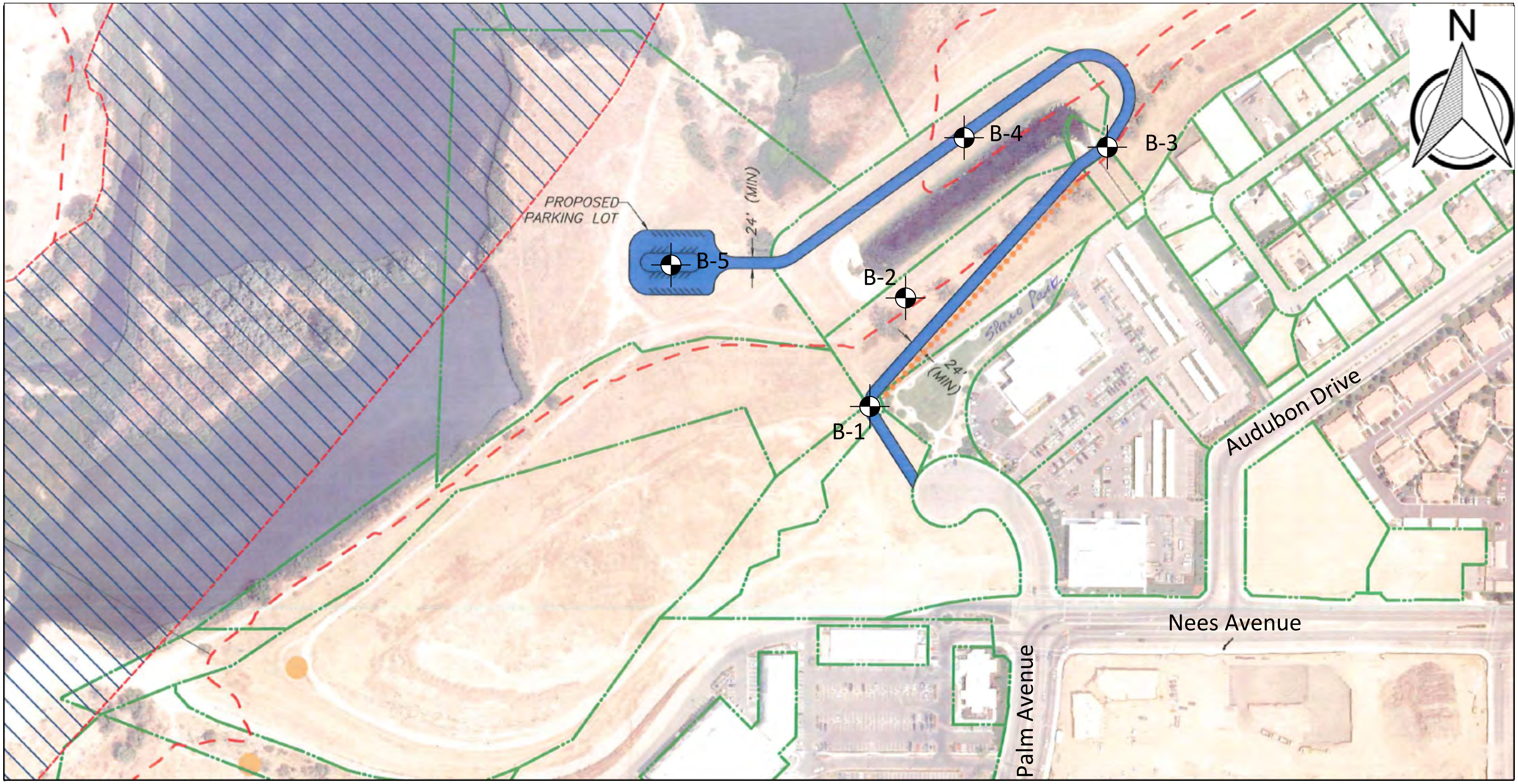

Reference: Site Plan prepared by Blair, Church & Flynn Consulting Engineers, 05/17/2015

Scale: 1" ≈ 310'

FIGURE 2

BORING LOCATION MAP

Palm Bluffs River Access
North of the Intersection of
Nees Avenue and Palm Avenue
Fresno, California
Project #17H-0177-0

B-2 Approximate Boring Location

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Exploratory Boring Log

Boring No. B-1
Sheet 1 of 2

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85309°, -119.80651°	Drop Height:	30"

This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

Depth (ft)	Samples: Sample Type	Samples: Blows (blows/ft)	Samples: Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
			Bulk					**FILL:** Brown, fine to medium SILTY SAND with minor clay, moist, dense, with interlayers of fine to medium SAND and scattered fine gravel
	T	34		7.0	118.5			
5	R	40		5.4	112.6			. . .increasing sand content, with scattered debris: wood fragments, tin can, asphalt fragments, plastic
10	T	58		3.1	121.9			. . .gray staining, fine to coarse, with scattered fine gravel, very dense, odor of petroleum, with scattered debris: trash, asphalt fragments
								. . .rope
								. . .with scattered wire
15	R	34		6.9	107.8	SM		
20	T	20		10.9	102.2			. . .medium dense, more plastic and wood debris
25	R	24						. . .paper and wood debris
30	T	27		11.4	107.8			. . .increasing silt content
								NATIVE: Gray, fine SILTY SAND with fine sand and f sandy silt seams, moist, dense
35	T	35		8.1	83.7	SM		
	T							

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
S - SPT Sample
Bulk Sample
T - Modified California Tube Sample
R - Ring Sample

Symbols:
- Groundwater
- End of Boring

Exploratory Boring Log

Boring No. B-1
Sheet 2 of 2

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85309°, -119.80651°	Drop Height:	30"

Depth (ft)	Samples: Sample Type	Samples: Blows (blows/ft)	Samples: Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
								This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.
	T	60		34.3	82.3	SM		. . .very dense
45								Notes: 1. Boring terminated at 41' 2. No Groundwater Encountered 3. Boring backfilled with soil cuttings
50								
55								
60								
65								
70								
75								

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
- S - SPT Sample
- Bulk Sample
- T - Modified California Tube Sample
- R - Ring Sample

Symbols:
- Groundwater
- End of Boring

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Exploratory Boring Log

Boring No. B-2
Sheet 1 of 1

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85392°, -119.80609°	Drop Height:	30"

Material Description: This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

Depth (ft)	Sample Type	Blows (blows/ft)	Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Material Description
0–7.5						SM	**FILL:** Brown, fine to medium SILTY SAND with scattered fine gravel, moist, dense
~1.5	T	39	Bulk	9.8	107.7		
~5	T	42		11.9	135.4		
7.5–16						SM	**NATIVE:** Brown, fine to medium SILTY SAND with scattered fine gravel, moist, dense
~10	R	40		9.4	100.2		
~15	T	21		6.0	94.0		. . .fine grained, increasing sand content, no fine gravel

Notes:
1. Boring terminated at 16'
2. No Groundwater Encountered
3. Boring backfilled with soil cuttings

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
- S - SPT Sample
- Bulk Sample
- T - Modified California Tube Sample
- R - Ring Sample

Symbols:
- Groundwater
- End of Boring

Exploratory Boring Log

Boring No. B-3

Sheet 1 of 1

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85445°, -119.80487°	Drop Height:	30"

This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

Depth (ft)	Samples: Sample Type	Samples: Blows (blows/ft)	Samples: Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
	T	29	▨	8.2	109.1	SM		**FILL:** Brown, fine to medium SILTY SAND with scattered coarse grains and fine gravel, moist, medium dense
5	T	29		14.0	104.4			. . .no gravel
	R	33						. . .dense
10	S	32				SM		**NATIVE:** Brown, fine to medium SILTY SAND, moist, dense
15	S	2						. . .light brown, very loose
20								Notes: 1. Boring terminated at 16' 2. No Groundwater Encountered 3. Boring backfilled with soil cuttings
25								
30								
35								

***Note**

All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
- S - SPT Sample
- Bulk Sample
- T - Modified California Tube Sample
- R - Ring Sample

Symbols:
- Groundwater
- End of Boring

Exploratory Boring Log

Boring No. B-4
Sheet 1 of 1

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85479°, -119.80595°	Drop Height:	30"

This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

Depth (ft)	Samples: Sample Type	Samples: Blows (blows/ft)	Samples: Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
	T	17	Bulk	11.3	107.0	SM		**NATIVE:** Brown, fine to medium SILTY SAND, moist, medium dense
5	S	32						. . .dense, with seams of fine to medium SAND
10	S	48						
15								Notes: 1. Boring terminated at 11' 2. No Groundwater Encountered 3. Boring backfilled with soil cuttings
20								
25								
30								
35								

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
- S - SPT Sample
- Bulk Sample
- T - Modified California Tube Sample
- R - Ring Sample

Symbols:
- Groundwater
- End of Boring

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Exploratory Boring Log

Boring No. B-5
Sheet 1 of 1

Date Drilled:	July 5, 2017	Drilling Equipment:	CME 75, Hollow Stem Auger
Logged By:	MJS	Borehole Diameter:	7"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.85382°, -119.80783°	Drop Height:	30"

This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

Depth (ft)	Samples: Sample Type	Samples: Blows (blows/ft)	Samples: Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Material Description
	T	19	Bulk	4.9	97.9		**FILL:** Light brown, fine to medium SILTY SAND with scattered fine gravel, moist, medium dense
5	S	2				SM	. . .very loose, with wood debris
	S	21					. . .medium dense, increasing sand content
10	S	21					. . .with scattered wire

Notes:
1. Boring terminated at 11'
2. No Groundwater Encountered
3. Boring backfilled with soil cuttings

Depth scale: 5, 10, 15, 20, 25, 30, 35

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
- S - SPT Sample
- Bulk Sample
- T - Modified California Tube Sample
- R - Ring Sample

Symbols:
- Groundwater
- End of Boring

Appendix CC
CalEEMod Emission Estimates

SJRC - River West Eaton Trail Extension Project (Perrin Ave Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	2.23	Acre	2.23	97,055.00	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.7 **Precipitation Freq (Days)** 45

Climate Zone 3 **Operational Year** 2020

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave Parking Lot = 2.23 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 inches = 3585 cu yds. of decomposed granite.

Vehicle Trips - Trip rate and length are based on 318 total daily trips and total VMT from the Traffic Impact Analysis Report. Assume all primary trips.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	230.00	66.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00
tblLandUse	LandUseSquareFeet	97,138.80	97,055.00
tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00

tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	64.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	163.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	33.00	40.00
tblVehicleTrips	CC_TL	7.30	8.30
tblVehicleTrips	CNW_TL	7.30	8.30
tblVehicleTrips	CW_TL	9.50	8.30
tblVehicleTrips	DV_TP	28.00	0.00

tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PR_TP	66.00	100.00
tblVehicleTrips	ST_TR	1.59	15,900.00
tblVehicleTrips	SU_TR	1.59	15,900.00
tblVehicleTrips	WD_TR	1.59	15,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1955	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1955**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

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					
2019	2.1955	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1955**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	**NOx**	**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**

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	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Mobile	0.2218	0.7947	2.6894	6.4900e-003	0.3655	0.0132	0.3787	0.0982	0.0121	0.1103	0.0000	475.5073	475.5073	0.0137	0.0000	475.7946
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**1.9435**	**0.7947**	**2.6895**	**6.4900e-003**	**0.3655**	**0.0132**	**0.3787**	**0.0982**	**0.0121**	**0.1103**	**0.0000**	**500.3779**	**500.3779**	**0.0148**	**2.3000e-004**	**500.7610**

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	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Mobile	0.2218	0.7947	2.6894	6.4900e-003	0.3655	0.0132	0.3787	0.0982	0.0121	0.1103	0.0000	475.5073	475.5073	0.0137	0.0000	475.7946
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**1.9435**	**0.7947**	**2.6895**	**6.4900e-003**	**0.3655**	**0.0132**	**0.3787**	**0.0982**	**0.0121**	**0.1103**	**0.0000**	**500.3779**	**500.3779**	**0.0148**	**2.3000e-004**	**500.7610**

	ROG	NOx	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	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
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
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

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	0.2218	0.7947	2.6894	6.4900e-003	0.3655	0.0132	0.3787	0.0982	0.0121	0.1103	0.0000	475.5073	475.5073	0.0137	0.0000	475.7946
Unmitigated	0.2218	0.7947	2.6894	6.4900e-003	0.3655	0.0132	0.3787	0.0982	0.0121	0.1103	0.0000	475.5073	475.5073	0.0137	0.0000	475.7946

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	318.00	318.00	318.00	960,742	960,742
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	318.00	318.00	318.00	960,742	960,742

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	8.30	8.30	8.30	33.00	48.00	19.00	100	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

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	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.8463	24.8463	1.1200e-003	2.3000e-004	24.9419
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	85408.4	24.8463	1.1200e-003	2.3000e-004	24.9419
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**24.8463**	**1.1200e-003**	**2.3000e-004**	**24.9419**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	85408.4	24.8463	1.1200e-003	2.3000e-004	24.9419
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**24.8463**	**1.1200e-003**	**2.3000e-004**	**24.9419**

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	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Unmitigated	1.7217	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005

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	0.2046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Total	**1.7217**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0000**	**6.0000e-005**

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	0.2046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.0000e-005	6.0000e-005	0.0000	0.0000	6.0000e-005
Total	**1.7217**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0000**	**6.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (Perrin Ave & Additional Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.87	Acre	3.87	168,577.20	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave + Additional Parking Lot = 3.87 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 in = 3585 cu yds. of decomposed granite.

Vehicle Trips - Trip rate and length are based on 558 total daily trips and total VMT from the Traffic Impact Analysis Report. Assume all primary trips.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	148,229.00	147,156.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	444,686.00	441,467.00
tblAreaCoating	Area_Nonresidential_Interior	444686	441467
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	300.00	66.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00

tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	75.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	193.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	39.00	40.00
tblVehicleTrips	CC_TL	7.30	6.96
tblVehicleTrips	CNW_TL	7.30	6.96

tblVehicleTrips	CW_TL	9.50	6.96
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PR_TP	66.00	100.00
tblVehicleTrips	ST_TR	1.59	27,900.00
tblVehicleTrips	SU_TR	1.59	27,900.00
tblVehicleTrips	WD_TR	1.59	27,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1976	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1976**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

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					
2019	2.1976	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1976**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	**NOx**	**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**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Mobile	0.3668	1.2114	4.3276	9.6100e-003	0.5378	0.0195	0.5573	0.1445	0.0180	0.1625	0.0000	703.9708	703.9708	0.0205	0.0000	704.4020
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3682**	**1.2114**	**4.3277**	**9.6100e-003**	**0.5378**	**0.0195**	**0.5573**	**0.1445**	**0.0180**	**0.1625**	**0.0000**	**747.1512**	**747.1512**	**0.0225**	**4.0000e-004**	**747.7487**

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	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Mobile	0.3668	1.2114	4.3276	9.6100e-003	0.5378	0.0195	0.5573	0.1445	0.0180	0.1625	0.0000	703.9708	703.9708	0.0205	0.0000	704.4020
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3682**	**1.2114**	**4.3277**	**9.6100e-003**	**0.5378**	**0.0195**	**0.5573**	**0.1445**	**0.0180**	**0.1625**	**0.0000**	**747.1512**	**747.1512**	**0.0225**	**4.0000e-004**	**747.7487**

	ROG	NOx	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	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
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
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	5.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0313**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

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	0.3668	1.2114	4.3276	9.6100e-003	0.5378	0.0195	0.5573	0.1445	0.0180	0.1625	0.0000	703.9708	703.9708	0.0205	0.0000	704.4020
Unmitigated	0.3668	1.2114	4.3276	9.6100e-003	0.5378	0.0195	0.5573	0.1445	0.0180	0.1625	0.0000	703.9708	703.9708	0.0205	0.0000	704.4020

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	558.00	558.00	558.00	1,413,660	1,413,660
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	558.00	558.00	558.00	1,413,660	1,413,660

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
City Park	6.96	6.96	6.96	33.00	48.00	19.00	100	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

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	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.1561	43.1561	1.9500e-003	4.0000e-004	43.3223
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	148348	43.1561	1.9500e-003	4.0000e-004	43.3223
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.1561**	**1.9500e-003**	**4.0000e-004**	**43.3223**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	148348	43.1561	1.9500e-003	4.0000e-004	43.3223
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.1561**	**1.9500e-003**	**4.0000e-004**	**43.3223**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	2.0014	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005

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	0.2050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**2.0014**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

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	0.2050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**2.0014**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (No Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres

Construction Phase - Construction phases spcific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance spcific to project.

Grading - 2.5 miles x 22 feet x 4 inches = 3585 cu yds. of decomposed granite.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	HorsePower	171.00	400.00
tblOffRoadEquipment	LoadFactor	0.42	0.38
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1055	1.0932	0.7667	1.5600e-003	0.0166	0.0522	0.0688	3.5500e-003	0.0480	0.0516	0.0000	135.9297	135.9297	0.0398	0.0000	136.7647
Total	**0.1055**	**1.0932**	**0.7667**	**1.5600e-003**	**0.0166**	**0.0522**	**0.0688**	**3.5500e-003**	**0.0480**	**0.0516**	**0.0000**	**135.9297**	**135.9297**	**0.0398**	**0.0000**	**136.7647**

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					
2019	0.1055	1.0932	0.7667	1.5600e-003	0.0166	0.0522	0.0688	3.5500e-003	0.0480	0.0516	0.0000	135.9295	135.9295	0.0398	0.0000	136.7645
Total	**0.1055**	**1.0932**	**0.7667**	**1.5600e-003**	**0.0166**	**0.0522**	**0.0688**	**3.5500e-003**	**0.0480**	**0.0516**	**0.0000**	**135.9295**	**135.9295**	**0.0398**	**0.0000**	**136.7645**

	ROG	**NOx**	**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**

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	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	**NOx**	**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	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Paving	Paving	7/1/2019	7/31/2019	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Other Construction Equipment	1	8.00	400	0.38
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	2	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36

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
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.3972	0.2529	5.2000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	46.2059	46.2059	0.0145	0.0000	46.5097
Total	**0.0366**	**0.3972**	**0.2529**	**5.2000e-004**	**5.5700e-003**	**0.0191**	**0.0247**	**6.1000e-004**	**0.0176**	**0.0182**	**0.0000**	**46.2059**	**46.2059**	**0.0145**	**0.0000**	**46.5097**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.3972	0.2529	5.2000e-004		0.0191	0.0191		0.0176	0.0176	0.0000	46.2058	46.2058	0.0145	0.0000	46.5096
Total	**0.0366**	**0.3972**	**0.2529**	**5.2000e-004**	**5.5700e-003**	**0.0191**	**0.0247**	**6.1000e-004**	**0.0176**	**0.0182**	**0.0000**	**46.2058**	**46.2058**	**0.0145**	**0.0000**	**46.5096**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Paving - 2019

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0263**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.4 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0263**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.4 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	1.3361	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.2019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.2019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1342					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.3361**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project (Perrin Ave + Palm & Nees Parking Lot)

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.41	Acre	3.41	148,495.00	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Trail = 6.67 acres; Perrin Ave + Palm & Nees Parking Lot = 3.41 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment -

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Trips and VMT - Trips and distance specific to project.

Grading - 2.5 miles x 22 feet x 4 in = 3585 cu yds. of decomposed granite.

Vehicle Trips - Trip rate and length are based on 318 total daily trips and total VMT from the Traffic Impact Analysis Report. Assume all primary trips.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	147,927.00	147,156.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	443,782.00	441,467.00
tblAreaCoating	Area_Nonresidential_Interior	443782	441467
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	300.00	66.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	8/29/2019	9/30/2019
tblConstructionPhase	PhaseEndDate	10/31/2019	7/31/2019
tblConstructionPhase	PhaseEndDate	6/28/2019	6/30/2019
tblConstructionPhase	PhaseStartDate	8/1/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	10/1/2019	7/1/2019
tblGrading	AcresOfGrading	11.50	10.00
tblGrading	MaterialImported	0.00	3,585.00

tblLandUse	LandUseSquareFeet	148,539.60	148,495.00
tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	448.00	230.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	40.00
tblTripsAndVMT	WorkerTripNumber	28.00	40.00
tblTripsAndVMT	WorkerTripNumber	185.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	37.00	40.00
tblVehicleTrips	CC_TL	7.30	6.88

tblVehicleTrips	CNW_TL	7.30	6.88
tblVehicleTrips	CW_TL	9.50	6.88
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PR_TP	66.00	100.00
tblVehicleTrips	ST_TR	1.59	27,900.00
tblVehicleTrips	SU_TR	1.59	27,900.00
tblVehicleTrips	WD_TR	1.59	27,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.1970	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6043	190.6043	0.0534	0.0000	191.7266
Total	**2.1970**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6043**	**190.6043**	**0.0534**	**0.0000**	**191.7266**

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					
2019	2.1970	1.4822	1.0147	2.2100e-003	0.0305	0.0692	0.0997	7.2500e-003	0.0638	0.0710	0.0000	190.6041	190.6041	0.0534	0.0000	191.7264
Total	**2.1970**	**1.4822**	**1.0147**	**2.2100e-003**	**0.0305**	**0.0692**	**0.0997**	**7.2500e-003**	**0.0638**	**0.0710**	**0.0000**	**190.6041**	**190.6041**	**0.0534**	**0.0000**	**191.7264**

	ROG	**NOx**	**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**

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	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Mobile	0.3654	1.2005	4.3042	9.5000e-003	0.5316	0.0193	0.5509	0.1428	0.0178	0.1606	0.0000	696.1851	696.1851	0.0203	0.0000	696.6120
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.2883**	**1.2005**	**4.3043**	**9.5000e-003**	**0.5316**	**0.0193**	**0.5509**	**0.1428**	**0.0178**	**0.1606**	**0.0000**	**734.2245**	**734.2245**	**0.0221**	**3.6000e-004**	**734.7978**

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	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Mobile	0.3654	1.2005	4.3042	9.5000e-003	0.5316	0.0193	0.5509	0.1428	0.0178	0.1606	0.0000	696.1851	696.1851	0.0203	0.0000	696.6120
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.2883**	**1.2005**	**4.3043**	**9.5000e-003**	**0.5316**	**0.0193**	**0.5509**	**0.1428**	**0.0178**	**0.1606**	**0.0000**	**734.2245**	**734.2245**	**0.0221**	**3.6000e-004**	**734.7978**

	ROG	**NOx**	**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	Grading	Grading	5/1/2019	5/31/2019	5	23	
2	Trenching	Trenching	6/1/2019	6/30/2019	5	20	
3	Building Construction & Landscaping	Building Construction	7/1/2019	9/30/2019	5	66	
4	Paving	Paving	7/1/2019	7/31/2019	5	23	
5	Architectural Coating	Architectural Coating	9/1/2019	9/30/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 441,467; Non-Residential Outdoor: 147,156 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Plate Compactors	2	8.00	8	0.43
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Trenching	Graders	1	8.00	174	0.41
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Other Construction Equipment	1	8.00	171	0.42
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rubber Tired Loaders	2	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction & Landscaping	Cranes	0	7.00	226	0.29
Building Construction & Landscaping	Forklifts	1	8.00	89	0.20
Building Construction & Landscaping	Generator Sets	0	8.00	84	0.74
Building Construction & Landscaping	Rubber Tired Loaders	2	8.00	199	0.36
Building Construction & Landscaping	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction & Landscaping	Welders	0	8.00	46	0.45
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	199	0.36
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
Grading	10	40.00	0.00	230.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Trenching	11	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Landscaping	3	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Paving	8	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

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					5.5700e-003	0.0000	5.5700e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4016	0.2758	5.2000e-004		0.0205	0.0205		0.0189	0.0189	0.0000	46.2256	46.2256	0.0145	0.0000	46.5295
Total	**0.0391**	**0.4016**	**0.2758**	**5.2000e-004**	**5.5700e-003**	**0.0205**	**0.0261**	**6.1000e-004**	**0.0189**	**0.0195**	**0.0000**	**46.2256**	**46.2256**	**0.0145**	**0.0000**	**46.5295**

3.2 Grading - 2019

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	1.2000e-003	7.0500e-003	0.0214	2.0000e-005	4.9000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9882	1.9882	2.0000e-005	0.0000	1.9886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**2.4200e-003**	**8.6200e-003**	**0.0367**	**6.0000e-005**	**4.1700e-003**	**1.3000e-004**	**4.3000e-003**	**1.1200e-003**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**4.9289**	**4.9289**	**1.6000e-004**	**0.0000**	**4.9322**

3.3 Trenching - 2019

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6993	45.6993	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6993**	**45.6993**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

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	0.0379	0.3965	0.2562	5.1000e-004		0.0194	0.0194		0.0179	0.0179	0.0000	45.6992	45.6992	0.0143	0.0000	46.0001
Total	**0.0379**	**0.3965**	**0.2562**	**5.1000e-004**		**0.0194**	**0.0194**		**0.0179**	**0.0179**	**0.0000**	**45.6992**	**45.6992**	**0.0143**	**0.0000**	**46.0001**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction & Landscaping - 2019

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

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	0.0311	0.3594	0.1480	4.5000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	40.8505	40.8505	0.0129	0.0000	41.1219
Total	**0.0311**	**0.3594**	**0.1480**	**4.5000e-004**		**0.0141**	**0.0141**		**0.0130**	**0.0130**	**0.0000**	**40.8505**	**40.8505**	**0.0129**	**0.0000**	**41.1219**

3.4 Building Construction & Landscaping - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	4.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0307**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0263	0.2879	0.1922	3.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	33.5978	33.5978	0.0106	0.0000	33.8194
Paving	4.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0307**	**0.2879**	**0.1922**	**3.8000e-004**		**0.0135**	**0.0135**		**0.0124**	**0.0124**	**0.0000**	**33.5978**	**33.5978**	**0.0106**	**0.0000**	**33.8194**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-003	0.0193	0.0193	3.0000e-005		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	2.6809	2.6809	2.3000e-004	0.0000	2.6857
Total	**2.0490**	**0.0193**	**0.0193**	**3.0000e-005**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**2.6809**	**2.6809**	**2.3000e-004**	**0.0000**	**2.6857**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

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	0.3654	1.2005	4.3042	9.5000e-003	0.5316	0.0193	0.5509	0.1428	0.0178	0.1606	0.0000	696.1851	696.1851	0.0203	0.0000	696.6120
Unmitigated	0.3654	1.2005	4.3042	9.5000e-003	0.5316	0.0193	0.5509	0.1428	0.0178	0.1606	0.0000	696.1851	696.1851	0.0203	0.0000	696.6120

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	558.00	558.00	558.00	1,397,411	1,397,411
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	558.00	558.00	558.00	1,397,411	1,397,411

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
City Park	6.88	6.88	6.88	33.00	48.00	19.00	100	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

4.4 Fleet Mix

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	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	38.0150	38.0150	1.7200e-003	3.6000e-004	38.1614
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	130676	38.0150	1.7200e-003	3.6000e-004	38.1614
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**38.0150**	**1.7200e-003**	**3.6000e-004**	**38.1614**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	130676	38.0150	1.7200e-003	3.6000e-004	38.1614
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**38.0150**	**1.7200e-003**	**3.6000e-004**	**38.1614**

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	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	1.9229	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005

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	0.2049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9229**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

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	0.2049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9229**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

SJRC - River West Eaton Trail Extension Project Alternative 5B

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.73	Acre	3.73	162,395.00	0
City Park	0.02	Acre	0.02	1,000.00	0
User Defined Recreational	1.00	User Defined Unit	6.67	290,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 6.67 acres; Perrin Ave + Palm & Nees Parking Lot = 3.73 acres; Recreational Amenities including restroom facility assume 1,000 sq. ft.

Construction Phase - Construction phases specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Off-road Equipment - Equipment specific to project.

Grading - 2.5 miles x 22 feet x 4 in = 3,585 cu yds. of decomposed granite. + 17,460 cu yards of additional soil. = 21,045 cy imported fill.

Trips and VMT - Trips and distance specific to project.

Vehicle Trips - 558 average daily trips

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	300.00	66.00
tblConstructionPhase	NumDays	30.00	51.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	PhaseEndDate	12/30/2019	12/27/2019
tblConstructionPhase	PhaseEndDate	10/30/2019	10/29/2019
tblConstructionPhase	PhaseStartDate	11/30/2019	11/29/2019
tblConstructionPhase	PhaseStartDate	7/31/2019	7/30/2019
tblGrading	AcresOfGrading	25.50	10.00
tblGrading	MaterialImported	0.00	21,045.00
tblLandUse	LandUseSquareFeet	162,478.80	162,395.00
tblLandUse	LandUseSquareFeet	871.20	1,000.00
tblLandUse	LandUseSquareFeet	0.00	290,400.00
tblLandUse	LotAcreage	0.00	6.67
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	6.50
tblTripsAndVMT	HaulingTripLength	20.00	6.50
tblTripsAndVMT	HaulingTripLength	20.00	6.50
tblTripsAndVMT	HaulingTripLength	20.00	6.50
tblTripsAndVMT	HaulingTripLength	20.00	6.50
tblTripsAndVMT	HaulingTripNumber	2,631.00	1,685.00
tblTripsAndVMT	VendorTripNumber	74.00	0.00
tblTripsAndVMT	WorkerTripNumber	45.00	40.00
tblTripsAndVMT	WorkerTripNumber	191.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	38.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	40.00
tblVehicleTrips	ST_TR	1.59	27,900.00
tblVehicleTrips	SU_TR	1.59	27,900.00
tblVehicleTrips	WD_TR	1.59	27,900.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.3227	2.5929	2.0985	3.9600e-003	0.1941	0.1215	0.3156	0.0942	0.1118	0.2060	0.0000	345.7984	345.7984	0.0970	0.0000	347.8352
Total	**2.3227**	**2.5929**	**2.0985**	**3.9600e-003**	**0.1941**	**0.1215**	**0.3156**	**0.0942**	**0.1118**	**0.2060**	**0.0000**	**345.7984**	**345.7984**	**0.0970**	**0.0000**	**347.8352**

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					
2019	2.3227	2.5929	2.0985	3.9600e-003	0.1941	0.1215	0.3156	0.0942	0.1118	0.2060	0.0000	345.7980	345.7980	0.0970	0.0000	347.8348
Total	**2.3227**	**2.5929**	**2.0985**	**3.9600e-003**	**0.1941**	**0.1215**	**0.3156**	**0.0942**	**0.1118**	**0.2060**	**0.0000**	**345.7980**	**345.7980**	**0.0970**	**0.0000**	**347.8348**

	ROG	NOx	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**

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	1.9783	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	41.5735	41.5735	1.8800e-003	3.9000e-004	41.7335
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3267**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**639.0002**	**639.0002**	**0.0196**	**3.9000e-004**	**639.5321**

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	1.9783	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	41.5735	41.5735	1.8800e-003	3.9000e-004	41.7335
Mobile	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0243	0.0243	0.0000	0.0000	0.0244
Total	**2.3267**	**1.0619**	**4.0077**	**8.1600e-003**	**0.4532**	**0.0166**	**0.4698**	**0.1218**	**0.0153**	**0.1371**	**0.0000**	**639.0002**	**639.0002**	**0.0196**	**3.9000e-004**	**639.5321**

	ROG	NOx	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	Earthwork & Grading	Grading	4/23/2019	7/2/2019	5	51	
2	Trenching	Trenching	7/3/2019	7/30/2019	5	20	
3	Building Construction	Building Construction	7/30/2019	10/29/2019	5	66	
4	Paving	Paving	10/30/2019	11/29/2019	5	23	
5	Architectural Coating	Architectural Coating	11/29/2019	12/27/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 444,408; Non-Residential Outdoor: 148,136 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Earthwork & Grading	Rollers	2	8.00	80	0.38
Earthwork & Grading	Plate Compactors	2	8.00	8	0.43
Earthwork & Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	0	0.00	226	0.29
Building Construction	Forklifts	0	0.00	89	0.20
Building Construction	Generator Sets	0	0.00	84	0.74
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Earthwork & Grading	Paving Equipment	1	8.00	130	0.36
Earthwork & Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Earthwork & Grading	Graders	1	8.00	174	0.41
Earthwork & Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Earthwork & Grading	Rubber Tired Loaders	2	8.00	199	0.36
Earthwork & Grading	Other Construction Equipment	2	8.00	171	0.42
Earthwork & Grading	Scrapers	0	0.00	361	0.48
Building Construction	Welders	0	0.00	46	0.45
Earthwork & Grading	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Trenchers	1	8.00	80	0.50
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Plate Compactors	2	8.00	8	0.43
Building Construction	Off-Highway Trucks	1	8.00	400	0.38
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Rubber Tired Loaders	1	8.00	199	0.36
Paving	Other Construction Equipment	1	8.00	171	0.42

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
Trenching	4	40.00	0.00	0.00	10.80	7.30	6.50	LD_Mix	HDT_Mix	HHDT
Earthwork & Grading	18	40.00	0.00	1,685.00	10.80	7.30	6.50	LD_Mix	HDT_Mix	HHDT
Building Construction	3	40.00	0.00	0.00	10.80	7.30	6.50	LD_Mix	HDT_Mix	HHDT
Paving	6	40.00	0.00	0.00	10.80	7.30	6.50	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	40.00	0.00	0.00	10.80	7.30	6.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Earthwork & Grading - 2019

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					0.1604	0.0000	0.1604	0.0852	0.0000	0.0852	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1664	1.7441	1.3040	2.1900e-003		0.0869	0.0869		0.0800	0.0800	0.0000	196.1750	196.1750	0.0617	0.0000	197.4713
Total	**0.1664**	**1.7441**	**1.3040**	**2.1900e-003**	**0.1604**	**0.0869**	**0.2473**	**0.0852**	**0.0800**	**0.1652**	**0.0000**	**196.1750**	**196.1750**	**0.0617**	**0.0000**	**197.4713**

3.2 Earthwork & Grading - 2019

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	9.4000e-003	0.0625	0.1601	2.1000e-004	4.7000e-003	9.7000e-004	5.6600e-003	1.2900e-003	8.9000e-004	2.1800e-003	0.0000	18.5559	18.5559	1.6000e-004	0.0000	18.5592
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	3.4900e-003	0.0339	1.0000e-004	8.1500e-003	6.0000e-005	8.2100e-003	2.1700e-003	5.0000e-005	2.2200e-003	0.0000	6.5207	6.5207	3.1000e-004	0.0000	6.5271
Total	**0.0121**	**0.0660**	**0.1940**	**3.1000e-004**	**0.0129**	**1.0300e-003**	**0.0139**	**3.4600e-003**	**9.4000e-004**	**4.4000e-003**	**0.0000**	**25.0765**	**25.0765**	**4.7000e-004**	**0.0000**	**25.0863**

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					0.1604	0.0000	0.1604	0.0852	0.0000	0.0852	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1664	1.7441	1.3040	2.1900e-003		0.0869	0.0869		0.0800	0.0800	0.0000	196.1748	196.1748	0.0617	0.0000	197.4710
Total	**0.1664**	**1.7441**	**1.3040**	**2.1900e-003**	**0.1604**	**0.0869**	**0.2473**	**0.0852**	**0.0800**	**0.1652**	**0.0000**	**196.1748**	**196.1748**	**0.0617**	**0.0000**	**197.4710**

3.2 Earthwork & Grading - 2019

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	9.4000e-003	0.0625	0.1601	2.1000e-004	4.7000e-003	9.7000e-004	5.6600e-003	1.2900e-003	8.9000e-004	2.1800e-003	0.0000	18.5559	18.5559	1.6000e-004	0.0000	18.5592
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	3.4900e-003	0.0339	1.0000e-004	8.1500e-003	6.0000e-005	8.2100e-003	2.1700e-003	5.0000e-005	2.2200e-003	0.0000	6.5207	6.5207	3.1000e-004	0.0000	6.5271
Total	**0.0121**	**0.0660**	**0.1940**	**3.1000e-004**	**0.0129**	**1.0300e-003**	**0.0139**	**3.4600e-003**	**9.4000e-004**	**4.4000e-003**	**0.0000**	**25.0765**	**25.0765**	**4.7000e-004**	**0.0000**	**25.0863**

3.3 Trenching - 2019

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	0.0124	0.1173	0.0714	1.8000e-004		5.8600e-003	5.8600e-003		5.4100e-003	5.4100e-003	0.0000	15.6110	15.6110	4.8100e-003	0.0000	15.7119
Total	**0.0124**	**0.1173**	**0.0714**	**1.8000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4100e-003**	**5.4100e-003**	**0.0000**	**15.6110**	**15.6110**	**4.8100e-003**	**0.0000**	**15.7119**

3.3 Trenching - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

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	0.0124	0.1173	0.0714	1.8000e-004		5.8600e-003	5.8600e-003		5.4100e-003	5.4100e-003	0.0000	15.6110	15.6110	4.8100e-003	0.0000	15.7119
Total	**0.0124**	**0.1173**	**0.0714**	**1.8000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4100e-003**	**5.4100e-003**	**0.0000**	**15.6110**	**15.6110**	**4.8100e-003**	**0.0000**	**15.7119**

3.3 Trenching - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.3700e-003	0.0133	4.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.5571	2.5571	1.2000e-004	0.0000	2.5597
Total	**1.0600e-003**	**1.3700e-003**	**0.0133**	**4.0000e-005**	**3.2000e-003**	**2.0000e-005**	**3.2200e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**2.5571**	**2.5571**	**1.2000e-004**	**0.0000**	**2.5597**

3.4 Building Construction - 2019

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	0.0411	0.4555	0.2627	7.5000e-004		0.0166	0.0166		0.0153	0.0153	0.0000	67.6593	67.6593	0.0214	0.0000	68.1088
Total	**0.0411**	**0.4555**	**0.2627**	**7.5000e-004**		**0.0166**	**0.0166**		**0.0153**	**0.0153**	**0.0000**	**67.6593**	**67.6593**	**0.0214**	**0.0000**	**68.1088**

3.4 Building Construction - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

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	0.0411	0.4555	0.2627	7.5000e-004		0.0166	0.0166		0.0153	0.0153	0.0000	67.6592	67.6592	0.0214	0.0000	68.1087
Total	**0.0411**	**0.4555**	**0.2627**	**7.5000e-004**		**0.0166**	**0.0166**		**0.0153**	**0.0153**	**0.0000**	**67.6592**	**67.6592**	**0.0214**	**0.0000**	**68.1087**

3.4 Building Construction - 2019

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	3.4900e-003	4.5200e-003	0.0439	1.3000e-004	0.0106	8.0000e-005	0.0106	2.8000e-003	7.0000e-005	2.8800e-003	0.0000	8.4385	8.4385	4.0000e-004	0.0000	8.4468
Total	**3.4900e-003**	**4.5200e-003**	**0.0439**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0106**	**2.8000e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**8.4385**	**8.4385**	**4.0000e-004**	**0.0000**	**8.4468**

3.5 Paving - 2019

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	0.0192	0.2011	0.1800	2.7000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	24.6554	24.6554	7.8000e-003	0.0000	24.8192
Paving	4.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0240**	**0.2011**	**0.1800**	**2.7000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**24.6554**	**24.6554**	**7.8000e-003**	**0.0000**	**24.8192**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

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	0.0192	0.2011	0.1800	2.7000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	24.6554	24.6554	7.8000e-003	0.0000	24.8192
Paving	4.8900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0240**	**0.2011**	**0.1800**	**2.7000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**24.6554**	**24.6554**	**7.8000e-003**	**0.0000**	**24.8192**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	1.5700e-003	0.0153	4.0000e-005	3.6800e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9407	2.9407	1.4000e-004	0.0000	2.9436
Total	**1.2200e-003**	**1.5700e-003**	**0.0153**	**4.0000e-005**	**3.6800e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9407**	**2.9407**	**1.4000e-004**	**0.0000**	**2.9436**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0598					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0598**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0598					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0598**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.4400e-003	0.0140	4.0000e-005	3.3600e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.6850	2.6850	1.3000e-004	0.0000	2.6876
Total	**1.1100e-003**	**1.4400e-003**	**0.0140**	**4.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.6850**	**2.6850**	**1.3000e-004**	**0.0000**	**2.6876**

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	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741
Unmitigated	0.3484	1.0619	4.0076	8.1600e-003	0.4532	0.0166	0.4698	0.1218	0.0153	0.1371	0.0000	597.4024	597.4024	0.0177	0.0000	597.7741

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	558.00	558.00	558.00	1,191,248	1,191,248
Parking Lot	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
Total	558.00	558.00	558.00	1,191,248	1,191,248

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409687	0.062677	0.156376	0.176111	0.050971	0.007837	0.019872	0.103412	0.001778	0.001574	0.006496	0.000897	0.002312

4.4 Fleet Mix

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	41.5735	41.5735	1.8800e-003	3.9000e-004	41.7335
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	41.5735	41.5735	1.8800e-003	3.9000e-004	41.7335
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	142908	41.5735	1.8800e-003	3.9000e-004	41.7335
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**41.5735**	**1.8800e-003**	**3.9000e-004**	**41.7335**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	142908	41.5735	1.8800e-003	3.9000e-004	41.7335
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**41.5735**	**1.8800e-003**	**3.9000e-004**	**41.7335**

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	1.9783	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	1.9783	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005

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	0.2060					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Total	**1.9783**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

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	0.2060					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	9.0000e-005
Total	**1.9783**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0243	0.0000	0.0000	0.0244
Unmitigated	0.0243	0.0000	0.0000	0.0244

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0238296	0.0243	0.0000	0.0000	0.0244
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0243**	**0.0000**	**0.0000**	**0.0244**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Appendix DD
County Health Services Landfill Closure Letters

THE COUNTY OF FRESNO 1856

Health Services Agency

file

George Bleth
Agency Director

March 2, 1994

Mr. Victor Roznovsky
Mr. Stan Spano
Riverview Estates
344 West Nees Avenue
Fresno, CA 93711

Dear Sirs:

Subject: Proposed City of Fresno Park Development
San Joaquin River Bluff Area
Fresno, California

Our office has reviewed the January 18, 1994 workplan, including supporting documents, regarding the proposed City of Fresno park development project located adjacent to the Kepco-Pinedale Disposal Site. At this time we have no objections to the continuation of the project as described in this workplan. Please ensure that you contact our office when you have finished the excavation portion of the project so that we may conduct an inspection at that time. All newly excavated material shall be stockpiled onsite for our inspection and then should be disposed of or appropriately recycled.

If any waste material other than inert debris, as described in your workplan, is excavated then you will need to discontinue the work until such time that our office can be contacted. We also recommend that all confirmation field exploration test pits, as outlined in the workplan, extend to a depth of ten (10) feet. This will help insure that no waste material is left on the site.

Please be aware that due to the close proximity of this project to the Kepco-Pinedale Disposal Site you or any future property owners may be required to conduct additional environmental monitoring. Future investigations may include monitoring of methane and/or groundwater.

Gary Carozza, Director
Community Health Department
1221 Fulton Mall • P.O. Box 11867 • Fresno, California 93775
Phone 209•445•0666

Please contact myself or Vince Mendes at (209)445-3380 if you have any questions.

Sincerely,

Peggy Wilkinson

Peggy Wilkinson
Supervising Environmental Health Analyst

cc: Vince Mendes, Environmental Health System
David Melendrez, Closure & Remediaton Branch, California Integrated Waste Management Board
Mike Delmanowski, Twining Laboratories, Inc.

THE COUNTY OF FRESNO 1856

Health Services Agency

George Bleth
Agency Director

March 16, 1994

Mr. Victor Roznovski
Mr. Stan Spano
Riverview Estates
344 West Nees Avenue
Fresno, CA 93711

Dear Sirs:

Subject: Kepco-Pinedale Disposal Site

Our office has reviewed your workplan dated February 17, 1994 regarding the Kepco-Pinedale Disposal Site. Enclosed for your review also are comments from the Integrated Waste Management Board. For your convenience I have combined below both the Integrated Waste Management Board's and our concerns.

1. Please provide our office with a timeframe in which the site fencing will be completed. Both our office and the Board feel it is necessary to install the fencing as soon as possible to prevent any unauthorized access to the site. We recommend that the fence be constructed to a height of at least six (6) feet. A site map delineating the fence boundaries will also need to be submitted.

2. A more comprehensive plan on how the previously identified landfill fire "hot spots" will be further assessed is needed. A timeframe of when this assessment will commence and be completed is required. Please provide a detailed plan on how you will examine these "hot spots", as well as a discussion of various fire suppression options that will be considered.

3. Please review the Board's comments regarding the use of infrared photography in assessing the extent of the fire. Feel free to contact the Board staff if you have any questions regarding this technique.

Gary Carozza, Director
Community Health Department
1221 Fulton Mall • P.O. Box 11867 • Fresno, California 93775
Phone 209-445-0666

We request that you contact our office as soon as possible if you have any questions regarding the above listed requirements. Both our office and the Board believe it is in everyone's best interest to move forward on these issues quickly. Please submit, by March 31, 1994, an addendum to your workplan addressing the above listed concerns.

Feel free to contact me at (209)445-3380 if you have any questions.

Sincerely,

Peggy Wilkinson

Peggy Wilkinson
Supervising Environmental Health Analyst

PW:pw

Enclosure

cc: Tim Casagrande, Division Manager
Todd Thalhamer, California Integrated Waste Management Board
Keith Cambridge, California Integrated Waste Management Board

Health Services Agency

George Bleth
Agency Director

July 7, 1994

Riverview Estates
c/o Stan Spano & Vic Roznovsky
7545 N. Del Mar, #206
Fresno, CA 93711

Dear Gentlemen:

Subject: Waste Removal from Proposed City Park Site

On June 28, 1994, an inspection was conducted by this office at the excavation site for the proposed city park. This inspection was requested by Twining Laboratories. Present at the inspection were Vic Roznovsky, Riverview Estates; Clay Rodgers, Twining Laboratories and Vincent Mendes of this office.

The purpose of the inspection was to verify that the removal of waste had extended down to or beyond native soil. This inspection pertained only to the eastern half of the excavation site. Several test pits were prepared at different locations throughout the excavation to demonstrate that native soil had been reached. Photographs were taken to document the test pits and their locations, and the extent of the overall excavation.

Clay Rodgers stated that it was the intent of the operators to "turn over" the remaining soil along the bluff and use it as fill in the excavated area. Any additional waste encountered at that time would be removed. It was also stated that the operators wanted to begin filling the eastern half of the site with the soil that had been removed and separated from any waste.

This office is satisfied that the owner/operator has excavated the eastern half of the proposed city park site and has sufficiently removed all waste down to native soil. The operator may begin filling in the site under the following conditions:

- Any waste encountered in the "turning over" of the soil along the edge of the bluff shall be removed.

- Fill soil shall meet appropriate engineering specifications.

- An inspection is performed by this Department of the western half of the site when all excavation has been completed.

If you have any questions, please contact me at (209) 445-3380.

Sincerely,

Peggy Wilkinson

Peggy Wilkinson
Supervising Environmental Health Analyst
Environmental Health System

PW:mo

THE COUNTY OF FRESNO 1856

Health
Services
Agency

George Bleth
Agency Director

July 25, 1994

Riverview Estates
c/o Vic Roznovsky
Stan Spano
7545 N. Del Mar, #206
Fresno, CA 93711

Dear Gentlemen:

Subject: Waste Removal from Proposed City Park Site

On July 18, 1994, an inspection was conducted by this office at the excavation site for the proposed city park. This inspection was requested by Twining Laboratories. Present at the inspection were Vic Roznovsky and Hubert Hoffman of Riverview Estates, Jack Collins of Twining Laboratories, and Vincent Mendes with this office.

The purpose of this inspection was to verify that the removal of waste had extended down to or beyond native soil in the western portion of the excavation. Eight (8) test pits were prepared at different locations throughout the excavation to demonstrate that native soil had been reached. Photographs were taken to document the test pits and their locations, and the extent of the overall excavation.

At the time of the inspection, the excavation was not completed all the way to the west. The area towards the furthest portion west of the excavation still contained waste and the owner/operator stated that this area will be excavated and the waste removed.

This office is satisfied that the owner/operator has excavated that portion of the western end of the proposed city park site, that was inspected, and has sufficiently removed all waste down to native soil. The operator may begin filling in this portion of the site under the following conditions:

- Fill soil shall meet appropriate engineering specifications.

Gary M. Carozza, Director
Community Health Department
1221 Fulton Mall • P.O. Box 11867 • Fresno, California 93775
Phone 209-445-0666

- An inspection is performed by this Department of the remaining western portion of the site. This inspection shall not only demonstrate that native soil has been reached but that a definite separation between this area and that portion of the old Pinedale Landfill exists.

If you have any questions, please contact me at (209) 445-3380.

Sincerely,

Peggy Wilkinson

Peggy Wilkinson
Supervising Environmental Health Analyst
Environmental Health System

PW:mo

May 3, 2002

TL 391-0172-03

Mr. Ed Bergthold
Riverview Estates
344 East Nees Avenue
Fresno, California 93711

Subject: Removal of Waste
Proposed City Park Site
Near the intersection of North Palm and West Nees Avenues

At your request, The Twining Laboratories, Inc. (Twining) has prepared this letter to discusss the removal of landfill waste from the above-referenced site. In 1994, Twining was present during the removal of landfill waste material from the proposed City Park Site. In addition, a representative of the Fresno County Health Services Agency (FCHSA), the lead regulatory agency for the work, was also present for the duration of the excavation. Excavation was continued until all waste was removed and native soil was encountered. The FCHSA prepared a letter, dated July 25, 1994, which stated, in part, that:

> *"This office is satisfied that the owner/operator has excavated that portion of the western end of the proposed city park site, that was inspected, and has sufficiently removed all waste down to native soil. The operator may begin filling in this portion of the site . . . "*

Based on the FCHSA letter, the property owner backfilled the area with approved, imported fill to the surface. Based on our observations, and on the conclusion of the FCHSA, it is Twining's opinion that all the waste was removed from the site.

LIMITATIONS

Twining's conclusions in this letter represent the site conditions at the conclusion of the waste removal in 1994.

CLOSING

If you have any questions regarding this project, please contact me at (559) 268-7021.

Respectfully submitted,

THE TWINING LABORATORIES, INC.

Walt Plachta, RG, REA II
Senior Geologist

May 3, 2002 A58428.01-03

Mr. Ed Bergthold
Riverview Estates
344 East Nees Avenue
Fresno, California 93711

Subject: Final Soils Report
City Park Development
Fresno, California

Dear Mr. Bergthold:

This report presents the results of a final soils investigation for the above referenced project. The contents of this report include the purpose and scope of our services, the documents reviewed, any changes in the anticipated construction, a discussion of the results, and finally the conclusions regarding the existing construction.

PURPOSE AND SCOPE

The purpose of the investigation was to review the geotechnical engineering investigation report, the update soils report, and the compaction test reports to determine if the project was constructed in accordance with our recommendations. Twining has conducted a geotechnical engineering investigation and in-place density testing services for this project prior to this investigation. The intent of this investigation was to comply with the requirements of the Uniform Building Code (UBC), Section 3315 "Final Reports".

The tasks undertaken to achieve this purpose were:

I. Review the following documents:

1. The Geotechnical Engineering Report, Bluff Zones I, II, & III, Tract 4487, dated March 21, 1991, our reference TL 490-0017-01;

2. The Geotechnical Engineering Report for the 4.6 acre parcel (west portion of the site), dated August 13, 1991, our reference TL 490-0017-03 (referred to hereinafter as the Geotechnical Report);

3. The Geotechnical Report Update, for the project dated December 2, 1999 our reference A58428.01-02 (referred to hereinafter as the Update Report);

3. Results of In-Place Density Tests - Embankment Fill Soils reports, dated September 6, 1994 and January 5, 1995 (referred to hereinafter as the Compaction Reports);

II. A site reconnaissance was conducted to note the finished conditions at the site.

III. This report was prepared to present our findings and conclusions.

SITE OBSERVATIONS

On May 3, 2002, Mr. Scott Krauter (Twining) visited the site and observed the Park Site and surrounding areas. At the time of the visit, the site was fenced so observations were made from the park perimeter. The facility appeared to be finished with pavements, curbs and gutters completed. The park areas was landscaped and covered with green irrigated lawn.

ANTICIPATED CONSTRUCTION CHANGES

The completed park and grading existing at the time of this report is similar to that assumed in the 1999 Geotechnical Update Report.

DISCUSSION

The compaction test reports indicate that about 30 feet of approved imported engineered fill was placed over undisturbed native soils exposed after landfill materials were removed. As the import fill was placed, five hundred eighteen (518) tests were taken between June 29 and November 30, 1994. The tests all exceeded the minium compaction of 92 percent recommended in the project Geotechnical Report.

CONCLUSIONS

Based on review of the available documents, site observations, the Geotechnical Engineering Investigation Report, and the Update Report we present the following conclusion. To the best of our knowledge, the site preparation, fill placement, support of foundations, construction, and final site grading is in accordance with the intent of our Geotechnical Engineering Report and Update Geotechnical Report, and UBC Chapter 33.

LIMITATIONS

It should be noted that the documents were not checked for conformance to governing codes, or other client and governmental requirements. We make no representations as to the accuracy of dimensions, measurements, calculations or any portion of the design.

CLOSING

We appreciate the opportunity to be of service to Riverview Estates. If you have any questions regarding the information presented herein, or if we can be of further assistance, please contact our office at your convenience.

Sincerely,
THE TWINING LABORATORIES, INC.

PROFESSIONAL ENGINEER
SCOTT KRAUTER
REGISTERED
No. C049956
No. GE-2358
Exp. 12/31/04
CIVIL-GEOTECHNICAL
STATE OF CALIFORNIA

Scott W. Krauter, RCE, RGE
Manager
Geotechnical Engineering Division

SWK\
F:\ENG\Geotech\A5842801.03.wpd

Appendix EE
Supplemental Traffic Report

MEMORANDUM

AECOM
999 W. Town and Country Road
Orange, California 92868
Phone: (714) 567-2400
Fax: (714) 567-2594

To: Andy Benelli, City of Fresno

From: Noel V. Casil, PE, TE, PTOE, AECOM
Raizalyn Chau, TE, AECOM
David Young, AECOM

Date: August 14, 2017

Subject: Supplemental Traffic Study and Response to Comments for River West Eaton Trail Extension Project

INTRODUCTION

The purpose of this technical memorandum is to present updated and additional analysis performed for the proposed River West Eaton Trail Extension Project as a supplement to the March, 2016 Traffic Study. The updated and additional analysis is a result of comments received during the public review of the project's Environmental Document.

The updated and additional analysis were performed using year 2017 traffic counts instead of year 2014 traffic counts used in the previous study and additional analysis was conducted at two intersection location and one roadway segment location which was not included in the previous study. In addition, this memorandum includes analysis for an additional alternative. The additional alternative is Alternative 5B which provides access to the River West Eaton Trail via Spano Park. **Figure 1** illustrates the location of the access for Alternative 5B. The additional analysis locations are as follows:

<u>Intersections</u>

- Palm Avenue and Nees Avenue; and
- Del Mar Avenue and Audubon Drive.

<u>Roadway Segment</u>

- Palm Avenue south of Nees Avenue.

The following sections of this technical memorandum discuss the updated and additional analysis for the proposed Project and evaluates if the changes to the Project results in a significant impact.

Figure 1
Alternative 5B (Spano Park Access)

TRIP GENERATION

As discussed in the March 2016 Traffic Study, no ITE trip generation rates currently exists specific to walking trails. For purposes of developing trip generation for the proposed project and evaluate traffic impacts, the proposed project parking supply (Perrin Avenue parking) was used as the basis of developing trip generation assumption for the project. The trip generation for Alternative 5B utilizes the same method as the other project alternatives.

Table 1 summarizes the trip generation for the proposed Project including the new proposed Alternative 5B. As shown in Table 1, Alternative 5B is projected to generate 240 vehicles per day with 45 vehicles during the AM peak hour and 55 vehicles during the PM peak hour.

Table 1
Trip Generation Estimate

Land Use	Qty.	Total Trips Generated								
		Daily			AM			PM		
		Total	In	Out	Total	In	Out	Total	In	Out
Proposed Project (Perrin Avenue Access)	53 spaces	318	159	159	60	40	20	73	53	20
Alternative 1 (Riverview Drive Access)	40 spaces	240	120	120	45	30	15	55	40	15
Alternative 5 (Palm & Nees Access)	40 spaces	240	120	120	45	30	15	55	40	15
Alternative 5B (Spano Park Access)	40 spaces	240	120	120	45	30	15	55	40	15

Note: Proposed Project assumed daily trip generation estimates based on site parking capacity of 53 spaces and assumed 3 times parking turnover during the day. Alternative 1 and Alternative 5 assumed daily trip generation estimates based on site parking capacity of 40 spaces and assumed 3 times parking turnover during the day and also assumes that the 53-space Perrin Avenue parking is constructed.

TRIP DISTRIBUTION

The trip distribution for the Proposed Project and Project Alternatives 1 and 5 are the same as discussed in the March 2016 Traffic Study. Since Alternative 5B is in the generally in the same location as Alternative 5, the trip distribution for Alternatives 5 and 5B are the same. The general trip distribution is 20% utilizing Audubon Drive, 40% utilizing Nees Avenue and 40% utilizing Palm Avenue.

EXISTING AND YEAR 2025 TRAFFIC VOLUMES

Existing Traffic Volumes

As indicated in the introduction of this technical memorandum, new traffic counts were obtained for the study roadway segments and intersections. Roadway segment traffic counts were collected for 24-hours for three days; Wednesday, 7/5/2017, Thursday, 7/6/2017 and Friday, 7/7/2017. Intersection traffic counts were conducted during the AM period of 7 a.m. to 9 a.m. and the PM period of 4 p.m. to 6 p.m. on Thursday, 7/6/2017. Based on the traffic counts, existing (year 2017) average daily traffic (ADT) volume ranges from 158 vehicles per day to 32,423 vehicles per day. Traffic count worksheets are provided in Attachment A.

Year 2025 Traffic Volumes

The future year traffic volumes were forecast using the same method discussed in the March 2016 Traffic Study. Year 2025 traffic volumes were developed by applying annual traffic growth factors to existing traffic volumes. In consultation with Fresno Council of Governments (COG) staff, future traffic projections were developed using Fresno COG Year 2010 and 2035 traffic model forecasts within the Project study area. Year 2025 base condition average daily traffic (ADT) volumes range from 210 vehicles per day to 42,798 vehicles per day.

VEHICLE MILES TRAVELLED

Vehicle miles travelled (VMT) for the Project and Project Alternatives 1, 5 and 5B were calculated and are summarized in Table 2. As shown in Table 2, the proposed Project with the Perrin Parking only is anticipated to generate 2,639 vehicle miles travelled which is the least when compared to Project Alternatives 1, 5, and 5B which generates approximately 3,794 to 3,887 vehicle miles travelled. This is primarily attributed to the assumption that the Perrin Parking is built in addition to the parking proposed for Alternative 1, 5 and 5B.

Table 2
Vehicle Miles Travelled (VMT) Analysis Results

Project Alternatives	ADT	Trip Length (miles)	VMT	VMT Total
Proposed Project (Perrin Avenue Access)	318	8.3	2,639	2,639
Alternative 1 (Riverview Drive Access)	318	8.3	2,639	3,887
	240	5.2	1,248	
Alternative 5 (Palm Avenue & Nees Avenue Access)	318	8.3	2,639	3,839
	240	5.0	1,200	
Alternative 5B (Spano Park Access)	318	8.3	2,639	3,794
	240	4.8	1,154	

SEGMENT ANALYSIS

As discussed in the March 2016 Traffic Study, the assessment of roadway segment level-of-service (LOS) is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. For analysis purposes and consistent with the City of Fresno Traffic Impact Study Guidelines requirement, the roadway segment assessment was based on the Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas. Table 2 provides the Generalized Peak Hour Directional Volumes Ranges for Urbanized Areas and LOS categories that will be used in the evaluation of roadway segment performance and in determining project significant impacts.

Table 2
Generalized Peak Hour Directional Volume Ranges for Urbanized Areas

Uninterrupted Flow Facilities (Freeways)					
Lanes	Median	Level of Service (LOS)			
		B	C	D	E
2	Divided	2,260	3,020	3,660	3,940
3	Divided	3,360	4,580	5,500	6,080
4	Divided	4,500	6,080	7,320	8,220
5	Divided	5,660	7,680	9,220	10,360
6	Divided	7,900	10,320	12,060	12,500
Interrupted Flow Facilities (Non-State Roadways) Class I (40 mph or higher posted speed limit)					
Lanes	Median	Level of Service (LOS)			
		B	C	D	E
1	Undivided	*	750	790	**
2	Divided	*	1,720	1,800	**
3	Divided	*	2,650	2,720	**
4	Divided	*	3,570	3,640	**
Interrupted Flow Facilities (Non-State Roadways) Class II (35 mph or slower posted speed limit)					
Lanes	Median	Level of Service (LOS)			
		B	C	D	E
1	Undivided	*	330	680	**
2	Divided	*	660	1,470	**
3	Divided	*	1,050	2,270	**
4	Divided	*	1,450	3,050	**
Source: Florida Department of Transportation Table 7, Generalized Peak Hour Directional Volumes for Urbanized Areas (Modified for Non-State Roadways)					

Table 3 summarizes the results of the roadway segment LOS analysis under all traffic conditions analyzed as well as compares the resulting LOS under the project alternative to the LOS under base condition.

Existing (Year 2017) Traffic Condition

Under Existing (year 2017) traffic condition, the study segments are currently operating at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue during the PM peak hour in the eastbound direction where the roadway segment is currently operating at LOS E.

Existing (Year 2017) Plus Project Condition

Under Existing (year 2017) Plus Project traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue during the PM peak hour in the eastbound direction where the roadway segment is anticipated to operate at LOS E.

Year 2025 Base Condition

Under Year 2025 Base traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue which is anticipated to operate at LOS E during the AM peak hour in the westbound direction and in the eastbound direction during the PM peak hour.

Year 2025 Base Plus Project Condition

Under Year 2025 Base Plus Project traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue which is anticipated to operate at LOS E during the AM peak hour in the westbound direction and in the eastbound direction during the PM peak hour.

Year 2025 Plus Project Alternative 1 Condition

Under Year 2025 Plus Project Alternative 1 traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue which is anticipated to operate at LOS E during the AM peak hour in the westbound direction and in the eastbound direction during the PM peak hour.

Year 2025 Plus Project Alternative 5 Condition

Under Year 2025 Plus Project Alternative 5 traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue which is anticipated to operate at LOS E during the AM peak hour in the westbound direction and in the eastbound direction during the PM peak hour.

Year 2025 Plus Project Alternative 5B Condition

Under Year 2025 Plus Project Alternative 5B traffic condition, the study segments are anticipated to operate at LOS C or better except along Audubon Drive between SR-41 and Palm Avenue which is anticipated to operate at LOS E during the AM peak hour in the westbound direction and in the eastbound direction during the PM peak hour.

Table 3
Roadway Segment Level-of-Service (LOS) Summary

#	Location	# of Lanes	Direction	Existing (Year 2017) Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Existing Plus Project Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	27,750	576	B	865	B	28,068	616	B	918	B	No
			SB		457	B	1,036	B		477	B	1,056	B	No
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	158	8	C	6	C	476	28	C	26	C	No
			SB		2	C	6	C		42	C	59	C	No
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	14,659	424	C	929	E	14,659	424	C	929	E	No
			WB		698	C	520	C		698	C	520	C	No
4	Audubon Drive East of SR-41	2/D	EB	16,313	513	C	958	C	16,313	513	C	958	C	No
			WB		690	C	605	C		690	C	605	C	No
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	1,748	27	C	55	C	1,748	27	C	55	C	No
			SB		73	C	77	C		73	C	77	C	No
6	Palm Avenue South of Nees Avenue	2/D	NB	32,423	679	C	1,177	C	32,423	679	C	1,177	C	No
			SB		930	C	915	C		930	C	915	C	No

#	Location	# of Lanes	Direction	Year 2025 Base Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Year 2025 Plus Project Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	36,630	760	B	1,142	B	36,948	800	B	1,195	B	No
			SB		603	B	1,368	B		623	B	1,388	B	No
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	210	11	C	8	C	528	31	C	28	C	No
			SB		3	C	8	C		43	C	61	C	No
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	18,177	526	C	1,152	E	18,177	526	C	1,152	E	No
			WB		921	E	686	C		921	E	686	C	No

Table 3
Roadway Segment Level-of-Service (LOS) Summary

#	Location	# of Lanes	Direction	Year 2025 Base Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Year 2025 Plus Project Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
4	Audubon Drive East of SR-41	2/D	EB	20,228	636	C	1,188	C	20,228	636	C	1,188	C	No
			WB		911	C	799	C		911	C	799	C	No
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	2,168	33	C	68	C	2,168	33	C	68	C	No
			SB		91	C	95	C		91	C	95	C	No
6	Palm Avenue South of Nees Avenue	2/D	NB	42,798	896	C	1,554	C	42,798	896	C	1,554	C	No
			SB		1,228	C	1,208	C		1,228	C	1,208	C	No

#	Location	# of Lanes	Direction	Year 2025 Base Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Year 2025 Plus Project Alternative 1 Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	36,630	760	B	1,142	B	36,948	800	B	1,195	B	No
			SB		603	B	1,368	B		623	B	1,388	B	No
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	210	11	C	8	C	528	31	C	28	C	No
			SB		3	C	8	C		43	C	61	C	No
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	18,177	526	C	1,152	E	18,417	541	C	1,167	E	No
			WB		921	E	686	C		951	E	726	C	No
4	Audubon Drive East of SR-41	2/D	EB	20,228	636	C	1,188	C	20,468	651	C	1,203	C	No
			WB		911	C	799	C		941	C	839	C	No
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	2,168	33	C	68	C	2,408	63	C	108	C	No
			SB		91	C	95	C		106	C	110	C	No
6	Palm Avenue South of Nees Avenue	2/D	NB	42,798	896	C	1,554	C	42,798	896	C	1,554	C	No
			SB		1,228	C	1,208	C		1,228	C	1,208	C	No

Table 3
Roadway Segment Level-of-Service (LOS) Summary

#	Roadway Segment Location	# of Lanes	Direction	Year 2025 Base Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Year 2025 Plus Project Alternative 5 Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	36,630	760	B	1,142	B	36,948	800	B	1,195	B	No
			SB		603	B	1,368	B		623	B	1,388	B	No
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	210	11	C	8	C	528	31	C	28	C	No
			SB		3	C	8	C		43	C	61	C	No
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	18,177	526	C	1,152	E	18,225	529	C	1,155	E	No
			WB		921	E	686	C		927	E	694	C	No
4	Audubon Drive East of SR-41	2/D	EB	20,228	636	C	1,188	C	20,276	639	C	1,191	C	No
			WB		911	C	799	C		917	C	807	C	No
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	2,168	33	C	68	C	2,168	33	C	68	C	No
			SB		91	C	95	C		91	C	95	C	No
6	Palm Avenue South of Nees Avenue	2/D	NB	42,798	896	C	1,554	C	42,894	908	C	1,570	C	No
			SB		1,228	C	1,208	C		1,234	C	1,214	C	No

#	Roadway Segment Location	# of Lanes	Direction	Year 2025 Base Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Year 2025 Plus Project Alternative 5B Condition ADT	AM Peak Hour Volume	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour LOS	Significant Impact?
1	SR-41 between Fresno-Madera County Line and Avenue 12	2/D	NB	36,630	760	B	1,142	B	36,948	800	B	1,195	B	No
			SB		603	B	1,368	B		623	B	1,388	B	No
2	SR-41 East Frontage Road (Cobb Ranch Road) north of Vin Rose Lane	1/U	NB	210	11	C	8	C	528	31	C	28	C	No
			SB		3	C	8	C		43	C	61	C	No
3	Audubon Drive between SR-41 and Palm Avenue	1/U	EB	18,177	526	C	1,152	E	18,225	529	C	1,155	E	No
			WB		921	E	686	C		927	E	694	C	No

Table 3
Roadway Segment Level-of-Service (LOS) Summary

Roadway Segment		# of Lanes	Direction	Year 2025 Base Condition					Year 2025 Plus Project Alternative 5B Condition					Significant Impact?
#	Location			ADT	AM Peak Hour		PM Peak Hour		ADT	AM Peak Hour		PM Peak Hour		
					Volume	LOS	Volume	LOS		Volume	LOS	Volume	LOS	
4	Audubon Drive East of SR-41	2/D	EB	20,228	636	C	1,188	C	20,276	639	C	1,191	C	No
			WB		911	C	799	C		917	C	807	C	No
5	Del Mar Avenue between Audubon Drive and Riverview Drive	1/U	NB	2,168	33	C	68	C	2,168	33	C	68	C	No
			SB		91	C	95	C		91	C	95	C	No
6	Palm Avenue South of Nees Avenue	2/D	NB	42,798	896	C	1,554	C	42,894	908	C	1,570	C	No
			SB		1,228	C	1,208	C		1,234	C	1,214	C	No

Determination of Significant Impact at Study Roadway Segments
According to the City of Fresno Traffic Impact Study Guidelines, a project is considered to have an individually significant impact on the operation of an intersection if the addition traffic generated from the proposed project results in any of the following conditions:

- Triggers an intersection operating at acceptable level-of-service (LOS D or better) to operate at unacceptable levels of service (LOS E or F);
- Triggers an intersection operating at unacceptable level-of-service (LOS E) to operate at LOS F; or
- Increases the average delay for a study intersection that is already operating at unacceptable level-of-service.

Since the City of Fresno Traffic Impact Study Guidelines does not provide for specific significance criteria for roadway segments, first two conditions described above were used to evaluate roadway segment impacts.

Table 3 above provides a comparison of the resulting LOS under the project alternatives to Existing (year 2017) and Year 2025 Base traffic conditions and are summarized below:

Existing (Year 2017) Plus Project Condition
As shown in Table 3, the Project does not significantly impact the study roadway segments under Existing (year 2017) Plus Project traffic condition. Majority of the study segments are anticipated to operate at LOS C with the additional traffic generated by the Project. The Audubon Drive between SR-41 and Palm Avenue is anticipated to operate at LOS E under Existing (year 2017) and Existing (year 2017) Plus Project conditions. No additional vehicles due to the Project are anticipated at this segment under this condition.

Year 2025 Base Plus Project Condition
As shown in Table 3, the Project does not significantly impact the study roadway segments under Year 2025 Base Plus Project traffic condition. Majority of the study segments are anticipated to operate at LOS C with the additional traffic generated by the Project. The Audubon Drive between SR-41 and Palm Avenue is anticipated to operate at LOS E under Year 2025 Base and Year 2025 Base Plus Project traffic conditions. No additional vehicles due to the Project are anticipated at this segment under this condition.

Year 2025 Plus Project Alternative 1 Condition
As shown in Table 3, the Project does not significantly impact the study roadway segments under Year 2025 Plus Project Alternative 1 traffic condition. Majority of the study segments are anticipated to operate at LOS C with the additional traffic generated by the Project. The Audubon Drive between SR-41 and Palm Avenue is anticipated to operate at LOS E under Year 2025 Base and Year 2025 Plus Project Alternative 1 traffic conditions.

Year 2025 Plus Project Alternative 5 Condition

As shown in Table 3, the Project does not significantly impact the study roadway segments under Year 2025 Plus Project Alternative 5 traffic condition. Majority of the study segments are anticipated to operate at LOS C with the additional traffic generated by the Project. The Audubon Drive between SR-41 and Palm Avenue is anticipated to operate at LOS E under Year 2025 Base and Year 2025 Plus Project Alternative 5 traffic conditions.

Year 2025 Plus Project Alternative 5B Condition

As shown in Table 3, the Project does not significantly impact the study roadway segments under Year 2025 Plus Project Alternative 5B traffic condition. Majority of the study segments are anticipated to operate at LOS C with the additional traffic generated by the Project. The Audubon Drive between SR-41 and Palm Avenue is anticipated to operate at LOS E under Year 2025 Base and Year 2025 Plus Project Alternative 5B traffic conditions.

INTERSECTION ANALYSIS

Intersection analysis methodology and parameters are based on the City of Fresno Traffic Impact Study Guidelines. Intersection analysis was conducted for the following two locations:

- Palm Avenue and Nees Avenue (Signalized); and
- Del Mar Avenue and Audubon Drive (Unsignalized).

The analysis of intersections utilized the operational procedures as outlined in the 2010 Highway Capacity Manual (HCM). This method defines level of service in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane as the maximum saturation volume of an intersection. The level of service criteria used is described in Table 4. The computerized analysis of intersection operations was performed utilizing Synchro version 10.0 traffic analysis software.

Table 4
HCM 2010 Intersection LOS Criteria

LOS	Average Control Delay Per Vehicle (seconds)	
	Type of Intersection Control	
	Signalized	Unsignalized/ STOP Controlled
A (minimal delay)	< 10	< 10
B (short delay)	> 10 and < 20	> 10 and < 15
C (average delay)	> 20 and < 35	> 15 and < 25
D (long delay)	> 35 and < 55	> 25 and < 35
E (very long delay)	> 55 and < 80	> 35 and < 50
F (extreme delay/jammed)	> 80	> 50

Source: HCM (2010: Exhibits 18-4 and 19-1)

Table 5 summarizes the results of the roadway segment LOS analysis under all traffic conditions analyzed as well as compares the resulting LOS under the project alternative to the LOS under base condition.

Existing (Year 2017) Traffic Condition

Under Existing (year 2017) traffic condition, the study intersections are currently operating at LOS D or better during the AM and PM peak hours.

Existing (Year 2017) Plus Project Condition

Under Existing (year 2017) Plus Project traffic condition, the study intersections are currently operating at LOS D or better during the AM and PM peak hours.

Year 2025 Base Condition

Under Year 2025 Base traffic condition, the signalized intersection at Palm Avenue and Nees Avenue is anticipated to operate at LOS E during the AM and PM peak hours. The unsignalized intersection at Del Mar Avenue and Audubon Drive is anticipated to operate at LOS D during the AM peak hour and F during the PM peak hour.

Year 2025 Base Plus Project Condition

Under Year 2025 Base Plus Project traffic condition, the signalized intersection at Palm Avenue and Nees Avenue is anticipated to operate at LOS E during the AM and PM peal hours. The unsignalized intersection at Del Mar Avenue and Audubon Drive is anticipated to operate at LOS D during the AM peak hour and F during the PM peak hour.

Year 2025 Plus Project Alternative 1 Condition

Under Year 2025 Plus Project Alternative 1 traffic condition, the signalized intersection at Palm Avenue and Nees Avenue is anticipated to operate at LOS E during the AM and PM peal hours. The unsignalized intersection at Del Mar Avenue and Audubon Drive is anticipated to operate at LOS E during the AM peak hour and F during the PM peak hour.

Year 2025 Plus Project Alternative 5 Condition

Under Year 2025 Plus Project Alternative 5 traffic condition, the signalized intersection at Palm Avenue and Nees Avenue is anticipated to operate at LOS E during the AM and PM peal hours. The unsignalized intersection at Del Mar Avenue and Audubon Drive is anticipated to operate at LOS D during the AM peak hour and F during the PM peak hour.

Year 2025 Plus Project Alternative 5B Condition

Under Year 2025 Plus Project Alternative 5B traffic condition, the signalized intersection at Palm Avenue and Nees Avenue is anticipated to operate at LOS E during the AM and PM peal hours. The unsignalized intersection at Del Mar Avenue and Audubon Drive is anticipated to operate at LOS D during the AM peak hour and F during the PM peak hour.

Table 5
Intersection Level-of-Service (LOS) Summary

#	Intersection Location	Control	Existing (Year 2017) Condition				Existing Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Dela y	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	29.8	C	31.1	C	29.8	C	31.1	C	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	20.2	C	28.0	D	20.2	C	28.0	D	No

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Dela y	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	59.0	E	67.8	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	33.3	D	65.3	F	No

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Alt 1 Condition				Significant Impact?	Year 2025 Plus Project Alt 1 with Proposed Mitigation				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour		
			Dela y	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	59.0	E	67.8	E	No	-	-	-	-	-
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	39.2	E	89.2	F	*Yes*	10.8	B	13.5	B	No

#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Alt 5 Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Dela y	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	56.2	E	65.4	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	33.8	D	66.4	F	No

Table 5 Intersection Level-of-Service (LOS) Summary											
#	Intersection Location	Control	Year 2025 Base Condition				Year 2025 Plus Project Alt 5B Condition				Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
			Dela y	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1	Palm Ave (NS) / Nees Ave (EW)	TS	59.0	E	67.8	E	58.7	E	67.3	E	No
2	Del Mar Ave (NS) / Audubon Dr (EW)	SC	33.3	D	65.3	F	33.8	D	66.4	F	No

Determination of Significant Impact at Study Roadway Segments

According to the City of Fresno Traffic Impact Study Guidelines and coordination with the City Traffic Engineer, a project is considered to have an individually significant impact on the operation of an intersection if the addition traffic generated from the proposed project results in any of the following conditions:

- Triggers an intersection operating at acceptable level-of-service (LOS D or better) to operate at unacceptable levels of service (LOS E or F);
- Triggers an intersection operating at unacceptable level-of-service (LOS E) to operate at LOS F; or
- Increases the average delay by 5 or more seconds at a study intersection that is already operating at unacceptable level-of-service.

Table 5 above provides a comparison of the resulting LOS under the project alternatives to Existing (year 2017) and Year 2025 Base traffic conditions and are summarized below:

Existing (Year 2017) Plus Project Condition

As shown in Table 5, the Project does not significantly impact the study intersections under Existing (year 2017) Plus Project traffic condition. The study intersections are anticipated to operate at LOS D or better with the additional traffic generated by the Project.

Year 2025 Base Plus Project Condition

As shown in Table 5, the Project does not significantly impact the study intersections under Year 2025 Base Plus Project traffic condition. Although, the intersections are anticipated to operate at unacceptable level-of-service (LOS E or F), no project traffic are added at these intersections under this traffic condition resulting in the same delay under the project condition compared to the base condition.

Year 2025 Plus Project Alternative 1 Condition

As shown in Table 5, a Project significant impact has been identified at the intersection of Del Mar Avenue and Audubon Drive under Year 2025 Base Plus Project traffic condition. The operation of the intersection is anticipated to deteriorate from LOS D to LOS E during the AM peak hour and during the PM peak hour the intersection delay is anticipated to increase with the Project condition.

Year 2025 Plus Project Alternative 5 Condition

As shown in Table 5, the Project does not significantly impact the study intersections under Year 2025 Base Plus Project Alternative 5 traffic condition. Although, the intersections are anticipated to operate at unacceptable level-of-service (LOS E or F), an impact is not determined because the resulting delay does not increase by 5 seconds or more.

Year 2025 Plus Project Alternative 5B Condition

As shown in Table 5, the Project does not significantly impact the study intersections under

Year 2025 Base Plus Project Alternative 5B traffic condition. Although, the intersections are anticipated to operate at unacceptable level-of-service (LOS E or F), an impact is not determined because the resulting delay does not increase by 5 seconds or more.

Proposed Mitigation

Based on the significant impact criteria, a Project significant impact has been identified at the intersection of Del Mar Avenue and Audubon Drive under Project Alternative 1. As a proposed mitigation for this Project impact, a traffic signal is recommended at the intersection. A signal warrant analysis for this intersection has been conducted using the peak hour warrants in the California MUTCD and based on the peak hour warrant a traffic signal is warranted. Signal warrant analysis worksheets are included in Attachment C.

As shown in Table 5, the intersection of Del Mar Avenue and Audubon Drive is anticipated to operate at LOS B during the AM and PM peak hour with a traffic signal.

CONCLUSION

The purpose of this technical memorandum is to present updated and additional analysis performed for the proposed River West Eaton Trail Extension Project as a supplement to the March, 2016 Traffic Study. The updated and additional analysis is a result of comments received during the public review of the project's Environmental Document.

The updated and additional analysis were performed using year 2017 traffic counts instead of year 2014 traffic counts used in the previous study and additional analysis was conducted at two intersection location and one roadway segment location which was not included in the previous study. In addition, this memorandum includes analysis for an additional alternative. The additional alternative is Alternative 5B which provides access to the River West Eaton Trail via Spano Park.

VMT

The proposed Project with the Perrin Parking only is anticipated to generate 2,639 vehicle miles travelled which is the least when compared to Project Alternatives 1, 5, and 5B which generates approximately 3,887 to 3,959 vehicle miles travelled. This is primarily attributed to the assumption that the Perrin Parking is built in addition to the parking proposed for Alternative 1, 5 and 5B.

Roadway Segment

No Project significant impact has been determined at the study roadway segments under all traffic conditions.

Intersection

A Project significant impact has been identified at the intersection of Del Mar Avenue and Audubon Drive under Project Alternative 1. As a proposed mitigation for this Project impact, a traffic signal is recommended at the intersection.

Attachments:

Attachment A: Existing (Year 2017) Traffic Counts
Attachment B: Intersection Analysis Worksheets
Attachment C: Signal Warrant Worksheet

Attachment A
Existing (Year 2017) Traffic Count Worksheets

Roadway Segment
Traffic Count Worksheets

Prepared by NDS/ATD

VOLUME

Palm Ave S/O Nees Ave

Day: Wednesday
Date: 7/5/2017

City: Fresno
Project #: CA17_8059_001

DAILY TOTALS	NB	SB	EB	WB	Total
	12,059	11,918	0	8,446	32,423

AM Period	NB		SB		EB	WB	TOTAL	
00:00	26		28				54	
00:15	21		33				54	
00:30	14		30				44	
00:45	10	71	20	111			30	182
01:00	10		14				24	
01:15	13		20				33	
01:30	7		11				18	
01:45	6	36	13	58			19	94
02:00	7		7				14	
02:15	6		15				21	
02:30	4		12				16	
02:45	4	21	10	44			14	65
03:00	5		11				16	
03:15	11		13				24	
03:30	6		12				18	
03:45	6	28	18	54			24	82
04:00	8		13				21	
04:15	9		12				21	
04:30	9		16				25	
04:45	15	41	23	64			38	105
05:00	24		34				58	
05:15	33		30				63	
05:30	33		44				77	
05:45	50	140	51	159			101	299
06:00	55		48				103	
06:15	61		66				127	
06:30	72		91				163	
06:45	98	286	130	335			228	621
07:00	71		130				201	
07:15	108		163				271	
07:30	162		235				397	
07:45	196	537	260	788			456	1325
08:00	154		215				369	
08:15	167		220				387	
08:30	150		180				330	
08:45	165	636	189	804			354	1440
09:00	162		168				330	
09:15	138		166				304	
09:30	152		162				314	
09:45	161	613	197	693			358	1306
10:00	138		137				275	
10:15	146		141				287	
10:30	146		188				334	
10:45	195	625	186	652			381	1277
11:00	208		168				376	
11:15	185		192				377	
11:30	227		193				420	
11:45	225	845	211	764			436	1609
TOTALS		3879		4526				**8405**
SPLIT %		46.2%		53.8%				**25.9%**

PM Period	NB		SB		EB	WB		TOTAL	
12:00	258		204			289		751	
12:15	227		184			244		655	
12:30	223		216			250		689	
12:45	209	917	253	857		254	1037	716	2811
13:00	220		230			237		687	
13:15	244		223			219		686	
13:30	185		228			226		639	
13:45	197	846	198	879		188	870	583	2595
14:00	208		197			219		624	
14:15	193		224			211		628	
14:30	172		157			182		511	
14:45	205	778	212	790		195	807	612	2375
15:00	189		192			215		596	
15:15	204		205			216		625	
15:30	221		215			231		667	
15:45	218	832	213	825		232	894	663	2551
16:00	246		203			218		667	
16:15	263		218			288		769	
16:30	271		238			288		797	
16:45	253	1033	214	873		263	1057	730	2963
17:00	312		235			333		880	
17:15	295		228			304		827	
17:30	304		212			313		829	
17:45	266	1177	176	851		276	1226	718	3254
18:00	257		168			240		665	
18:15	232		198			224		654	
18:30	212		166			195		573	
18:45	185	886	131	663		149	808	465	2357
19:00	166		119			150		435	
19:15	148		142			169		459	
19:30	143		113			154		410	
19:45	127	584	121	495		135	608	383	1687
20:00	117		122			128		367	
20:15	107		108			115		330	
20:30	122		107			131		360	
20:45	111	457	131	468		87	461	329	1386
21:00	120		130			133		383	
21:15	104		85			113		302	
21:30	88		67			77		232	
21:45	80	392	74	356		72	395	226	1143
22:00	61		66			68		195	
22:15	52		57			48		157	
22:30	35		53			38		126	
22:45	29	177	49	225		39	193	117	595
23:00	34		39			36		109	
23:15	25		23			18		66	
23:30	23		32			20		75	
23:45	19	101	16	110		16	90	51	301
TOTALS		8180		7392			8446		**24018**
SPLIT %		34.1%		30.8%			35.2%		**74.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	12,059	11,918	0	8,446	32,423

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:30	07:30		11:45	**11:45**	**PM Peak Hour**	17:00	12:45		17:00	**16:45**
AM Pk Volume	937	930		783	**2531**	**PM Pk Volume**	1177	934		1226	**3266**
Pk Hr Factor	0.908	0.894		0.677	**0.843**	**Pk Hr Factor**	0.943	0.923		0.920	**0.928**
7 - 9 Volume	1173	1592	0	0	**2765**	**4 - 6 Volume**	2210	1724	0	2283	**6217**
7 - 9 Peak Hour	07:30	07:30			**07:30**	**4 - 6 Peak Hour**	17:00	16:30		17:00	**16:45**
7 - 9 Pk Volume	679	930	0	0	**1609**	**4 - 6 Pk Volume**	1177	915	0	1226	**3266**
Pk Hr Factor	0.866	0.894	0.000	0.000	**0.882**	**Pk Hr Factor**	0.943	0.961	0.000	0.920	**0.928**

Prepared by NDS/ATD

VOLUME

Palm Ave S/O Nees Ave

Day: Thursday
Date: 7/6/2017

City: Fresno
Project #: CA17_8059_001

DAILY TOTALS	NB	SB	EB	WB	Total
	12,594	12,640	0	0	25,234

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	12		15				27		12:00	289		220				509	
00:15	12		9				21		12:15	244		228				472	
00:30	5		20				25		12:30	250		209				459	
00:45	5	34	14	58			19	92	12:45	254	1037	243	900			497	1937
01:00	9		13				22		13:00	237		224				461	
01:15	11		18				29		13:15	219		217				436	
01:30	5		17				22		13:30	226		204				430	
01:45	4	29	10	58			14	87	13:45	188	870	240	885			428	1755
02:00	11		11				22		14:00	219		217				436	
02:15	6		6				12		14:15	211		172				383	
02:30	3		7				10		14:30	182		219				401	
02:45	7	27	8	32			15	59	14:45	195	807	224	832			419	1639
03:00	5		5				10		15:00	215		196				411	
03:15	2		12				14		15:15	216		209				425	
03:30	4		8				12		15:30	231		204				435	
03:45	13	24	19	44			32	68	15:45	232	894	240	849			472	1743
04:00	12		16				28		16:00	218		212				430	
04:15	17		17				34		16:15	288		209				497	
04:30	19		18				37		16:30	288		227				515	
04:45	24	72	21	72			45	144	16:45	263	1057	212	860			475	1917
05:00	25		25				50		17:00	333		275				608	
05:15	38		36				74		17:15	304		220				524	
05:30	41		40				81		17:30	313		247				560	
05:45	62	166	50	151			112	317	17:45	276	1226	202	944			478	2170
06:00	53		66				119		18:00	240		178				418	
06:15	80		60				140		18:15	224		183				407	
06:30	98		100				198		18:30	195		180				375	
06:45	107	338	142	368			249	706	18:45	149	808	161	702			310	1510
07:00	111		153				264		19:00	150		145				295	
07:15	118		169				287		19:15	169		149				318	
07:30	136		202				338		19:30	154		160				314	
07:45	206	571	281	805			487	1376	19:45	135	608	128	582			263	1190
08:00	190		228				418		20:00	128		128				256	
08:15	161		240				401		20:15	115		155				270	
08:30	167		199				366		20:30	131		152				283	
08:45	198	716	225	892			423	1608	20:45	87	461	104	539			191	1000
09:00	139		153				292		21:00	133		144				277	
09:15	149		167				316		21:15	113		116				229	
09:30	160		175				335		21:30	77		106				183	
09:45	170	618	223	718			393	1336	21:45	72	395	89	455			161	850
10:00	141		145				286		22:00	68		114				182	
10:15	152		157				309		22:15	48		62				110	
10:30	151		190				341		22:30	38		58				96	
10:45	219	663	183	675			402	1338	22:45	39	193	53	287			92	480
11:00	175		180				355		23:00	36		52				88	
11:15	209		194				403		23:15	18		37				55	
11:30	259		201				460		23:30	20		33				53	
11:45	247	890	202	777			449	1667	23:45	16	90	33	155			49	245
TOTALS		4148		4650				**8798**	**TOTALS**		8446		7990				**16436**
SPLIT %		47.1%		52.9%				**34.9%**	**SPLIT %**		51.4%		48.6%				**65.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	12,594	12,640	0	0	25,234

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:30	07:30			**11:30**	**PM Peak Hour**	17:00	16:45			**17:00**
AM Pk Volume	1039	951			**1890**	**PM Pk Volume**	1226	954			**2170**
Pk Hr Factor	0.899	0.846			**0.928**	**Pk Hr Factor**	0.920	0.867			**0.892**
7 - 9 Volume	1287	1697	0	0	**2984**	**4 - 6 Volume**	2283	1804	0	0	**4087**
7 - 9 Peak Hour	07:45	07:30			**07:45**	**4 - 6 Peak Hour**	17:00	16:45			**17:00**
7 - 9 Pk Volume	724	951	0	0	**1672**	**4 - 6 Pk Volume**	1226	954	0	0	**2170**
Pk Hr Factor	0.879	0.846	0.000	0.000	**0.858**	**Pk Hr Factor**	0.920	0.867	0.000	0.000	**0.892**

Prepared by NDS/ATD

VOLUME

Palm Ave S/O Nees Ave

Day: Friday
Date: 7/7/2017

City: Fresno
Project #: CA17_8059_001

DAILY TOTALS	NB	SB	EB	WB	Total
	12,801	12,546	0	0	25,347

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	15		21				36		12:00	284		241				525	
00:15	11		30				41		12:15	248		224				472	
00:30	9		24				33		12:30	249		207				456	
00:45	21	56	23	98			44	154	12:45	252	1033	269	941			521	1974
01:00	12		28				40		13:00	251		196				447	
01:15	9		8				17		13:15	228		239				467	
01:30	8		23				31		13:30	214		200				414	
01:45	6	35	12	71			18	106	13:45	208	901	220	855			428	1756
02:00	6		10				16		14:00	180		209				389	
02:15	10		14				24		14:15	221		215				436	
02:30	6		9				15		14:30	217		165				382	
02:45	3	25	11	44			14	69	14:45	187	805	225	814			412	1619
03:00	2		6				8		15:00	207		211				418	
03:15	6		8				14		15:15	209		195				404	
03:30	6		6				12		15:30	235		200				435	
03:45	18	32	20	40			38	72	15:45	222	873	187	793			409	1666
04:00	11		13				24		16:00	236		222				458	
04:15	18		19				37		16:15	295		235				530	
04:30	20		19				39		16:30	282		202				484	
04:45	28	77	32	83			60	160	16:45	255	1068	257	916			512	1984
05:00	23		27				50		17:00	305		250				555	
05:15	33		44				77		17:15	265		231				496	
05:30	39		50				89		17:30	288		184				472	
05:45	54	149	55	176			109	325	17:45	281	1139	171	836			452	1975
06:00	51		63				114		18:00	213		186				399	
06:15	58		63				121		18:15	225		155				380	
06:30	80		87				167		18:30	182		170				352	
06:45	126	315	116	329			242	644	18:45	155	775	148	659			303	1434
07:00	135		155				290		19:00	165		155				320	
07:15	149		188				337		19:15	151		146				297	
07:30	153		200				353		19:30	141		145				286	
07:45	203	640	295	838			498	1478	19:45	122	579	126	572			248	1151
08:00	183		224				407		20:00	139		123				262	
08:15	186		223				409		20:15	119		120				239	
08:30	150		204				354		20:30	105		128				233	
08:45	189	708	217	868			406	1576	20:45	98	461	116	487			214	948
09:00	144		179				323		21:00	115		123				238	
09:15	154		138				292		21:15	101		107				208	
09:30	155		189				344		21:30	83		98				181	
09:45	161	614	186	692			347	1306	21:45	79	378	108	436			187	814
10:00	180		159				339		22:00	86		99				185	
10:15	171		178				349		22:15	83		66				149	
10:30	176		181				357		22:30	78		71				149	
10:45	172	699	192	710			364	1409	22:45	91	338	82	318			173	656
11:00	221		167				388		23:00	51		58				109	
11:15	210		185				395		23:15	46		47				93	
11:30	263		192				455		23:30	38		50				88	
11:45	243	937	213	757			456	1694	23:45	29	164	58	213			87	377
TOTALS	4287		4706					**8993**	**TOTALS**	8514		7840					**16354**
SPLIT %	47.7%		52.3%					**35.5%**	**SPLIT %**	52.1%		47.9%					**64.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	12,801	12,546	0	0	25,347

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:30	07:45			**11:45**	**PM Peak Hour**	17:00	16:15			**16:15**
AM Pk Volume	1038	946			**1909**	**PM Pk Volume**	1139	944			**2081**
Pk Hr Factor	0.914	0.802			**0.909**	**Pk Hr Factor**	0.934	0.918			**0.937**
7 - 9 Volume	1348	1706	0	0	**3054**	**4 - 6 Volume**	2207	1752	0	0	**3959**
7 - 9 Peak Hour	07:30	07:45			**07:45**	**4 - 6 Peak Hour**	17:00	16:15			**16:15**
7 - 9 Pk Volume	725	946	0	0	**1668**	**4 - 6 Pk Volume**	1139	944	0	0	**2081**
Pk Hr Factor	0.893	0.802	0.000	0.000	**0.837**	**Pk Hr Factor**	0.934	0.918	0.000	0.000	**0.937**

Prepared by NDS/ATD

VOLUME

SR 41 E Frontage Rd(Cobb Ranch Rd) N/O Vin Rose Ln

Day: Wednesday
Date: 7/5/2017

City: Fresno
Project #: CA17_8059_002

DAILY TOTALS	NB	SB	EB	WB	Total
	40	42	0	0	82

AM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0	
00:15	0		0				0	
00:30	0		0				0	
00:45	0		0				0	
01:00	0		0				0	
01:15	0		0				0	
01:30	0		0				0	
01:45	0		0				0	
02:00	0		0				0	
02:15	0		0				0	
02:30	0		0				0	
02:45	0		0				0	
03:00	0		0				0	
03:15	0		0				0	
03:30	0		0				0	
03:45	0		0				0	
04:00	0		0				0	
04:15	0		0				0	
04:30	0		0				0	
04:45	0		0				0	
05:00	0		0				0	
05:15	0		0				0	
05:30	0		0				0	
05:45	0		0				0	
06:00	0		0				0	
06:15	0		0				0	
06:30	0		0				0	
06:45	0		0				0	
07:00	0		2				2	
07:15	2		1				3	
07:30	0		0				0	
07:45	0	2	1	4			1	6
08:00	2		0				2	
08:15	1		0				1	
08:30	0		1				1	
08:45	1	4	0	1			1	5
09:00	0		0				0	
09:15	0		0				0	
09:30	0		1				1	
09:45	4	4	2	3			6	7
10:00	1		0				1	
10:15	1		1				2	
10:30	0		0				0	
10:45	1	3	0	1			1	4
11:00	1		0				1	
11:15	3		2				5	
11:30	1		0				1	
11:45	0	5	1	3			1	8
TOTALS		18		12				**30**
SPLIT %		60.0%		40.0%				**36.6%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	0		1				1	
12:15	0		0				0	
12:30	0		0				0	
12:45	3	3	1	2			4	5
13:00	0		0				0	
13:15	0		1				1	
13:30	1		1				2	
13:45	0	1	0	2			0	3
14:00	0		0				0	
14:15	0		1				1	
14:30	2		1				3	
14:45	0	2	0	2			0	4
15:00	1		1				2	
15:15	1		1				2	
15:30	1		0				1	
15:45	2	5	2	4			4	9
16:00	1		2				3	
16:15	0		1				1	
16:30	0		0				0	
16:45	0	1	1	4			1	5
17:00	0		1				1	
17:15	1		0				1	
17:30	0		1				1	
17:45	1	2	1	3			2	5
18:00	1		0				1	
18:15	0		2				2	
18:30	0		2				2	
18:45	0	1	1	5			1	6
19:00	1		1				2	
19:15	0		1				1	
19:30	0		1				1	
19:45	0	1	1	4			1	5
20:00	0		0				0	
20:15	1		0				1	
20:30	1		1				2	
20:45	2	4	1	2			3	6
21:00	0		0				0	
21:15	0		0				0	
21:30	0		0				0	
21:45	0		0				0	
22:00	1		1				2	
22:15	0		0				0	
22:30	1		1				2	
22:45	0	2	0	2			0	4
23:00	0		0				0	
23:15	0		0				0	
23:30	0		0				0	
23:45	0		0				0	
TOTALS		22		30				**52**
SPLIT %		42.3%		57.7%				**63.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	40	42	0	0	82

	NB	SB	EB	WB	TOTAL
AM Peak Hour	09:30	07:00			**09:30**
AM Pk Volume	6	4			**10**
Pk Hr Factor	0.375	0.500			**0.417**
7 - 9 Volume	6	5	0	0	**11**
7 - 9 Peak Hour	07:15	07:00			**07:00**
7 - 9 Pk Volume	4	4	0	0	**6**
Pk Hr Factor	0.500	0.500	0.000	0.000	**0.500**

	NB	SB	EB	WB	TOTAL
PM Peak Hour	15:00	18:15			**15:15**
PM Pk Volume	5	6			**10**
Pk Hr Factor	0.625	0.750			**0.625**
4 - 6 Volume	3	7	0	0	**10**
4 - 6 Peak Hour	17:00	16:00			**16:00**
4 - 6 Pk Volume	2	4	0	0	**5**
Pk Hr Factor	0.500	0.500	0.000	0.000	**0.417**

Prepared by NDS/ATD

VOLUME

SR 41 E Frontage Rd(Cobb Ranch Rd) N/O Vin Rose Ln

Day: Thursday
Date: 7/6/2017

City: Fresno
Project #: CA17_8059_002

DAILY TOTALS	NB	SB	EB	WB	Total
	48	51	0	0	99

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	1		1				2	
00:15	0		0				0		12:15	1		0				1	
00:30	0		0				0		12:30	1		2				3	
00:45	0		0				0		12:45	0	3	0	3			0	6
01:00	0		0				0		13:00	1		1				2	
01:15	0		0				0		13:15	2		2				4	
01:30	0		0				0		13:30	0		0				0	
01:45	0		0				0		13:45	0	3	0	3			0	6
02:00	0		0				0		14:00	1		0				1	
02:15	0		0				0		14:15	0		0				0	
02:30	0		0				0		14:30	0		0				0	
02:45	0		0				0		14:45	1	2	0				1	2
03:00	0		0				0		15:00	0		0				0	
03:15	0		0				0		15:15	1		1				2	
03:30	0		0				0		15:30	1		1				2	
03:45	0		0				0		15:45	2	4	1	3			3	7
04:00	0		0				0		16:00	0		0				0	
04:15	0		0				0		16:15	1		0				1	
04:30	0		0				0		16:30	2		2				4	
04:45	0		0				0		16:45	0	3	0	2			0	5
05:00	0		0				0		17:00	0		1				1	
05:15	1		2				3		17:15	1		1				2	
05:30	0		0				0		17:30	0		1				1	
05:45	0	1	0	2			0	3	17:45	1	2	2	5			3	7
06:00	0		0				0		18:00	3		2				5	
06:15	0		0				0		18:15	2		1				3	
06:30	1		1				2		18:30	2		2				4	
06:45	1	2	1	2			2	4	18:45	3	10	3	8			6	18
07:00	0		0				0		19:00	1		2				3	
07:15	1		0				1		19:15	1		2				3	
07:30	0		0				0		19:30	0		2				2	
07:45	0	1	2	2			2	3	19:45	0	2	0	6			0	8
08:00	0		0				0		20:00	2		1				3	
08:15	0		0				0		20:15	1		0				1	
08:30	0		0				0		20:30	0		1				1	
08:45	0		0				0		20:45	1	4	2	4			3	8
09:00	1		0				1		21:00	0		0				0	
09:15	2		1				3		21:15	0		0				0	
09:30	0		0				0		21:30	0		0				0	
09:45	0	3	2	3			2	6	21:45	3	3	2	2			5	5
10:00	1		1				2		22:00	0		0				0	
10:15	2		2				4		22:15	0		1				1	
10:30	0		0				0		22:30	0		0				0	
10:45	0	3	0	3			0	6	22:45	0		0	1			0	1
11:00	0		0				0		23:00	0		0				0	
11:15	1		1				2		23:15	0		0				0	
11:30	0		1				1		23:30	0		0				0	
11:45	1	2	0	2			1	4	23:45	0		0				0	
TOTALS		12		14				**26**	**TOTALS**		36		37				**73**
SPLIT %		46.2%		53.8%				**26.3%**	**SPLIT %**		49.3%		50.7%				**73.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	48	51	0	0	99

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:45	09:30			**09:30**	**PM Peak Hour**	18:00	18:30			**18:00**
AM Pk Volume	4	5			**8**	**PM Pk Volume**	10	9			**18**
Pk Hr Factor	1.000	0.625			**0.500**	**Pk Hr Factor**	0.833	0.750			**0.750**
7 - 9 Volume	1	2	0	0	**3**	**4 - 6 Volume**	5	7	0	0	**12**
7 - 9 Peak Hour	07:00	07:00			**07:00**	**4 - 6 Peak Hour**	16:00	17:00			**16:30**
7 - 9 Pk Volume	1	2	0	0	**3**	**4 - 6 Pk Volume**	3	5	0	0	**7**
Pk Hr Factor	0.250	0.250	0.000	0.000	**0.375**	**Pk Hr Factor**	0.375	0.625	0.000	0.000	**0.438**

Prepared by NDS/ATD

VOLUME

SR 41 E Frontage Rd(Cobb Ranch Rd) N/O Vin Rose Ln

Day: Friday
Date: 7/7/2017

City: Fresno
Project #: CA17_8059_002

DAILY TOTALS	NB	SB	EB	WB	Total
	48	49	0	0	97

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		1				2		12:00	0		0				0	
00:15	1		1				2		12:15	3		2				5	
00:30	0		0				0		12:30	0		0				0	
00:45	0	2	0	2			0	4	12:45	0	3	0	2			0	5
01:00	0		0				0		13:00	3		2				5	
01:15	0		0				0		13:15	1		1				2	
01:30	0		0				0		13:30	1		5				6	
01:45	0		0				0		13:45	4	9	1	9			5	18
02:00	0		0				0		14:00	1		1				2	
02:15	0		0				0		14:15	1		1				2	
02:30	0		0				0		14:30	0		0				0	
02:45	0		0				0		14:45	0	2	0	2			0	4
03:00	0		0				0		15:00	0		1				1	
03:15	0		1				1		15:15	1		0				1	
03:30	0		0				0		15:30	1		2				3	
03:45	1	1	0	1			1	2	15:45	1	3	1	4			2	7
04:00	0		0				0		16:00	0		0				0	
04:15	0		0				0		16:15	0		0				0	
04:30	0		0				0		16:30	1		2				3	
04:45	0		0				0		16:45	2	3	1	3			3	6
05:00	0		0				0		17:00	0		0				0	
05:15	0		0				0		17:15	1		2				3	
05:30	0		0				0		17:30	0		0				0	
05:45	0		0				0		17:45	0	1	0	2			0	3
06:00	0		0				0		18:00	0		0				0	
06:15	1		1				2		18:15	1		0				1	
06:30	1		1				2		18:30	1		1				2	
06:45	0	2	2	4			2	6	18:45	1	3	0	1			1	4
07:00	0		1				1		19:00	1		1				2	
07:15	2		3				5		19:15	0		0				0	
07:30	1		1				2		19:30	0		0				0	
07:45	1	4	1	6			2	10	19:45	0	1	0	1			0	2
08:00	0		0				0		20:00	0		0				0	
08:15	1		0				1		20:15	1		1				2	
08:30	0		0				0		20:30	0		0				0	
08:45	0	1	0				0	1	20:45	0	1	0	1			0	2
09:00	1		0				1		21:00	1		0				1	
09:15	2		1				3		21:15	0		0				0	
09:30	1		0				1		21:30	0		0				0	
09:45	1	5	2	3			3	8	21:45	0	1	0				0	1
10:00	2		2				4		22:00	0		1				1	
10:15	0		0				0		22:15	0		0				0	
10:30	1		2				3		22:30	0		0				0	
10:45	0	3	0	4			0	7	22:45	0		0	1			0	1
11:00	0		0				0		23:00	1		1				2	
11:15	0		0				0		23:15	2		1				3	
11:30	0		0				0		23:30	0		0				0	
11:45	0		1	1			1	1	23:45	0	3	0	2			0	5
TOTALS		18		21				39	TOTALS		30		28				58
SPLIT %		46.2%		53.8%				40.2%	SPLIT %		51.7%		48.3%				59.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	48	49	0	0	97

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	09:15	06:30			09:15	PM Peak Hour	13:00	13:00			13:00
AM Pk Volume	6	7			11	PM Pk Volume	9	9			18
Pk Hr Factor	0.750	0.583			0.688	Pk Hr Factor	0.563	0.450			0.750
7 - 9 Volume	5	6	0	0	11	4 - 6 Volume	4	5	0	0	9
7 - 9 Peak Hour	07:00	07:00			07:00	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	4	6	0	0	10	4 - 6 Pk Volume	4	5	0	0	9
Pk Hr Factor	0.500	0.500	0.000	0.000	0.500	Pk Hr Factor	0.500	0.625	0.000	0.000	0.750

Prepared by NDS/ATD

VOLUME

Audubon Dr Bet. SR 41 & Palm Ave

Day: Wednesday
Date: 7/5/2017

City: Fresno
Project #: CA17_8059_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,901	6,938	13,839

AM Period	NB	SB	EB		WB		TOTAL	
00:00			8		13		21	
00:15			11		17		28	
00:30			12		8		20	
00:45			8	39	12	50	20	89
01:00			6		9		15	
01:15			13		11		24	
01:30			4		4		8	
01:45			6	29	9	33	15	62
02:00			6		7		13	
02:15			3		5		8	
02:30			1		4		5	
02:45			1	11	8	24	9	35
03:00			3		0		3	
03:15			6		6		12	
03:30			1		5		6	
03:45			0	10	13	24	13	34
04:00			2		5		7	
04:15			6		8		14	
04:30			6		11		17	
04:45			6	20	14	38	20	58
05:00			9		17		26	
05:15			19		21		40	
05:30			23		28		51	
05:45			42	93	31	97	73	190
06:00			26		30		56	
06:15			37		50		87	
06:30			46		58		104	
06:45			73	182	95	233	168	415
07:00			47		92		139	
07:15			76		106		182	
07:30			104		169		273	
07:45			125	352	217	584	342	936
08:00			99		162		261	
08:15			98		155		253	
08:30			94		141		235	
08:45			106	397	137	595	243	992
09:00			91		133		224	
09:15			76		102		178	
09:30			89		125		214	
09:45			90	346	136	496	226	842
10:00			77		86		163	
10:15			66		78		144	
10:30			81		101		182	
10:45			103	327	102	367	205	694
11:00			87		93		180	
11:15			100		85		185	
11:30			123		102		225	
11:45			91	401	119	399	210	800
TOTALS				2207		2940		5147
SPLIT %				42.9%		57.1%		37.2%

PM Period	NB	SB	EB		WB		TOTAL	
12:00			115		115		230	
12:15			120		94		214	
12:30			113		118		231	
12:45			125	473	136	463	261	936
13:00			103		136		239	
13:15			117		116		233	
13:30			102		126		228	
13:45			103	425	102	480	205	905
14:00			89		106		195	
14:15			95		113		208	
14:30			116		111		227	
14:45			97	397	119	449	216	846
15:00			97		117		214	
15:15			96		104		200	
15:30			118		117		235	
15:45			150	461	100	438	250	899
16:00			121		106		227	
16:15			154		116		270	
16:30			159		123		282	
16:45			192	626	107	452	299	1078
17:00			241		124		365	
17:15			225		116		341	
17:30			197		120		317	
17:45			184	847	96	456	280	1303
18:00			134		93		227	
18:15			127		112		239	
18:30			119		72		191	
18:45			105	485	54	331	159	816
19:00			78		62		140	
19:15			72		68		140	
19:30			85		69		154	
19:45			96	331	56	255	152	586
20:00			56		77		133	
20:15			56		66		122	
20:30			82		72		154	
20:45			62	256	84	299	146	555
21:00			51		79		130	
21:15			56		43		99	
21:30			61		41		102	
21:45			41	209	44	207	85	416
22:00			36		36		72	
22:15			36		32		68	
22:30			24		26		50	
22:45			21	117	21	115	42	232
23:00			21		17		38	
23:15			19		12		31	
23:30			17		18		35	
23:45			10	67	6	53	16	120
TOTALS				4694		3998		8692
SPLIT %				54.0%		46.0%		62.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,901	6,938	13,839

	NB	SB	EB	WB	Total
AM Peak Hour			11:30	07:30	07:30
AM Pk Volume			449	703	1129
Pk Hr Factor			0.913	0.810	0.825
7 - 9 Volume	0	0	749	1179	1928
7 - 9 Peak Hour			07:30	07:30	07:30
7 - 9 Pk Volume	0	0	426	703	1129
Pk Hr Factor	0.000	0.000	0.852	0.810	0.825

	NB	SB	EB	WB	Total
PM Peak Hour			16:45	12:45	16:45
PM Pk Volume			855	514	1322
Pk Hr Factor			0.887	0.945	0.905
4 - 6 Volume	0	0	1473	908	2381
4 - 6 Peak Hour			16:45	16:15	16:45
4 - 6 Pk Volume	0	0	855	470	1322
Pk Hr Factor	0.000	0.000	0.887	0.948	0.905

Prepared by NDS/ATD

VOLUME

Audubon Dr Bet. SR 41 & Palm Ave

Day: Thursday
Date: 7/6/2017

City: Fresno
Project #: CA17_8059_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,422	7,237	14,659

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			6		9		15		12:00			126		98		224	
00:15			4		7		11		12:15			127		116		243	
00:30			5		10		15		12:30			101		112		213	
00:45			6	21	7	33	13	54	12:45			145	499	129	455	274	954
01:00			7		5		12		13:00			125		136		261	
01:15			6		6		12		13:15			100		114		214	
01:30			4		10		14		13:30			125		117		242	
01:45			3	20	5	26	8	46	13:45			111	461	111	478	222	939
02:00			5		5		10		14:00			101		90		191	
02:15			3		3		6		14:15			102		79		181	
02:30			1		7		8		14:30			110		112		222	
02:45			1	10	4	19	5	29	14:45			103	416	112	393	215	809
03:00			3		3		6		15:00			99		114		213	
03:15			2		4		6		15:15			121		120		241	
03:30			3		2		5		15:30			144		115		259	
03:45			7	15	12	21	19	36	15:45			133	497	115	464	248	961
04:00			1		4		5		16:00			145		106		251	
04:15			5		9		14		16:15			169		136		305	
04:30			13		13		26		16:30			174		110		284	
04:45			12	31	17	43	29	74	16:45			179	667	115	467	294	1134
05:00			17		17		34		17:00			265		142		407	
05:15			18		33		51		17:15			252		129		381	
05:30			22		29		51		17:30			220		134		354	
05:45			48	105	35	114	83	219	17:45			192	929	91	496	283	1425
06:00			40		46		86		18:00			159		90		249	
06:15			46		38		84		18:15			151		107		258	
06:30			71		70		141		18:30			120		100		220	
06:45			82	239	104	258	186	497	18:45			100	530	66	363	166	893
07:00			62		100		162		19:00			85		86		171	
07:15			80		121		201		19:15			99		89		188	
07:30			108		150		258		19:30			86		79		165	
07:45			118	368	207	578	325	946	19:45			82	352	58	312	140	664
08:00			102		154		256		20:00			76		68		144	
08:15			96		187		283		20:15			79		92		171	
08:30			94		149		243		20:30			72		80		152	
08:45			112	404	171	661	283	1065	20:45			56	283	61	301	117	584
09:00			85		104		189		21:00			67		68		135	
09:15			80		119		199		21:15			74		60		134	
09:30			90		111		201		21:30			49		44		93	
09:45			85	340	147	481	232	821	21:45			36	226	51	223	87	449
10:00			87		102		189		22:00			43		48		91	
10:15			93		94		187		22:15			47		30		77	
10:30			86		100		186		22:30			35		28		63	
10:45			88	354	94	390	182	744	22:45			29	154	31	137	60	291
11:00			87		97		184		23:00			26		22		48	
11:15			134		117		251		23:15			16		19		35	
11:30			100		110		210		23:30			11		21		32	
11:45			117	438	124	448	241	886	23:45			10	63	14	76	24	139
TOTALS				2345		3072		**5417**	**TOTALS**				5077		4165		**9242**
SPLIT %				43.3%		56.7%		**37.0%**	**SPLIT %**				54.9%		45.1%		**63.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,422	7,237	14,659

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:15	07:30	**07:30**	**PM Peak Hour**			17:00	16:45	**16:45**
AM Pk Volume			477	698	**1122**	**PM Pk Volume**			929	520	**1436**
Pk Hr Factor			0.890	0.843	**0.863**	**Pk Hr Factor**			0.876	0.915	**0.882**
7 - 9 Volume	0	0	772	1239	**2011**	**4 - 6 Volume**	0	0	1596	963	**2559**
7 - 9 Peak Hour			07:30	07:30	**07:30**	**4 - 6 Peak Hour**			17:00	16:45	**16:45**
7 - 9 Pk Volume	0	0	424	698	**1122**	**4 - 6 Pk Volume**	0	0	929	520	**1436**
Pk Hr Factor	0.000	0.000	0.898	0.843	**0.863**	**Pk Hr Factor**	0.000	0.000	0.876	0.915	**0.882**

Prepared by NDS/ATD

VOLUME

Audubon Dr Bet. SR 41 & Palm Ave

Day: Friday
Date: 7/7/2017

City: Fresno
Project #: CA17_8059_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,238	7,121	14,359

AM Period	NB	SB	EB		WB		TOTAL	
00:00			14		7		21	
00:15			9		15		24	
00:30			13		14		27	
00:45			8	44	10	46	18	90
01:00			9		9		18	
01:15			9		8		17	
01:30			2		11		13	
01:45			9	29	4	32	13	61
02:00			3		6		9	
02:15			11		10		21	
02:30			1		9		10	
02:45			4	19	5	30	9	49
03:00			2		2		4	
03:15			2		6		8	
03:30			7		5		12	
03:45			5	16	8	21	13	37
04:00			3		2		5	
04:15			4		6		10	
04:30			10		10		20	
04:45			24	41	13	31	37	72
05:00			13		14		27	
05:15			21		29		50	
05:30			26		24		50	
05:45			35	95	34	101	69	196
06:00			26		42		68	
06:15			41		45		86	
06:30			36		64		100	
06:45			90	193	98	249	188	442
07:00			51		101		152	
07:15			80		133		213	
07:30			85		160		245	
07:45			135	351	215	609	350	960
08:00			95		172		267	
08:15			97		188		285	
08:30			83		143		226	
08:45			125	400	168	671	293	1071
09:00			85		111		196	
09:15			92		100		192	
09:30			81		131		212	
09:45			84	342	128	470	212	812
10:00			80		106		186	
10:15			89		105		194	
10:30			93		93		186	
10:45			105	367	106	410	211	777
11:00			117		92		209	
11:15			103		116		219	
11:30			111		96		207	
11:45			122	453	119	423	241	876
TOTALS				2350		3093		**5443**
SPLIT %				43.2%		56.8%		**37.9%**

PM Period	NB	SB	EB		WB		TOTAL	
12:00			136		114		250	
12:15			133		113		246	
12:30			121		106		227	
12:45			124	514	140	473	264	987
13:00			128		96		224	
13:15			111		120		231	
13:30			125		128		253	
13:45			104	468	121	465	225	933
14:00			113		113		226	
14:15			130		110		240	
14:30			125		117		242	
14:45			101	469	90	430	191	899
15:00			102		100		202	
15:15			107		91		198	
15:30			147		120		267	
15:45			135	491	108	419	243	910
16:00			122		101		223	
16:15			139		121		260	
16:30			156		109		265	
16:45			171	588	117	448	288	1036
17:00			215		134		349	
17:15			172		115		287	
17:30			160		105		265	
17:45			191	738	76	430	267	1168
18:00			127		95		222	
18:15			144		92		236	
18:30			108		88		196	
18:45			117	496	85	360	202	856
19:00			93		60		153	
19:15			87		70		157	
19:30			73		70		143	
19:45			84	337	78	278	162	615
20:00			90		64		154	
20:15			78		64		142	
20:30			61		73		134	
20:45			69	298	57	258	126	556
21:00			50		62		112	
21:15			45		53		98	
21:30			42		58		100	
21:45			57	194	49	222	106	416
22:00			41		41		82	
22:15			44		42		86	
22:30			54		26		80	
22:45			35	174	35	144	70	318
23:00			40		24		64	
23:15			32		26		58	
23:30			26		17		43	
23:45			23	121	34	101	57	222
TOTALS				4888		4028		**8916**
SPLIT %				54.8%		45.2%		**62.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,238	7,121	14,359

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:45	07:30	**07:30**	**PM Peak Hour**			17:00	12:45	**16:30**
AM Pk Volume			512	735	**1147**	**PM Pk Volume**			738	484	**1189**
Pk Hr Factor			0.941	0.855	**0.819**	**Pk Hr Factor**			0.858	0.864	**0.852**
7 - 9 Volume	0	0	751	1280	**2031**	**4 - 6 Volume**	0	0	1326	878	**2204**
7 - 9 Peak Hour			07:30	07:30	**07:30**	**4 - 6 Peak Hour**			17:00	16:15	**16:30**
7 - 9 Pk Volume	0	0	412	735	**1147**	**4 - 6 Pk Volume**	0	0	738	481	**1189**
Pk Hr Factor	0.000	0.000	0.763	0.855	**0.819**	**Pk Hr Factor**	0.000	0.000	0.858	0.897	**0.852**

Prepared by NDS/ATD

VOLUME

Audubon Dr E/O SR 41

Day: Wednesday
Date: 7/5/2017

City: Fresno
Project #: CA17_8059_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,799	7,665	15,464

AM Period	NB	SB	EB		WB		TOTAL	
00:00			11		18		29	
00:15			20		23		43	
00:30			14		13		27	
00:45			9	54	16	70	25	124
01:00			7		10		17	
01:15			12		16		28	
01:30			8		5		13	
01:45			7	34	11	42	18	76
02:00			3		6		9	
02:15			4		5		9	
02:30			2		2		4	
02:45			2	11	9	22	11	33
03:00			3		1		4	
03:15			6		7		13	
03:30			1		8		9	
03:45			1	11	9	25	10	36
04:00			5		4		9	
04:15			9		7		16	
04:30			9		12		21	
04:45			10	33	11	34	21	67
05:00			14		17		31	
05:15			20		20		40	
05:30			31		25		56	
05:45			51	116	27	89	78	205
06:00			32		35		67	
06:15			44		52		96	
06:30			63		60		123	
06:45			83	222	99	246	182	468
07:00			67		94		161	
07:15			91		109		200	
07:30			123		166		289	
07:45			147	428	211	580	358	1008
08:00			122		167		289	
08:15			114		152		266	
08:30			117		148		265	
08:45			116	469	146	613	262	1082
09:00			102		123		225	
09:15			95		101		196	
09:30			101		93		194	
09:45			103	401	137	454	240	855
10:00			79		88		167	
10:15			82		80		162	
10:30			103		113		216	
10:45			121	385	105	386	226	771
11:00			97		97		194	
11:15			111		85		196	
11:30			134		105		239	
11:45			119	461	119	406	238	867
TOTALS				2625		2967		5592
SPLIT %				46.9%		53.1%		36.2%

PM Period	NB	SB	EB		WB		TOTAL	
12:00			114		131		245	
12:15			146		110		256	
12:30			120		128		248	
12:45			147	527	141	510	288	1037
13:00			120		162		282	
13:15			131		135		266	
13:30			113		140		253	
13:45			119	483	113	550	232	1033
14:00			118		120		238	
14:15			119		129		248	
14:30			135		125		260	
14:45			107	479	136	510	243	989
15:00			109		132		241	
15:15			110		109		219	
15:30			127		139		266	
15:45			152	498	118	498	270	996
16:00			137		125		262	
16:15			158		125		283	
16:30			173		136		309	
16:45			190	658	125	511	315	1169
17:00			246		158		404	
17:15			231		141		372	
17:30			215		144		359	
17:45			197	889	115	558	312	1447
18:00			152		119		271	
18:15			130		136		266	
18:30			134		82		216	
18:45			126	542	77	414	203	956
19:00			87		78		165	
19:15			81		79		160	
19:30			92		83		175	
19:45			102	362	67	307	169	669
20:00			71		93		164	
20:15			59		84		143	
20:30			90		90		180	
20:45			71	291	95	362	166	653
21:00			66		97		163	
21:15			48		61		109	
21:30			69		56		125	
21:45			42	225	53	267	95	492
22:00			47		45		92	
22:15			37		41		78	
22:30			32		29		61	
22:45			24	140	28	143	52	283
23:00			27		22		49	
23:15			16		19		35	
23:30			20		17		37	
23:45			17	80	10	68	27	148
TOTALS				5174		4698		9872
SPLIT %				52.4%		47.6%		63.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,799	7,665	15,464

	NB	SB	EB	WB	Total
AM Peak Hour			11:30	07:30	07:30
AM Pk Volume			513	696	1202
Pk Hr Factor			0.878	0.825	0.839
7 - 9 Volume	0	0	897	1193	2090
7 - 9 Peak Hour			07:30	07:30	07:30
7 - 9 Pk Volume	0	0	506	696	1202
Pk Hr Factor	0.000	0.000	0.861	0.825	0.839

	NB	SB	EB	WB	Total
PM Peak Hour			17:00	12:45	16:45
PM Pk Volume			889	578	1450
Pk Hr Factor			0.903	0.892	0.897
4 - 6 Volume	0	0	1547	1069	2616
4 - 6 Peak Hour			17:00	16:45	16:45
4 - 6 Pk Volume	0	0	889	568	1450
Pk Hr Factor	0.000	0.000	0.903	0.899	0.897

Prepared by NDS/ATD

VOLUME

Audubon Dr E/O SR 41

Day: Thursday
Date: 7/6/2017

City: Fresno
Project #: CA17_8059_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,313	8,000	16,313

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			8		10		18		12:00			140		107		247	
00:15			5		8		13		12:15			122		130		252	
00:30			6		11		17		12:30			125		120		245	
00:45			7	26	9	38	16	64	12:45			150	537	137	494	287	1031
01:00			7		5		12		13:00			143		150		293	
01:15			7		6		13		13:15			122		123		245	
01:30			5		9		14		13:30			133		122		255	
01:45			4	23	5	25	9	48	13:45			114	512	123	518	237	1030
02:00			5		7		12		14:00			120		107		227	
02:15			2		4		6		14:15			119		119		238	
02:30			0		8		8		14:30			120		123		243	
02:45			2	9	6	25	8	34	14:45			114	473	123	472	237	945
03:00			7		7		14		15:00			118		125		243	
03:15			3		7		10		15:15			123		145		268	
03:30			4		2		6		15:30			149		130		279	
03:45			9	23	13	29	22	52	15:45			147	537	129	529	276	1066
04:00			4		5		9		16:00			156		125		281	
04:15			5		8		13		16:15			177		149		326	
04:30			16		12		28		16:30			177		130		307	
04:45			12	37	12	37	24	74	16:45			181	691	136	540	317	1231
05:00			23		16		39		17:00			266		165		431	
05:15			25		35		60		17:15			249		153		402	
05:30			19		31		50		17:30			235		151		386	
05:45			64	131	36	118	100	249	17:45			208	958	103	572	311	1530
06:00			47		48		95		18:00			177		115		292	
06:15			50		39		89		18:15			159		130		289	
06:30			84		66		150		18:30			139		114		253	
06:45			92	273	101	254	193	527	18:45			112	587	81	440	193	1027
07:00			86		102		188		19:00			111		114		225	
07:15			108		133		241		19:15			111		100		211	
07:30			128		144		272		19:30			104		96		200	
07:45			149	471	201	580	350	1051	19:45			90	416	82	392	172	808
08:00			128		166		294		20:00			83		77		160	
08:15			105		179		284		20:15			87		107		194	
08:30			117		144		261		20:30			86		96		182	
08:45			134	484	170	659	304	1143	20:45			66	322	78	358	144	680
09:00			103		114		217		21:00			69		80		149	
09:15			94		118		212		21:15			90		84		174	
09:30			111		119		230		21:30			58		55		113	
09:45			97	405	142	493	239	898	21:45			37	254	62	281	99	535
10:00			108		105		213		22:00			44		57		101	
10:15			105		109		214		22:15			56		41		97	
10:30			104		112		216		22:30			38		35		73	
10:45			104	421	89	415	193	836	22:45			33	171	34	167	67	338
11:00			105		96		201		23:00			29		27		56	
11:15			145		125		270		23:15			12		25		37	
11:30			107		118		225		23:30			15		27		42	
11:45			127	484	129	468	256	952	23:45			12	68	17	96	29	164
TOTALS				2787		3141		**5928**	**TOTALS**				5526		4859		**10385**
SPLIT %				47.0%		53.0%		**36.3%**	**SPLIT %**				53.2%		46.8%		**63.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,313	8,000	16,313

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:15	07:30	**07:30**	**PM Peak Hour**			17:00	16:45	**16:45**
AM Pk Volume			519	690	**1200**	**PM Pk Volume**			958	605	**1536**
Pk Hr Factor			0.895	0.858	**0.857**	**Pk Hr Factor**			0.900	0.917	**0.891**
7 - 9 Volume	0	0	955	1239	**2194**	**4 - 6 Volume**	0	0	1649	1112	**2761**
7 - 9 Peak Hour			07:15	07:30	**07:30**	**4 - 6 Peak Hour**			17:00	16:45	**16:45**
7 - 9 Pk Volume	0	0	513	690	**1200**	**4 - 6 Pk Volume**	0	0	958	605	**1536**
Pk Hr Factor	0.000	0.000	0.861	0.858	**0.857**	**Pk Hr Factor**	0.000	0.000	0.900	0.917	**0.891**

Prepared by NDS/ATD

VOLUME

Audubon Dr E/O SR 41

Day: Friday
Date: 7/7/2017

City: Fresno
Project #: CA17_8059_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,146	7,817	15,963

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			17		13		30		12:00			146		126		272	
00:15			12		17		29		12:15			142		137		279	
00:30			15		16		31		12:30			125		110		235	
00:45			9	53	11	57	20	110	12:45			142	555	157	530	299	1085
01:00			8		12		20		13:00			142		103		245	
01:15			12		8		20		13:15			126		137		263	
01:30			3		12		15		13:30			130		142		272	
01:45			9	32	5	37	14	69	13:45			130	528	126	508	256	1036
02:00			3		7		10		14:00			120		121		241	
02:15			11		11		22		14:15			128		106		234	
02:30			0		9		9		14:30			115		132		247	
02:45			3	17	5	32	8	49	14:45			118	481	112	471	230	952
03:00			3		2		5		15:00			102		107		209	
03:15			2		6		8		15:15			121		107		228	
03:30			7		5		12		15:30			161		129		290	
03:45			4	16	5	18	9	34	15:45			150	534	129	472	279	1006
04:00			5		2		7		16:00			138		112		250	
04:15			4		8		12		16:15			151		138		289	
04:30			11		11		22		16:30			166		140		306	
04:45			26	46	11	32	37	78	16:45			166	621	136	526	302	1147
05:00			16		16		32		17:00			226		155		381	
05:15			25		25		50		17:15			201		130		331	
05:30			31		24		55		17:30			171		124		295	
05:45			44	116	32	97	76	213	17:45			198	796	111	520	309	1316
06:00			32		48		80		18:00			139		106		245	
06:15			51		40		91		18:15			158		108		266	
06:30			49		68		117		18:30			128		101		229	
06:45			99	231	102	258	201	489	18:45			124	549	99	414	223	963
07:00			63		98		161		19:00			105		78		183	
07:15			101		125		226		19:15			104		76		180	
07:30			114		157		271		19:30			82		84		166	
07:45			163	441	207	587	370	1028	19:45			94	385	88	326	182	711
08:00			129		175		304		20:00			100		78		178	
08:15			122		181		303		20:15			93		79		172	
08:30			109		154		263		20:30			72		77		149	
08:45			143	503	173	683	316	1186	20:45			72	337	66	300	138	637
09:00			99		114		213		21:00			67		76		143	
09:15			115		115		230		21:15			61		65		126	
09:30			103		128		231		21:30			51		64		115	
09:45			98	415	129	486	227	901	21:45			57	236	67	272	124	508
10:00			99		103		202		22:00			54		52		106	
10:15			115		112		227		22:15			49		51		100	
10:30			101		101		202		22:30			59		36		95	
10:45			111	426	104	420	215	846	22:45			45	207	40	179	85	386
11:00			126		105		231		23:00			39		29		68	
11:15			123		115		238		23:15			31		38		69	
11:30			117		114		231		23:30			27		30		57	
11:45			135	501	123	457	258	958	23:45			23	120	38	135	61	255
TOTALS				2797		3164		**5961**	**TOTALS**				5349		4653		**10002**
SPLIT %				46.9%		53.1%		**37.3%**	**SPLIT %**				53.5%		46.5%		**62.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,146	7,817	15,963

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			11:45	07:30	**07:30**	**PM Peak Hour**			17:00	16:15	**16:30**
AM Pk Volume			548	720	**1248**	**PM Pk Volume**			796	569	**1320**
Pk Hr Factor			0.938	0.870	**0.843**	**Pk Hr Factor**			0.881	0.918	**0.866**
7 - 9 Volume	0	0	944	1270	**2214**	**4 - 6 Volume**	0	0	1417	1046	**2463**
7 - 9 Peak Hour			07:30	07:30	**07:30**	**4 - 6 Peak Hour**			17:00	16:15	**16:30**
7 - 9 Pk Volume	0	0	528	720	**1248**	**4 - 6 Pk Volume**	0	0	796	569	**1320**
Pk Hr Factor	0.000	0.000	0.810	0.870	**0.843**	**Pk Hr Factor**	0.000	0.000	0.881	0.918	**0.866**

Intersection
Traffic Count Worksheets

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-8060-001 **Day:** Thursday

City: Fresno **Date:** 7/6/2017

AM

NS/EW Streets:	Del Mar Ave			Del Mar Ave			Audubon Dr			Audubon Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0	1	0	1	0	0	1	0	
7:00 AM	0	0	0	22	0	6	4	60	0	0	88	5	185
7:15 AM	0	0	0	23	0	7	2	81	0	0	116	7	236
7:30 AM	0	0	0	28	0	14	3	101	0	0	137	7	290
7:45 AM	0	0	0	24	0	10	4	111	0	0	199	7	355
8:00 AM	0	0	0	21	0	5	4	95	0	0	153	8	286
8:15 AM	0	0	0	15	0	7	6	94	0	0	168	1	291
8:30 AM	0	0	0	24	0	9	3	91	0	0	149	5	281
8:45 AM	0	0	0	24	0	6	5	103	0	0	150	7	295
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	181	0	64	31	736	0	0	1160	47	2219
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	73.88%	0.00%	26.12%	4.04%	95.96%	0.00%	0.00%	96.11%	3.89%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	88	0	36	17	401	0	0	657	23	1222
PEAK HR FACTOR :	0.000			0.738			0.909			0.825			0.861

CONTROL : 1-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-8060-001 **Day:** Thursday

City: Fresno **Date:** 7/6/2017

PM

NS/EW Streets:	Del Mar Ave			Del Mar Ave			Audubon Dr			Audubon Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0	1	0	1	0	0	1	0	
4:00 PM	0	0	0	14	0	4	9	138	0	0	105	7	277
4:15 PM	0	0	0	11	0	3	7	170	0	0	129	6	326
4:30 PM	0	0	0	10	0	5	8	160	0	0	104	7	294
4:45 PM	0	0	0	13	0	6	12	170	0	0	100	8	309
5:00 PM	0	0	0	14	0	4	9	268	0	0	142	8	445
5:15 PM	0	0	0	11	0	4	17	232	0	0	120	12	396
5:30 PM	0	0	0	14	0	7	10	213	0	0	119	14	377
5:45 PM	0	0	0	20	0	7	8	184	0	0	85	13	317

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	107	0	40	80	1535	0	0	904	75	2741
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	72.79%	0.00%	27.21%	4.95%	95.05%	0.00%	0.00%	92.34%	7.66%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	59	0	22	44	897	0	0	466	47	1535
PEAK HR FACTOR :		0.000			0.750			0.849			0.855		0.862

CONTROL : 1-Way Stop

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Mar Ave and Audubon Dr , Fresno

Date: 7/6/2017

Day: Thursday

Project #: 17-8060-001

City: Fresno

Del Mar Ave

Audubon Dr

Peak Hour Summary

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Southbound Approach

	Right	Thru	Left	Outbound
Lanes	1	0	1	
AM	36	0	88	40
NOON	0	0	0	0
PM	22	0	59	91

Eastbound Approach

	Lanes	AM	NOON	PM
Outbound		693	0	488
Left	0	17	0	44
Thru	1	401	0	897
Right	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	23	0	47	0
Thru	657	0	466	1
Left	0	0	0	0
Outbound	489	0	956	

CONTROL

1-Way Stop

Northbound Approach

	Outbound	Left	Thru	Right
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	124	40
North Leg	NOON	0	0
North Leg	PM	81	91
East Leg	AM	680	489
East Leg	NOON	0	0
East Leg	PM	513	956
West Leg	AM	418	693
West Leg	NOON	0	0
West Leg	PM	941	488
South Leg	AM	0	0
South Leg	NOON	0	0
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	164	0	172
East Leg	1169	0	1469
West Leg	1111	0	1429
South Leg	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-8060-002 **Day:** Thursday

City: Fresno **Date:** 7/6/2017

AM

NS/EW Streets:	Palm Ave			Palm Ave			Nees Ave			Nees Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	2	1	0.5	0.5	1	1	1	2	1	1	
7:00 AM	32	1	72	0	0	0	0	9	0	132	16	9	271
7:15 AM	22	2	97	2	0	0	0	12	4	163	10	14	326
7:30 AM	18	6	107	2	0	2	0	7	4	200	32	20	398
7:45 AM	44	19	141	4	4	1	1	10	1	270	44	37	576
8:00 AM	41	21	122	7	3	1	0	15	3	216	53	28	510
8:15 AM	47	5	113	3	1	0	0	22	2	236	63	16	508
8:30 AM	37	10	110	1	0	1	0	23	5	185	48	7	427
8:45 AM	57	6	136	5	3	0	0	22	4	206	57	7	503
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	298	70	898	24	11	5	1	120	23	1608	323	138	3519
APPROACH %'s :	23.54%	5.53%	70.93%	60.00%	27.50%	12.50%	0.69%	83.33%	15.97%	77.72%	15.61%	6.67%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	169	55	486	15	8	3	1	70	11	907	208	88	2021
PEAK HR FACTOR :		0.870			0.591			0.732			0.857		0.877

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-8060-002 **Day:** Thursday

City: Fresno **Date:** 7/6/2017

PM

NS/EW Streets:	Palm Ave			Palm Ave			Nees Ave			Nees Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	2	1	0.5	0.5	1	1	1	2	1	1	
4:00 PM	28	3	192	6	5	0	0	27	4	189	14	5	473
4:15 PM	39	5	243	10	1	0	0	23	3	210	39	1	574
4:30 PM	43	2	240	10	6	2	0	31	4	194	30	1	563
4:45 PM	42	2	227	10	5	0	0	38	5	193	41	2	565
5:00 PM	56	7	271	28	22	3	2	45	8	253	52	1	748
5:15 PM	41	3	271	8	10	0	0	50	2	205	40	3	633
5:30 PM	54	2	250	12	8	1	0	47	14	225	29	4	646
5:45 PM	47	3	231	6	3	1	0	33	7	162	44	0	537
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	350	27	1925	90	60	7	2	294	47	1631	289	17	4739
APPROACH %'s :	15.20%	1.17%	83.62%	57.32%	38.22%	4.46%	0.58%	85.71%	13.70%	84.20%	14.92%	0.88%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	193	14	1019	58	45	4	2	180	29	876	162	10	2592
PEAK HR FACTOR :		0.918			0.505			0.865			0.856		0.866

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Palm Ave and Nees Ave , Fresno

Date:	7/6/2017
Day:	Thursday
Project #:	17-8060-002
City:	Fresno

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Palm Ave

Nees Ave

N

Peak Hour Summary

Southbound Approach

Lanes	0.5	0.5	1		
AM	3	8	15	144	AM
NOON	0	0	0	0	NOON
PM	4	45	58	26	PM

Eastbound Approach

	AM	NOON	PM
	380	0	359

Lanes	AM	NOON	PM
1	1	0	2
1	70	0	180
1	11	0	29

Westbound Approach

AM	NOON	PM	Lanes
88	0	10	1
208	0	162	1
907	0	876	2

AM	NOON	PM
571	0	1257

CONTROL
Signalized

Northbound Approach

AM	926	169	55	486	AM
NOON	0	0	0	0	NOON
PM	950	193	14	1019	PM
		1	1	2	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

26	144	AM
0	0	NOON
107	26	PM

West Leg

AM	NOON	PM
380	0	359
82	0	211

East Leg

AM	NOON	PM
1203	0	1048
571	0	1257

South Leg

AM	926	710
NOON	0	0
PM	950	1226

Total Volume Per Leg

North Leg

170	AM
0	NOON
133	PM

West Leg

AM	NOON	PM
462	0	570

East Leg

AM	NOON	PM
1774	0	2305

South Leg

AM	1636
NOON	0
PM	2176

Attachment B
Intersection Analysis Worksheets

Existing (Year 2017) Condition Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	93	1031	236	100	192	63	552	17	12
v/c Ratio	0.01	0.21	0.85	0.26	0.12	0.82	0.09	0.25	0.10	0.03
Control Delay	51.0	38.4	42.4	18.5	3.8	75.4	29.1	1.1	51.6	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	38.4	42.4	18.5	3.8	75.4	29.1	1.1	51.6	30.4
Queue Length 50th (ft)	1	27	335	92	0	132	26	0	11	5
Queue Length 95th (ft)	7	50	#558	173	30	#301	78	22	38	23
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1215	1080	960	235	683	2242	266	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.08	0.85	0.22	0.10	0.82	0.09	0.25	0.06	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	70	11	907	208	88	169	55	486	15	8	3
Future Volume (veh/h)	1	70	11	907	208	88	169	55	486	15	8	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	80	12	1031	236	100	192	62	552	17	9	3
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	318	47	1158	804	683	231	674	1946	75	367	122
Arrive On Green	0.01	0.10	0.10	0.34	0.43	0.43	0.13	0.36	0.36	0.04	0.27	0.27
Sat Flow, veh/h	1774	3097	455	3442	1863	1583	1774	1863	2787	1774	1338	446
Grp Volume(v), veh/h	1	45	47	1031	236	100	192	62	552	17	0	12
Grp Sat Flow(s),veh/h/ln	1774	1770	1782	1721	1863	1583	1774	1863	1393	1774	0	1784
Q Serve(g_s), s	0.1	2.4	2.5	29.0	8.4	3.9	10.8	2.2	7.6	0.9	0.0	0.5
Cycle Q Clear(g_c), s	0.1	2.4	2.5	29.0	8.4	3.9	10.8	2.2	7.6	0.9	0.0	0.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	14	182	183	1158	804	683	231	674	1946	75	0	489
V/C Ratio(X)	0.07	0.25	0.26	0.89	0.29	0.15	0.83	0.09	0.28	0.23	0.00	0.02
Avail Cap(c_a), veh/h	182	623	628	1347	1194	1015	260	674	1946	295	0	489
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	42.2	42.3	32.1	18.9	17.6	43.3	21.5	5.8	47.3	0.0	27.2
Incr Delay (d2), s/veh	2.3	0.7	0.7	7.0	0.2	0.1	18.1	0.3	0.4	1.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	14.9	4.4	1.7	6.4	1.2	3.0	0.5	0.0	0.3
LnGrp Delay(d),s/veh	52.6	42.9	43.0	39.1	19.1	17.7	61.5	21.8	6.2	48.8	0.0	27.3
LnGrp LOS	D	D	D	D	B	B	E	C	A	D		C
Approach Vol, veh/h		93			1367			806			29	
Approach Delay, s/veh		43.1			34.1			20.5			39.9	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	41.0	38.4	14.5	17.3	32.0	4.8	48.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	25.5	39.5	35.5	14.5	27.5	10.0	65.0
Max Q Clear Time (g_c+I1), s	2.9	9.6	31.0	4.5	12.8	2.5	2.1	10.4
Green Ext Time (p_c), s	0.0	2.4	2.9	0.4	0.1	0.0	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	401	657	23	88	36
Future Vol, veh/h	17	401	657	23	88	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	466	764	27	102	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	791	0	-	0	1284	778
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	506	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	829	-	-	-	182	396
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	829	-	-	-	178	396
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	829	-	-	-	309	396
HCM Lane V/C Ratio	0.024	-	-	-	0.331	0.106
HCM Control Delay (s)	9.4	-	-	-	22.3	15.2
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4	0.4

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2	240	1007	186	11	222	16	1171	67	57
v/c Ratio	0.01	0.50	0.89	0.21	0.01	0.89	0.03	0.54	0.38	0.12
Control Delay	52.0	46.4	47.6	18.7	0.0	84.2	33.1	4.4	56.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	46.4	47.6	18.7	0.0	84.2	33.1	4.4	56.5	34.6
Queue Length 50th (ft)	1	82	347	73	0	159	8	52	46	30
Queue Length 95th (ft)	9	116	#549	140	0	#339	29	148	97	72
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	161	1096	1137	1031	914	250	594	2157	262	464
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.22	0.89	0.18	0.01	0.89	0.03	0.54	0.26	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	180	29	876	162	10	193	14	1019	58	45	4
Future Volume (veh/h)	2	180	29	876	162	10	193	14	1019	58	45	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	207	33	1007	186	11	222	16	1171	67	52	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	314	49	1118	777	660	259	622	1836	153	459	44
Arrive On Green	0.01	0.10	0.10	0.32	0.42	0.42	0.15	0.33	0.33	0.09	0.27	0.27
Sat Flow, veh/h	1774	3066	481	3442	1863	1583	1774	1863	2787	1774	1673	161
Grp Volume(v), veh/h	2	118	122	1007	186	11	222	16	1171	67	0	57
Grp Sat Flow(s),veh/h/ln	1774	1770	1778	1721	1863	1583	1774	1863	1393	1774	0	1834
Q Serve(g_s), s	0.1	6.7	6.9	29.3	6.8	0.4	12.8	0.6	26.0	3.8	0.0	2.4
Cycle Q Clear(g_c), s	0.1	6.7	6.9	29.3	6.8	0.4	12.8	0.6	26.0	3.8	0.0	2.4
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	18	181	182	1118	777	660	259	622	1836	153	0	503
V/C Ratio(X)	0.11	0.65	0.67	0.90	0.24	0.02	0.86	0.03	0.64	0.44	0.00	0.11
Avail Cap(c_a), veh/h	177	607	609	1245	1126	957	274	622	1836	287	0	503
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	45.3	45.5	33.8	19.8	18.0	43.8	23.5	10.5	45.5	0.0	28.6
Incr Delay (d2), s/veh	2.7	3.9	4.2	8.6	0.2	0.0	21.7	0.1	1.7	1.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	3.6	15.2	3.5	0.2	7.9	0.3	10.3	1.9	0.0	1.3
LnGrp Delay(d),s/veh	54.2	49.3	49.7	42.4	20.0	18.0	65.5	23.6	12.3	47.5	0.0	29.0
LnGrp LOS	D	D	D	D	B	B	E	C	B	D		C
Approach Vol, veh/h		242			1204			1409			124	
Approach Delay, s/veh		49.5			38.7			20.8			39.0	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	39.1	38.1	14.7	19.4	32.8	5.1	47.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	27.5	37.5	35.5	15.7	28.3	10.0	63.0
Max Q Clear Time (g_c+I1), s	5.8	28.0	31.3	8.9	14.8	4.4	2.1	8.8
Green Ext Time (p_c), s	0.1	0.0	2.3	1.3	0.1	0.2	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	897	466	47	59	22
Future Vol, veh/h	44	897	466	47	59	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	1043	542	55	69	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	597	0	-	0	1715	570
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	1145	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	980	-	-	-	99	521
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	303	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	980	-	-	-	94	521
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	303	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	980	-	-	-	192	521
HCM Lane V/C Ratio	0.052	-	-	-	0.357	0.049
HCM Control Delay (s)	8.9	-	-	-	33.8	12.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.5	0.2

Existing (Year 2017) Plus Project Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	93	1031	236	100	192	63	552	17	12
v/c Ratio	0.01	0.21	0.85	0.26	0.12	0.82	0.09	0.25	0.10	0.03
Control Delay	51.0	38.4	42.4	18.5	3.8	75.4	29.1	1.1	51.6	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	38.4	42.4	18.5	3.8	75.4	29.1	1.1	51.6	30.4
Queue Length 50th (ft)	1	27	335	92	0	132	26	0	11	5
Queue Length 95th (ft)	7	50	#558	173	30	#301	78	22	38	23
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1215	1080	960	235	683	2242	266	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.08	0.85	0.22	0.10	0.82	0.09	0.25	0.06	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	70	11	907	208	88	169	55	486	15	8	3
Future Volume (veh/h)	1	70	11	907	208	88	169	55	486	15	8	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	80	12	1031	236	100	192	62	552	17	9	3
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	318	47	1158	804	683	231	674	1946	75	367	122
Arrive On Green	0.01	0.10	0.10	0.34	0.43	0.43	0.13	0.36	0.36	0.04	0.27	0.27
Sat Flow, veh/h	1774	3097	455	3442	1863	1583	1774	1863	2787	1774	1338	446
Grp Volume(v), veh/h	1	45	47	1031	236	100	192	62	552	17	0	12
Grp Sat Flow(s),veh/h/ln	1774	1770	1782	1721	1863	1583	1774	1863	1393	1774	0	1784
Q Serve(g_s), s	0.1	2.4	2.5	29.0	8.4	3.9	10.8	2.2	7.6	0.9	0.0	0.5
Cycle Q Clear(g_c), s	0.1	2.4	2.5	29.0	8.4	3.9	10.8	2.2	7.6	0.9	0.0	0.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	14	182	183	1158	804	683	231	674	1946	75	0	489
V/C Ratio(X)	0.07	0.25	0.26	0.89	0.29	0.15	0.83	0.09	0.28	0.23	0.00	0.02
Avail Cap(c_a), veh/h	182	623	628	1347	1194	1015	260	674	1946	295	0	489
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	42.2	42.3	32.1	18.9	17.6	43.3	21.5	5.8	47.3	0.0	27.2
Incr Delay (d2), s/veh	2.3	0.7	0.7	7.0	0.2	0.1	18.1	0.3	0.4	1.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	14.9	4.4	1.7	6.4	1.2	3.0	0.5	0.0	0.3
LnGrp Delay(d),s/veh	52.6	42.9	43.0	39.1	19.1	17.7	61.5	21.8	6.2	48.8	0.0	27.3
LnGrp LOS	D	D	D	D	B	B	E	C	A	D		C
Approach Vol, veh/h		93			1367			806			29	
Approach Delay, s/veh		43.1			34.1			20.5			39.9	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	41.0	38.4	14.5	17.3	32.0	4.8	48.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	25.5	39.5	35.5	14.5	27.5	10.0	65.0
Max Q Clear Time (g_c+I1), s	2.9	9.6	31.0	4.5	12.8	2.5	2.1	10.4
Green Ext Time (p_c), s	0.0	2.4	2.9	0.4	0.1	0.0	0.0	1.8

Intersection Summary			
HCM 2010 Ctrl Delay			29.8
HCM 2010 LOS			C

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	401	657	23	88	36
Future Vol, veh/h	17	401	657	23	88	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	466	764	27	102	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	791	0	-	0	1284	778
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	506	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	829	-	-	-	182	396
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	829	-	-	-	178	396
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	829	-	-	-	309	396
HCM Lane V/C Ratio	0.024	-	-	-	0.331	0.106
HCM Control Delay (s)	9.4	-	-	-	22.3	15.2
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4	0.4

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2	240	1007	186	11	222	16	1171	67	57
v/c Ratio	0.01	0.50	0.89	0.21	0.01	0.89	0.03	0.54	0.38	0.12
Control Delay	52.0	46.4	47.6	18.7	0.0	84.2	33.1	4.4	56.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	46.4	47.6	18.7	0.0	84.2	33.1	4.4	56.5	34.6
Queue Length 50th (ft)	1	82	347	73	0	159	8	52	46	30
Queue Length 95th (ft)	9	116	#549	140	0	#339	29	148	97	72
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	161	1096	1137	1031	914	250	594	2157	262	464
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.22	0.89	0.18	0.01	0.89	0.03	0.54	0.26	0.12

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	180	29	876	162	10	193	14	1019	58	45	4
Future Volume (veh/h)	2	180	29	876	162	10	193	14	1019	58	45	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	207	33	1007	186	11	222	16	1171	67	52	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	314	49	1118	777	660	259	622	1836	153	459	44
Arrive On Green	0.01	0.10	0.10	0.32	0.42	0.42	0.15	0.33	0.33	0.09	0.27	0.27
Sat Flow, veh/h	1774	3066	481	3442	1863	1583	1774	1863	2787	1774	1673	161
Grp Volume(v), veh/h	2	118	122	1007	186	11	222	16	1171	67	0	57
Grp Sat Flow(s),veh/h/ln	1774	1770	1778	1721	1863	1583	1774	1863	1393	1774	0	1834
Q Serve(g_s), s	0.1	6.7	6.9	29.3	6.8	0.4	12.8	0.6	26.0	3.8	0.0	2.4
Cycle Q Clear(g_c), s	0.1	6.7	6.9	29.3	6.8	0.4	12.8	0.6	26.0	3.8	0.0	2.4
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	18	181	182	1118	777	660	259	622	1836	153	0	503
V/C Ratio(X)	0.11	0.65	0.67	0.90	0.24	0.02	0.86	0.03	0.64	0.44	0.00	0.11
Avail Cap(c_a), veh/h	177	607	609	1245	1126	957	274	622	1836	287	0	503
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	45.3	45.5	33.8	19.8	18.0	43.8	23.5	10.5	45.5	0.0	28.6
Incr Delay (d2), s/veh	2.7	3.9	4.2	8.6	0.2	0.0	21.7	0.1	1.7	1.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	3.6	15.2	3.5	0.2	7.9	0.3	10.3	1.9	0.0	1.3
LnGrp Delay(d),s/veh	54.2	49.3	49.7	42.4	20.0	18.0	65.5	23.6	12.3	47.5	0.0	29.0
LnGrp LOS	D	D	D	D	B	B	E	C	B	D		C
Approach Vol, veh/h		242			1204			1409			124	
Approach Delay, s/veh		49.5			38.7			20.8			39.0	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	39.1	38.1	14.7	19.4	32.8	5.1	47.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	27.5	37.5	35.5	15.7	28.3	10.0	63.0
Max Q Clear Time (g_c+I1), s	5.8	28.0	31.3	8.9	14.8	4.4	2.1	8.8
Green Ext Time (p_c), s	0.1	0.0	2.3	1.3	0.1	0.2	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	897	466	47	59	22
Future Vol, veh/h	44	897	466	47	59	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	1043	542	55	69	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	597	0	-	0	1715	570
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	1145	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	980	-	-	-	99	521
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	303	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	980	-	-	-	94	521
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	303	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	980	-	-	-	192	521
HCM Lane V/C Ratio	0.052	-	-	-	0.357	0.049
HCM Control Delay (s)	8.9	-	-	-	33.8	12.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.5	0.2

Year 2025 Base Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	122	1360	313	132	253	83	730	23	18
v/c Ratio	0.01	0.28	1.15	0.35	0.16	1.01	0.12	0.32	0.14	0.04
Control Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Length 50th (ft)	1	38	~565	131	0	179	34	0	15	7
Queue Length 95th (ft)	7	64	#863	235	34	#409	97	22	46	29
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1184	1063	960	250	700	2286	266	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	1.15	0.29	0.14	1.01	0.12	0.32	0.09	0.04

Intersection Summary
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Future Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	105	17	1360	312	132	253	83	730	23	12	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	294	47	1226	828	704	259	654	1971	90	320	133
Arrive On Green	0.01	0.10	0.09	0.36	0.44	0.44	0.15	0.35	0.35	0.05	0.26	0.25
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1250	521
Grp Volume(v), veh/h	1	60	62	1360	312	132	253	83	730	23	0	17
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1771
Q Serve(g_s), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Cycle Q Clear(g_c), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	13	170	170	1226	828	704	259	654	1971	90	0	453
V/C Ratio(X)	0.08	0.35	0.37	1.11	0.38	0.19	0.98	0.13	0.37	0.26	0.00	0.04
Avail Cap(c_a), veh/h	170	582	584	1226	1097	933	259	654	1971	275	0	453
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	46.3	46.4	35.3	20.3	18.4	46.6	24.1	6.3	50.0	0.0	30.7
Incr Delay (d2), s/veh	2.5	1.2	1.3	61.2	0.3	0.1	49.0	0.4	0.5	1.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	28.8	6.3	2.4	11.1	1.8	4.5	0.7	0.0	0.4
LnGrp Delay(d),s/veh	56.5	47.6	47.7	96.5	20.6	18.5	95.6	24.5	6.9	51.5	0.0	30.8
LnGrp LOS	E	D	D	F	C	B	F	C	A	D		C
Approach Vol, veh/h		123			1804			1066			40	
Approach Delay, s/veh		47.7			77.7			29.3			42.7	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	42.5	43.0	14.5	20.0	32.0	4.8	52.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	26.5	38.5	35.5	15.5	27.5	10.0	64.0
Max Q Clear Time (g_c+I1), s	3.4	13.4	41.0	5.6	17.6	2.8	2.1	14.2
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	0.0	0.0	2.4

Intersection Summary			
HCM 2010 Ctrl Delay			59.0
HCM 2010 LOS			E

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	497	867	30	109	45
Future Vol, veh/h	21	497	867	30	109	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	578	1008	35	127	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1043	0	-	0	1652	1026
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	626	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	667	-	-	-	~ 108	285
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	533	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	667	-	-	-	~ 104	285
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	533	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	667	-	-	-	229	285
HCM Lane V/C Ratio	0.037	-	-	-	0.553	0.184
HCM Control Delay (s)	10.6	-	-	-	38.6	20.5
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.1	-	-	-	3	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3	318	1329	246	15	293	21	1546	89	74
v/c Ratio	0.02	0.59	1.22	0.28	0.02	1.07	0.04	0.77	0.48	0.17
Control Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Length 50th (ft)	2	113	~615	102	0	~238	11	251	63	41
Queue Length 95th (ft)	13	153	#845	187	0	#455	36	504	121	91
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	159	1078	1089	998	887	273	536	1995	258	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	1.22	0.25	0.02	1.07	0.04	0.77	0.34	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Future Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	274	44	1329	246	15	293	21	1546	89	68	6
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	382	61	1126	819	696	282	595	1801	155	418	37
Arrive On Green	0.01	0.12	0.12	0.33	0.44	0.44	0.16	0.32	0.32	0.09	0.25	0.24
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1688	149
Grp Volume(v), veh/h	3	157	161	1329	246	15	293	21	1546	89	0	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1836
Q Serve(g_s), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Cycle Q Clear(g_c), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	22	221	222	1126	819	696	282	595	1801	155	0	455
V/C Ratio(X)	0.14	0.71	0.73	1.18	0.30	0.02	1.04	0.04	0.86	0.57	0.00	0.16
Avail Cap(c_a), veh/h	165	563	566	1126	1029	875	282	595	1801	267	0	455
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	47.5	47.7	38.1	20.5	17.9	47.6	26.5	15.9	49.6	0.0	33.4
Incr Delay (d2), s/veh	2.8	4.2	4.5	90.6	0.2	0.0	63.8	0.1	5.6	3.3	0.0	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	0.1	5.0	5.1	31.7	5.0	0.3	13.8	0.5	20.3	2.8	0.0	1.9
LnGrp Delay(d),s/veh	58.0	51.7	52.2	128.7	20.7	17.9	111.3	26.6	21.5	52.9	0.0	34.2
LnGrp LOS	E	D	D	F	C	B	F	C	C	D		C
Approach Vol, veh/h		321			1590			1860			163	
Approach Delay, s/veh		52.0			110.9			35.7			44.4	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	40.1	41.0	18.1	22.0	32.0	5.4	53.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	28.5	36.5	35.5	17.5	27.5	10.0	62.0
Max Q Clear Time (g_c+I1), s	7.5	38.1	39.0	11.9	20.0	5.6	2.2	11.6
Green Ext Time (p_c), s	0.1	0.0	0.0	1.7	0.0	0.3	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1112	615	62	73	27
Future Vol, veh/h	55	1112	615	62	73	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	1293	715	72	85	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	787	0	-	0	2172	751
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	1421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	832	-	-	-	~ 51	411
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	223	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	832	-	-	-	~ 47	411
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	65.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	832	-	-	-	122	411
HCM Lane V/C Ratio	0.077	-	-	-	0.696	0.076
HCM Control Delay (s)	9.7	-	-	-	84.1	14.5
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Year 2025 Base Plus Project Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	122	1360	313	132	253	83	730	23	18
v/c Ratio	0.01	0.28	1.15	0.35	0.16	1.01	0.12	0.32	0.14	0.04
Control Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Length 50th (ft)	1	38	~565	131	0	179	34	0	15	7
Queue Length 95th (ft)	7	64	#863	235	34	#409	97	22	46	29
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1184	1063	960	250	700	2286	266	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	1.15	0.29	0.14	1.01	0.12	0.32	0.09	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Future Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	105	17	1360	312	132	253	83	730	23	12	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	294	47	1226	828	704	259	654	1971	90	320	133
Arrive On Green	0.01	0.10	0.09	0.36	0.44	0.44	0.15	0.35	0.35	0.05	0.26	0.25
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1250	521
Grp Volume(v), veh/h	1	60	62	1360	312	132	253	83	730	23	0	17
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1771
Q Serve(g_s), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Cycle Q Clear(g_c), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	13	170	170	1226	828	704	259	654	1971	90	0	453
V/C Ratio(X)	0.08	0.35	0.37	1.11	0.38	0.19	0.98	0.13	0.37	0.26	0.00	0.04
Avail Cap(c_a), veh/h	170	582	584	1226	1097	933	259	654	1971	275	0	453
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	46.3	46.4	35.3	20.3	18.4	46.6	24.1	6.3	50.0	0.0	30.7
Incr Delay (d2), s/veh	2.5	1.2	1.3	61.2	0.3	0.1	49.0	0.4	0.5	1.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	28.8	6.3	2.4	11.1	1.8	4.5	0.7	0.0	0.4
LnGrp Delay(d),s/veh	56.5	47.6	47.7	96.5	20.6	18.5	95.6	24.5	6.9	51.5	0.0	30.8
LnGrp LOS	E	D	D	F	C	B	F	C	A	D		C
Approach Vol, veh/h		123			1804			1066			40	
Approach Delay, s/veh		47.7			77.7			29.3			42.7	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	42.5	43.0	14.5	20.0	32.0	4.8	52.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	26.5	38.5	35.5	15.5	27.5	10.0	64.0
Max Q Clear Time (g_c+I1), s	3.4	13.4	41.0	5.6	17.6	2.8	2.1	14.2
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	59.0
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	497	867	30	109	45
Future Vol, veh/h	21	497	867	30	109	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	578	1008	35	127	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1043	0	-	0	1652	1026
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	626	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	667	-	-	-	~ 108	285
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	533	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	667	-	-	-	~ 104	285
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	533	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	667	-	-	-	229	285
HCM Lane V/C Ratio	0.037	-	-	-	0.553	0.184
HCM Control Delay (s)	10.6	-	-	-	38.6	20.5
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.1	-	-	-	3	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3	318	1329	246	15	293	21	1546	89	74
v/c Ratio	0.02	0.59	1.22	0.28	0.02	1.07	0.04	0.77	0.48	0.17
Control Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Length 50th (ft)	2	113	~615	102	0	~238	11	251	63	41
Queue Length 95th (ft)	13	153	#845	187	0	#455	36	504	121	91
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	159	1078	1089	998	887	273	536	1995	258	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	1.22	0.25	0.02	1.07	0.04	0.77	0.34	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Future Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	274	44	1329	246	15	293	21	1546	89	68	6
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	382	61	1126	819	696	282	595	1801	155	418	37
Arrive On Green	0.01	0.12	0.12	0.33	0.44	0.44	0.16	0.32	0.32	0.09	0.25	0.24
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1688	149
Grp Volume(v), veh/h	3	157	161	1329	246	15	293	21	1546	89	0	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1836
Q Serve(g_s), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Cycle Q Clear(g_c), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	22	221	222	1126	819	696	282	595	1801	155	0	455
V/C Ratio(X)	0.14	0.71	0.73	1.18	0.30	0.02	1.04	0.04	0.86	0.57	0.00	0.16
Avail Cap(c_a), veh/h	165	563	566	1126	1029	875	282	595	1801	267	0	455
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	47.5	47.7	38.1	20.5	17.9	47.6	26.5	15.9	49.6	0.0	33.4
Incr Delay (d2), s/veh	2.8	4.2	4.5	90.6	0.2	0.0	63.8	0.1	5.6	3.3	0.0	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	0.1	5.0	5.1	31.7	5.0	0.3	13.8	0.5	20.3	2.8	0.0	1.9
LnGrp Delay(d),s/veh	58.0	51.7	52.2	128.7	20.7	17.9	111.3	26.6	21.5	52.9	0.0	34.2
LnGrp LOS	E	D	D	F	C	B	F	C	C	D		C
Approach Vol, veh/h		321			1590			1860			163	
Approach Delay, s/veh		52.0			110.9			35.7			44.4	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	40.1	41.0	18.1	22.0	32.0	5.4	53.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	28.5	36.5	35.5	17.5	27.5	10.0	62.0
Max Q Clear Time (g_c+I1), s	7.5	38.1	39.0	11.9	20.0	5.6	2.2	11.6
Green Ext Time (p_c), s	0.1	0.0	0.0	1.7	0.0	0.3	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Intersection						
Int Delay, s/veh	3.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1112	615	62	73	27
Future Vol, veh/h	55	1112	615	62	73	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	1293	715	72	85	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	787	0	-	0	2172	751
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	1421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	832	-	-	-	~ 51	411
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	223	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	832	-	-	-	~ 47	411
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	65.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	832	-	-	-	122	411
HCM Lane V/C Ratio	0.077	-	-	-	0.696	0.076
HCM Control Delay (s)	9.7	-	-	-	84.1	14.5
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Year 2025 Plus Project Alternative 1 Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	122	1360	313	132	253	83	730	23	18
v/c Ratio	0.01	0.28	1.15	0.35	0.16	1.01	0.12	0.32	0.14	0.04
Control Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	40.9	111.9	20.3	3.6	109.2	28.3	1.1	52.1	28.9
Queue Length 50th (ft)	1	38	~565	131	0	179	34	0	15	7
Queue Length 95th (ft)	7	64	#863	235	34	#409	97	22	46	29
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1184	1063	960	250	700	2286	266	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	1.15	0.29	0.14	1.01	0.12	0.32	0.09	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Future Volume (veh/h)	1	92	15	1197	275	116	223	73	642	20	11	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	105	17	1360	312	132	253	83	730	23	12	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	294	47	1226	828	704	259	654	1971	90	320	133
Arrive On Green	0.01	0.10	0.09	0.36	0.44	0.44	0.15	0.35	0.35	0.05	0.26	0.25
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1250	521
Grp Volume(v), veh/h	1	60	62	1360	312	132	253	83	730	23	0	17
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1771
Q Serve(g_s), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Cycle Q Clear(g_c), s	0.1	3.5	3.6	39.0	12.2	5.5	15.6	3.3	11.4	1.4	0.0	0.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	13	170	170	1226	828	704	259	654	1971	90	0	453
V/C Ratio(X)	0.08	0.35	0.37	1.11	0.38	0.19	0.98	0.13	0.37	0.26	0.00	0.04
Avail Cap(c_a), veh/h	170	582	584	1226	1097	933	259	654	1971	275	0	453
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	46.3	46.4	35.3	20.3	18.4	46.6	24.1	6.3	50.0	0.0	30.7
Incr Delay (d2), s/veh	2.5	1.2	1.3	61.2	0.3	0.1	49.0	0.4	0.5	1.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	28.8	6.3	2.4	11.1	1.8	4.5	0.7	0.0	0.4
LnGrp Delay(d),s/veh	56.5	47.6	47.7	96.5	20.6	18.5	95.6	24.5	6.9	51.5	0.0	30.8
LnGrp LOS	E	D	D	F	C	B	F	C	A	D		C
Approach Vol, veh/h		123			1804			1066			40	
Approach Delay, s/veh		47.7			77.7			29.3			42.7	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	42.5	43.0	14.5	20.0	32.0	4.8	52.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	26.5	38.5	35.5	15.5	27.5	10.0	64.0
Max Q Clear Time (g_c+I1), s	3.4	13.4	41.0	5.6	17.6	2.8	2.1	14.2
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	59.0
HCM 2010 LOS	E

Intersection						
Int Delay, s/veh	4.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	497	867	60	124	45
Future Vol, veh/h	21	497	867	60	124	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	578	1008	70	144	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1078	0	-	0	1669	1043
Stage 1	-	-	-	-	1043	-
Stage 2	-	-	-	-	626	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	647	-	-	-	~ 106	279
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	533	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	647	-	-	-	~ 102	279
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	533	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	39.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	647	-	-	-	225	279
HCM Lane V/C Ratio	0.038	-	-	-	0.641	0.188
HCM Control Delay (s)	10.8	-	-	-	45.8	20.9
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.1	-	-	-	3.9	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3	318	1329	246	15	293	21	1546	89	74
v/c Ratio	0.02	0.59	1.22	0.28	0.02	1.07	0.04	0.77	0.48	0.17
Control Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	48.7	143.4	19.9	0.1	122.8	34.3	13.2	58.8	36.7
Queue Length 50th (ft)	2	113	~615	102	0	~238	11	251	63	41
Queue Length 95th (ft)	13	153	#845	187	0	#455	36	504	121	91
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	159	1078	1089	998	887	273	536	1995	258	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	1.22	0.25	0.02	1.07	0.04	0.77	0.34	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Future Volume (veh/h)	3	238	38	1156	214	13	255	18	1345	77	59	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	274	44	1329	246	15	293	21	1546	89	68	6
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	382	61	1126	819	696	282	595	1801	155	418	37
Arrive On Green	0.01	0.12	0.12	0.33	0.44	0.44	0.16	0.32	0.32	0.09	0.25	0.24
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1688	149
Grp Volume(v), veh/h	3	157	161	1329	246	15	293	21	1546	89	0	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1836
Q Serve(g_s), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Cycle Q Clear(g_c), s	0.2	9.6	9.9	37.0	9.6	0.6	18.0	0.9	36.1	5.5	0.0	3.6
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	22	221	222	1126	819	696	282	595	1801	155	0	455
V/C Ratio(X)	0.14	0.71	0.73	1.18	0.30	0.02	1.04	0.04	0.86	0.57	0.00	0.16
Avail Cap(c_a), veh/h	165	563	566	1126	1029	875	282	595	1801	267	0	455
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	47.5	47.7	38.1	20.5	17.9	47.6	26.5	15.9	49.6	0.0	33.4
Incr Delay (d2), s/veh	2.8	4.2	4.5	90.6	0.2	0.0	63.8	0.1	5.6	3.3	0.0	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	0.1	5.0	5.1	31.7	5.0	0.3	13.8	0.5	20.3	2.8	0.0	1.9
LnGrp Delay(d),s/veh	58.0	51.7	52.2	128.7	20.7	17.9	111.3	26.6	21.5	52.9	0.0	34.2
LnGrp LOS	E	D	D	F	C	B	F	C	C	D		C
Approach Vol, veh/h		321			1590			1860			163	
Approach Delay, s/veh		52.0			110.9			35.7			44.4	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	40.1	41.0	18.1	22.0	32.0	5.4	53.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	28.5	36.5	35.5	17.5	27.5	10.0	62.0
Max Q Clear Time (g_c+I1), s	7.5	38.1	39.0	11.9	20.0	5.6	2.2	11.6
Green Ext Time (p_c), s	0.1	0.0	0.0	1.7	0.0	0.3	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1112	615	102	88	27
Future Vol, veh/h	55	1112	615	102	88	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	1293	715	119	102	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	834	0	-	0	2196	775
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	1421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	799	-	-	-	~ 50	398
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	223	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	799	-	-	-	~ 46	398
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	223	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	89.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	799	-	-	-	121	398
HCM Lane V/C Ratio	0.08	-	-	-	0.846	0.079
HCM Control Delay (s)	9.9	-	-	-	112	14.8
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	5.1	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	24	578	1078	144	52
v/c Ratio	0.20	0.47	0.88	0.42	0.15
Control Delay	9.2	6.8	19.4	29.6	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	6.8	19.4	29.6	9.2
Queue Length 50th (ft)	3	82	250	54	0
Queue Length 95th (ft)	16	175	#597	105	24
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)				100	
Base Capacity (vph)	149	1510	1498	556	533
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.38	0.72	0.26	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	21	497	867	60	124	45		
Future Volume (veh/h)	21	497	867	60	124	45		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	24	578	1008	70	144	52		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	232	1248	1154	80	308	275		
Arrive On Green	0.67	0.67	0.67	0.67	0.17	0.17		
Sat Flow, veh/h	521	1863	1722	120	1774	1583		
Grp Volume(v), veh/h	24	578	0	1078	144	52		
Grp Sat Flow(s),veh/h/ln	521	1863	0	1842	1774	1583		
Q Serve(g_s), s	2.2	8.5	0.0	26.8	4.2	1.6		
Cycle Q Clear(g_c), s	29.0	8.5	0.0	26.8	4.2	1.6		
Prop In Lane	1.00			0.06	1.00	1.00		
Lane Grp Cap(c), veh/h	232	1248	0	1234	308	275		
V/C Ratio(X)	0.10	0.46	0.00	0.87	0.47	0.19		
Avail Cap(c_a), veh/h	348	1665	0	1647	601	536		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.1	4.5	0.0	7.6	21.4	20.3		
Incr Delay (d2), s/veh	0.2	0.3	0.0	4.3	1.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	4.4	0.0	14.6	2.1	0.7		
LnGrp Delay(d),s/veh	19.3	4.8	0.0	11.9	22.5	20.7		
LnGrp LOS	B	A		B	C	C		
Approach Vol, veh/h		602	1078		196			
Approach Delay, s/veh		5.4	11.9		22.0			
Approach LOS		A	B		C			
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				43.1		14.5		43.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				51.5		19.5		51.5
Max Q Clear Time (g_c+I1), s				31.0		6.2		28.8
Green Ext Time (p_c), s				4.0		0.4		9.8
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	64	1293	834	102	31
v/c Ratio	0.17	0.93	0.61	0.41	0.12
Control Delay	4.8	22.8	7.4	37.5	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.8	22.8	7.4	37.5	12.3
Queue Length 50th (ft)	7	384	134	49	0
Queue Length 95th (ft)	24	#931	297	90	22
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)					
Base Capacity (vph)	385	1397	1376	392	375
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.93	0.61	0.26	0.08

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	1112	615	102	88	27
Future Volume (veh/h)	55	1112	615	102	88	27
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	64	1293	715	119	102	31
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	447	1395	1167	194	234	209
Arrive On Green	0.75	0.75	0.75	0.75	0.13	0.13
Sat Flow, veh/h	656	1863	1558	259	1774	1583
Grp Volume(v), veh/h	64	1293	0	834	102	31
Grp Sat Flow(s),veh/h/ln	656	1863	0	1817	1774	1583
Q Serve(g_s), s	3.8	43.1	0.0	16.1	4.0	1.3
Cycle Q Clear(g_c), s	19.9	43.1	0.0	16.1	4.0	1.3
Prop In Lane	1.00			0.14	1.00	1.00
Lane Grp Cap(c), veh/h	447	1395	0	1361	234	209
V/C Ratio(X)	0.14	0.93	0.00	0.61	0.44	0.15
Avail Cap(c_a), veh/h	497	1539	0	1501	434	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	7.8	0.0	4.4	30.2	29.1
Incr Delay (d2), s/veh	0.1	9.5	0.0	0.6	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	24.9	0.0	8.1	2.0	0.6
LnGrp Delay(d),s/veh	9.2	17.3	0.0	5.0	31.5	29.4
LnGrp LOS	A	B		A	C	C
Approach Vol, veh/h		1357	834		133	
Approach Delay, s/veh		16.9	5.0		31.0	
Approach LOS		B	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				61.2		14.5		61.2
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				62.5		18.5		62.5
Max Q Clear Time (g_c+I1), s				45.1		6.0		18.1
Green Ext Time (p_c), s				11.6		0.2		7.6

Intersection Summary		
HCM 2010 Ctrl Delay		13.5
HCM 2010 LOS		B

Year 2025 Plus Project Alternative 5 Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	139	1360	333	132	267	83	730	23	18
v/c Ratio	0.01	0.33	1.12	0.37	0.16	1.06	0.12	0.32	0.15	0.04
Control Delay	54.0	43.3	101.5	21.3	3.6	121.0	29.0	1.0	55.1	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	43.3	101.5	21.3	3.6	121.0	29.0	1.0	55.1	30.1
Queue Length 50th (ft)	1	45	~582	148	0	~210	35	0	16	7
Queue Length 95th (ft)	7	73	#879	259	34	#447	99	22	48	30
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	156	898	1215	973	890	253	706	2307	253	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.15	1.12	0.34	0.15	1.06	0.12	0.32	0.09	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	101	21	1197	293	116	235	73	642	20	11	4
Future Volume (veh/h)	1	101	21	1197	293	116	235	73	642	20	11	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	115	24	1360	333	132	267	83	730	23	12	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	268	54	1257	837	712	262	661	2006	88	321	134
Arrive On Green	0.01	0.09	0.09	0.37	0.45	0.45	0.15	0.35	0.35	0.05	0.26	0.25
Sat Flow, veh/h	1774	2931	596	3442	1863	1583	1774	1863	2787	1774	1250	521
Grp Volume(v), veh/h	1	68	71	1360	333	132	267	83	730	23	0	17
Grp Sat Flow(s),veh/h/ln	1774	1770	1758	1721	1863	1583	1774	1863	1393	1774	0	1771
Q Serve(g_s), s	0.1	4.2	4.4	42.0	13.8	5.8	17.0	3.5	11.4	1.4	0.0	0.8
Cycle Q Clear(g_c), s	0.1	4.2	4.4	42.0	13.8	5.8	17.0	3.5	11.4	1.4	0.0	0.8
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	13	162	160	1257	837	712	262	661	2006	88	0	454
V/C Ratio(X)	0.08	0.42	0.44	1.08	0.40	0.19	1.02	0.13	0.36	0.26	0.00	0.04
Avail Cap(c_a), veh/h	162	469	466	1257	1004	854	262	661	2006	262	0	454
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.7	49.4	49.6	36.5	21.2	19.0	49.0	25.1	6.1	52.6	0.0	32.1
Incr Delay (d2), s/veh	2.7	1.7	1.9	50.7	0.3	0.1	60.3	0.4	0.5	1.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	2.2	28.7	7.1	2.5	12.7	1.8	4.5	0.7	0.0	0.4
LnGrp Delay(d),s/veh	59.4	51.1	51.4	87.2	21.5	19.1	109.4	25.4	6.6	54.2	0.0	32.3
LnGrp LOS	E	D	D	F	C	B	F	C	A	D		C
Approach Vol, veh/h		140			1825			1080			40	
Approach Delay, s/veh		51.4			70.3			33.5			44.9	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	44.8	46.0	14.5	21.0	33.5	4.8	55.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	29.0	41.5	30.0	16.5	29.0	10.0	61.5
Max Q Clear Time (g_c+I1), s	3.4	13.4	44.0	6.4	19.0	2.8	2.1	15.8
Green Ext Time (p_c), s	0.0	3.3	0.0	0.7	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	56.2
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	500	873	30	109	45
Future Vol, veh/h	21	500	873	30	109	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	581	1015	35	127	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1050	0	-	0	1662	1033
Stage 1	-	-	-	-	1033	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	663	-	-	-	~ 107	282
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	663	-	-	-	~ 103	282
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	33.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	663	-	-	-	227	282
HCM Lane V/C Ratio	0.037	-	-	-	0.558	0.186
HCM Control Delay (s)	10.6	-	-	-	39.2	20.7
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.1	-	-	-	3.1	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3	335	1329	274	15	311	21	1546	89	74
v/c Ratio	0.02	0.63	1.19	0.30	0.02	1.08	0.04	0.78	0.49	0.17
Control Delay	55.3	52.2	132.4	20.9	0.1	125.5	35.6	14.2	62.6	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	52.2	132.4	20.9	0.1	125.5	35.6	14.2	62.6	39.3
Queue Length 50th (ft)	2	127	~642	122	0	~270	12	292	68	45
Queue Length 95th (ft)	13	168	#860	215	0	#491	36	545	125	94
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	150	868	1116	920	825	287	543	1989	244	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.39	1.19	0.30	0.02	1.08	0.04	0.78	0.36	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	247	44	1156	238	13	271	18	1345	77	59	5
Future Volume (veh/h)	3	247	44	1156	238	13	271	18	1345	77	59	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	284	51	1329	274	15	311	21	1546	89	68	6
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	21	382	68	1150	837	711	296	599	1827	148	402	35
Arrive On Green	0.01	0.13	0.12	0.33	0.45	0.45	0.17	0.32	0.32	0.08	0.24	0.23
Sat Flow, veh/h	1774	3006	533	3442	1863	1583	1774	1863	2787	1774	1688	149
Grp Volume(v), veh/h	3	166	169	1329	274	15	311	21	1546	89	0	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1769	1721	1863	1583	1774	1863	1393	1774	0	1836
Q Serve(g_s), s	0.2	10.8	11.1	40.0	11.4	0.6	20.0	0.9	38.5	5.8	0.0	3.8
Cycle Q Clear(g_c), s	0.2	10.8	11.1	40.0	11.4	0.6	20.0	0.9	38.5	5.8	0.0	3.8
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	21	225	225	1150	837	711	296	599	1827	148	0	437
V/C Ratio(X)	0.14	0.74	0.75	1.16	0.33	0.02	1.05	0.04	0.85	0.60	0.00	0.17
Avail Cap(c_a), veh/h	156	451	451	1150	933	793	296	599	1827	252	0	437
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.5	50.3	50.5	39.9	21.3	18.3	49.9	27.9	15.9	53.0	0.0	36.2
Incr Delay (d2), s/veh	2.9	4.6	5.0	80.3	0.2	0.0	65.8	0.1	5.0	3.9	0.0	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	0.1	5.6	5.7	31.7	5.9	0.3	15.1	0.5	20.9	3.0	0.0	2.1
LnGrp Delay(d),s/veh	61.4	54.9	55.5	120.2	21.5	18.3	115.7	28.0	21.0	56.8	0.0	37.1
LnGrp LOS	E	D	E	F	C	B	F	C	C	E		D
Approach Vol, veh/h		338			1618			1878			163	
Approach Delay, s/veh		55.3			102.5			36.7			47.9	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.5	44.0	19.2	24.0	32.5	5.4	57.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	31.0	39.5	30.0	19.5	28.0	10.0	59.5
Max Q Clear Time (g_c+I1), s	7.8	40.5	42.0	13.1	22.0	5.8	2.2	13.4
Green Ext Time (p_c), s	0.1	0.0	0.0	1.7	0.0	0.3	0.0	1.7

Intersection Summary			
HCM 2010 Ctrl Delay			65.4
HCM 2010 LOS			E

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1115	623	62	73	27
Future Vol, veh/h	55	1115	623	62	73	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	1297	724	72	85	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	796	0	-	0	2185	760
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	1425	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	826	-	-	-	~ 50	406
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	222	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	826	-	-	-	~ 46	406
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	222	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	66.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	826	-	-	-	121	406
HCM Lane V/C Ratio	0.077	-	-	-	0.702	0.077
HCM Control Delay (s)	9.7	-	-	-	85.5	14.6
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	3.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	24	581	1050	127	52
v/c Ratio	0.18	0.48	0.87	0.37	0.15
Control Delay	8.3	7.0	18.5	28.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	7.0	18.5	28.0	9.2
Queue Length 50th (ft)	3	78	223	42	0
Queue Length 95th (ft)	15	175	511	94	25
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)					
Base Capacity (vph)	169	1573	1565	576	551
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.37	0.67	0.22	0.09

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	500	873	30	109	45
Future Volume (veh/h)	21	500	873	30	109	45
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	24	581	1015	35	127	52
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	242	1226	1178	41	319	285
Arrive On Green	0.66	0.66	0.66	0.66	0.18	0.18
Sat Flow, veh/h	535	1863	1790	62	1774	1583
Grp Volume(v), veh/h	24	581	0	1050	127	52
Grp Sat Flow(s),veh/h/ln	535	1863	0	1852	1774	1583
Q Serve(g_s), s	2.1	8.6	0.0	24.9	3.5	1.5
Cycle Q Clear(g_c), s	26.9	8.6	0.0	24.9	3.5	1.5
Prop In Lane	1.00			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	242	1226	0	1219	319	285
V/C Ratio(X)	0.10	0.47	0.00	0.86	0.40	0.18
Avail Cap(c_a), veh/h	389	1735	0	1725	613	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	4.7	0.0	7.5	20.1	19.3
Incr Delay (d2), s/veh	0.2	0.3	0.0	3.4	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.5	0.0	13.4	1.8	0.7
LnGrp Delay(d),s/veh	18.3	5.0	0.0	10.9	20.9	19.6
LnGrp LOS	B	A		B	C	B
Approach Vol, veh/h		605	1050		179	
Approach Delay, s/veh		5.5	10.9		20.6	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				41.1		14.5		41.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				51.8		19.2		51.8
Max Q Clear Time (g_c+I1), s				28.9		5.5		26.9
Green Ext Time (p_c), s				4.1		0.4		9.7

Intersection Summary			
HCM 2010 Ctrl Delay			10.0
HCM 2010 LOS			B

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	64	1297	796	85	31
v/c Ratio	0.15	0.93	0.57	0.34	0.13
Control Delay	4.5	22.7	6.9	36.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	22.7	6.9	36.1	12.4
Queue Length 50th (ft)	7	388	124	41	0
Queue Length 95th (ft)	24	#937	274	78	22
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)					
Base Capacity (vph)	414	1400	1387	393	376
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.93	0.57	0.22	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	1115	623	62	73	27
Future Volume (veh/h)	55	1115	623	62	73	27
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	64	1297	724	72	85	31
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	474	1397	1250	124	234	209
Arrive On Green	0.75	0.75	0.75	0.75	0.13	0.13
Sat Flow, veh/h	679	1863	1668	166	1774	1583
Grp Volume(v), veh/h	64	1297	0	796	85	31
Grp Sat Flow(s),veh/h/ln	679	1863	0	1833	1774	1583
Q Serve(g_s), s	3.5	43.6	0.0	14.6	3.3	1.3
Cycle Q Clear(g_c), s	18.1	43.6	0.0	14.6	3.3	1.3
Prop In Lane	1.00			0.09	1.00	1.00
Lane Grp Cap(c), veh/h	474	1397	0	1375	234	209
V/C Ratio(X)	0.14	0.93	0.00	0.58	0.36	0.15
Avail Cap(c_a), veh/h	524	1533	0	1509	432	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	7.8	0.0	4.2	30.1	29.2
Incr Delay (d2), s/veh	0.1	9.8	0.0	0.5	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	25.4	0.0	7.3	1.7	0.6
LnGrp Delay(d),s/veh	8.3	17.6	0.0	4.7	31.0	29.5
LnGrp LOS	A	B		A	C	C
Approach Vol, veh/h		1361	796		116	
Approach Delay, s/veh		17.2	4.7		30.6	
Approach LOS		B	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				61.4		14.5		61.4
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				62.5		18.5		62.5
Max Q Clear Time (g_c+I1), s				45.6		5.3		16.6
Green Ext Time (p_c), s				11.4		0.2		7.0

Intersection Summary			
HCM 2010 Ctrl Delay			13.5
HCM 2010 LOS			B

Year 2025 Plus Project Alternative 5B Condition
Intersection Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	122	1360	313	152	253	97	730	33	24
v/c Ratio	0.01	0.28	1.15	0.35	0.18	1.01	0.15	0.33	0.20	0.05
Control Delay	51.0	40.9	111.9	20.3	3.4	109.2	30.5	1.1	53.0	30.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	40.9	111.9	20.3	3.4	109.2	30.5	1.1	53.0	30.3
Queue Length 50th (ft)	1	38	~565	131	0	179	50	0	22	10
Queue Length 95th (ft)	7	64	#863	235	36	#409	110	23	60	36
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	164	1112	1184	1063	968	250	649	2230	266	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	1.15	0.29	0.16	1.01	0.15	0.33	0.12	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	92	15	1197	275	134	223	85	642	29	17	4
Future Volume (veh/h)	1	92	15	1197	275	134	223	85	642	29	17	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	105	17	1360	312	152	253	97	730	33	19	5
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	13	294	47	1226	828	704	259	632	1938	111	364	96
Arrive On Green	0.01	0.10	0.09	0.36	0.44	0.44	0.15	0.34	0.34	0.06	0.26	0.25
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1422	374
Grp Volume(v), veh/h	1	60	62	1360	312	152	253	97	730	33	0	24
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1797
Q Serve(g_s), s	0.1	3.5	3.6	39.0	12.2	6.5	15.6	4.0	11.8	1.9	0.0	1.1
Cycle Q Clear(g_c), s	0.1	3.5	3.6	39.0	12.2	6.5	15.6	4.0	11.8	1.9	0.0	1.1
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	13	170	170	1226	828	704	259	632	1938	111	0	459
V/C Ratio(X)	0.08	0.35	0.37	1.11	0.38	0.22	0.98	0.15	0.38	0.30	0.00	0.05
Avail Cap(c_a), veh/h	170	582	584	1226	1097	933	259	632	1938	275	0	459
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	46.3	46.4	35.3	20.3	18.7	46.6	25.2	6.9	49.0	0.0	30.8
Incr Delay (d2), s/veh	2.5	1.2	1.3	61.2	0.3	0.2	49.0	0.5	0.6	1.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	1.8	28.8	6.3	2.9	11.1	2.1	4.6	1.0	0.0	0.6
LnGrp Delay(d),s/veh	56.5	47.6	47.7	96.5	20.6	18.8	95.6	25.7	7.4	50.5	0.0	31.0
LnGrp LOS	E	D	D	F	C	B	F	C	A	D		C
Approach Vol, veh/h		123			1824			1080			57	
Approach Delay, s/veh		47.7			77.0			29.7			42.3	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	41.2	43.0	14.5	20.0	32.0	4.8	52.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	26.5	38.5	35.5	15.5	27.5	10.0	64.0
Max Q Clear Time (g_c+I1), s	3.9	13.8	41.0	5.6	17.6	3.1	2.1	14.2
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	0.1	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	58.7
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	500	873	30	109	45
Future Vol, veh/h	21	500	873	30	109	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	581	1015	35	127	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1050	0	-	0	1662	1033
Stage 1	-	-	-	-	1033	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	663	-	-	-	~ 107	282
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	663	-	-	-	~ 103	282
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	33.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	663	-	-	-	227	282
HCM Lane V/C Ratio	0.037	-	-	-	0.558	0.186
HCM Control Delay (s)	10.6	-	-	-	39.2	20.7
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.1	-	-	-	3.1	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3	318	1329	246	43	293	39	1546	99	81
v/c Ratio	0.02	0.59	1.22	0.28	0.05	1.07	0.07	0.78	0.51	0.18
Control Delay	52.3	48.7	143.4	19.9	0.3	122.8	34.6	13.8	59.7	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	48.7	143.4	19.9	0.3	122.8	34.6	13.8	59.7	37.0
Queue Length 50th (ft)	2	113	~615	102	0	~238	21	265	70	46
Queue Length 95th (ft)	13	153	#845	187	1	#455	56	521	131	97
Internal Link Dist (ft)		205		340			699			322
Turn Bay Length (ft)			140			250		300		
Base Capacity (vph)	159	1078	1089	998	887	273	531	1980	258	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	1.22	0.25	0.05	1.07	0.07	0.78	0.38	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	238	38	1156	214	37	255	34	1345	86	65	5
Future Volume (veh/h)	3	238	38	1156	214	37	255	34	1345	86	65	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	274	44	1329	246	43	293	39	1546	99	75	6
Adj No. of Lanes	1	2	0	2	1	1	1	1	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	382	61	1126	819	696	282	592	1797	158	421	34
Arrive On Green	0.01	0.12	0.12	0.33	0.44	0.44	0.16	0.32	0.32	0.09	0.25	0.24
Sat Flow, veh/h	1774	3061	486	3442	1863	1583	1774	1863	2787	1774	1703	136
Grp Volume(v), veh/h	3	157	161	1329	246	43	293	39	1546	99	0	81
Grp Sat Flow(s),veh/h/ln	1774	1770	1777	1721	1863	1583	1774	1863	1393	1774	0	1839
Q Serve(g_s), s	0.2	9.6	9.9	37.0	9.6	1.8	18.0	1.7	35.9	6.1	0.0	3.9
Cycle Q Clear(g_c), s	0.2	9.6	9.9	37.0	9.6	1.8	18.0	1.7	35.9	6.1	0.0	3.9
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	22	221	222	1126	819	696	282	592	1797	158	0	455
V/C Ratio(X)	0.14	0.71	0.73	1.18	0.30	0.06	1.04	0.07	0.86	0.63	0.00	0.18
Avail Cap(c_a), veh/h	165	563	566	1126	1029	875	282	592	1797	267	0	455
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	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	47.5	47.7	38.1	20.5	18.3	47.6	26.9	16.0	49.7	0.0	33.5
Incr Delay (d2), s/veh	2.8	4.2	4.5	90.6	0.2	0.0	63.8	0.2	5.7	4.1	0.0	0.9
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	0.1	5.0	5.1	31.7	5.0	0.8	13.8	0.9	20.3	3.2	0.0	2.1
LnGrp Delay(d),s/veh	58.0	51.7	52.2	128.7	20.7	18.3	111.3	27.1	21.7	53.8	0.0	34.4
LnGrp LOS	E	D	D	F	C	B	F	C	C	D		C
Approach Vol, veh/h		321			1618			1878			180	
Approach Delay, s/veh		52.0			109.3			35.8			45.0	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	39.9	41.0	18.1	22.0	32.0	5.4	53.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	28.5	36.5	35.5	17.5	27.5	10.0	62.0
Max Q Clear Time (g_c+I1), s	8.1	37.9	39.0	11.9	20.0	5.9	2.2	11.6
Green Ext Time (p_c), s	0.1	0.0	0.0	1.7	0.0	0.3	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	67.3
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	1115	623	62	73	27
Future Vol, veh/h	55	1115	623	62	73	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	1297	724	72	85	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	796	0	-	0	2185	760
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	1425	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	826	-	-	-	~ 50	406
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	222	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	826	-	-	-	~ 46	406
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	222	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	66.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	826	-	-	-	121	406
HCM Lane V/C Ratio	0.077	-	-	-	0.702	0.077
HCM Control Delay (s)	9.7	-	-	-	85.5	14.6
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	3.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	24	581	1050	127	52
v/c Ratio	0.18	0.48	0.87	0.37	0.15
Control Delay	8.3	7.0	18.5	28.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	7.0	18.5	28.0	9.2
Queue Length 50th (ft)	3	78	223	42	0
Queue Length 95th (ft)	15	175	511	94	25
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)					
Base Capacity (vph)	169	1573	1565	576	551
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.37	0.67	0.22	0.09

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	500	873	30	109	45
Future Volume (veh/h)	21	500	873	30	109	45
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	24	581	1015	35	127	52
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	242	1226	1178	41	319	285
Arrive On Green	0.66	0.66	0.66	0.66	0.18	0.18
Sat Flow, veh/h	535	1863	1790	62	1774	1583
Grp Volume(v), veh/h	24	581	0	1050	127	52
Grp Sat Flow(s),veh/h/ln	535	1863	0	1852	1774	1583
Q Serve(g_s), s	2.1	8.6	0.0	24.9	3.5	1.5
Cycle Q Clear(g_c), s	26.9	8.6	0.0	24.9	3.5	1.5
Prop In Lane	1.00			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	242	1226	0	1219	319	285
V/C Ratio(X)	0.10	0.47	0.00	0.86	0.40	0.18
Avail Cap(c_a), veh/h	389	1735	0	1725	613	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	4.7	0.0	7.5	20.1	19.3
Incr Delay (d2), s/veh	0.2	0.3	0.0	3.4	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.5	0.0	13.4	1.8	0.7
LnGrp Delay(d),s/veh	18.3	5.0	0.0	10.9	20.9	19.6
LnGrp LOS	B	A		B	C	B
Approach Vol, veh/h		605	1050		179	
Approach Delay, s/veh		5.5	10.9		20.6	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				41.1		14.5		41.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				51.8		19.2		51.8
Max Q Clear Time (g_c+I1), s				28.9		5.5		26.9
Green Ext Time (p_c), s				4.1		0.4		9.7

Intersection Summary			
HCM 2010 Ctrl Delay			10.0
HCM 2010 LOS			B

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	64	1297	796	85	31
v/c Ratio	0.15	0.93	0.57	0.34	0.13
Control Delay	4.5	22.7	6.9	36.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	22.7	6.9	36.1	12.4
Queue Length 50th (ft)	7	388	124	41	0
Queue Length 95th (ft)	24	#937	274	78	22
Internal Link Dist (ft)		771	616	378	
Turn Bay Length (ft)					
Base Capacity (vph)	414	1400	1387	393	376
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.93	0.57	0.22	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	1115	623	62	73	27
Future Volume (veh/h)	55	1115	623	62	73	27
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	64	1297	724	72	85	31
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	474	1397	1250	124	234	209
Arrive On Green	0.75	0.75	0.75	0.75	0.13	0.13
Sat Flow, veh/h	679	1863	1668	166	1774	1583
Grp Volume(v), veh/h	64	1297	0	796	85	31
Grp Sat Flow(s),veh/h/ln	679	1863	0	1833	1774	1583
Q Serve(g_s), s	3.5	43.6	0.0	14.6	3.3	1.3
Cycle Q Clear(g_c), s	18.1	43.6	0.0	14.6	3.3	1.3
Prop In Lane	1.00			0.09	1.00	1.00
Lane Grp Cap(c), veh/h	474	1397	0	1375	234	209
V/C Ratio(X)	0.14	0.93	0.00	0.58	0.36	0.15
Avail Cap(c_a), veh/h	524	1533	0	1509	432	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	7.8	0.0	4.2	30.1	29.2
Incr Delay (d2), s/veh	0.1	9.8	0.0	0.5	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	25.4	0.0	7.3	1.7	0.6
LnGrp Delay(d),s/veh	8.3	17.6	0.0	4.7	31.0	29.5
LnGrp LOS	A	B		A	C	C
Approach Vol, veh/h		1361	796		116	
Approach Delay, s/veh		17.2	4.7		30.6	
Approach LOS		B	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				61.4		14.5		61.4
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				62.5		18.5		62.5
Max Q Clear Time (g_c+I1), s				45.6		5.3		16.6
Green Ext Time (p_c), s				11.4		0.2		7.0

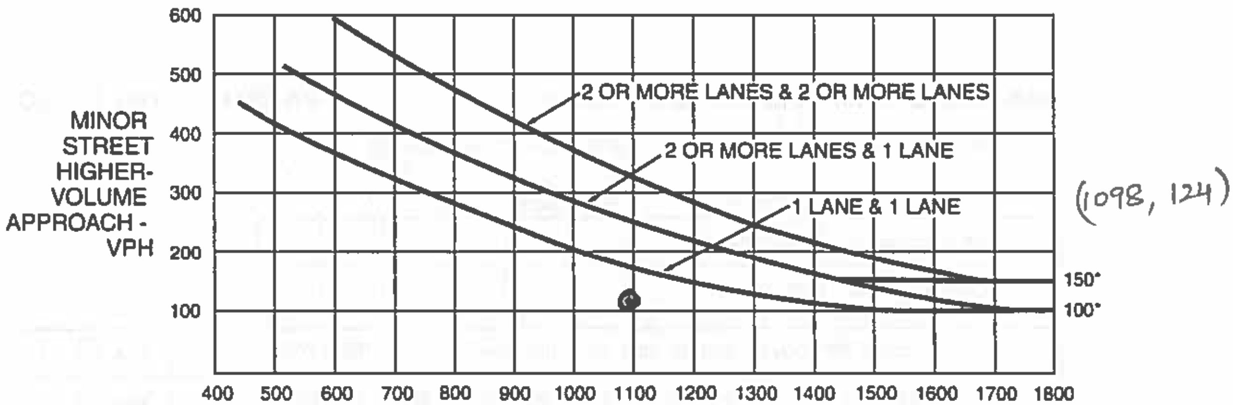
Intersection Summary		
HCM 2010 Ctrl Delay		13.5
HCM 2010 LOS		B

Attachment C
Traffic Signal Warrants

EXISTING (2017)

Del Mar Ave & Audubon Dr

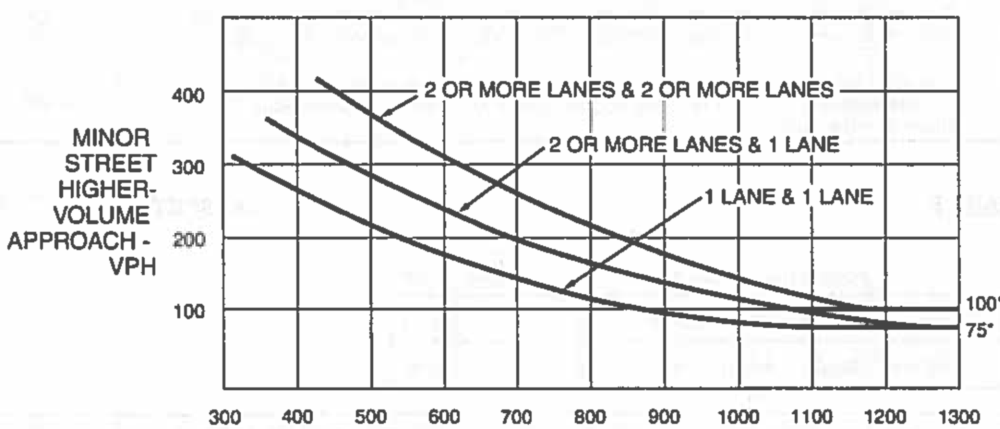
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

EXISTING (2017)

Del Mar Ave & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume — **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More				Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) — **SATISFIED YES ☐ NO ☒**

<u>PART A</u> — **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

AM
20.2 sec × 124
=> 0.7 veh-hr

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

<u>PART B</u> — **SATISFIED YES ☐ NO ☒**

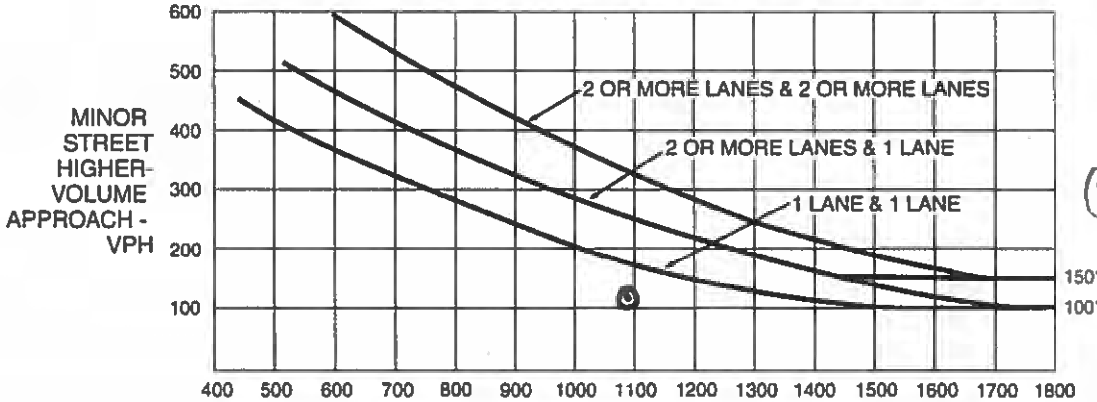
APPROACH LANES	One	2 or More	AM Hour
Both Approaches - Major Street	X		1098
Higher Approach - Minor Street	X		124

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☒
<u>OR</u>, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

EXISTING (2017) + PROJECT
Del Mar Ave & Audubon Dr

Figure 4C-3. Warrant 3, Peak Hour



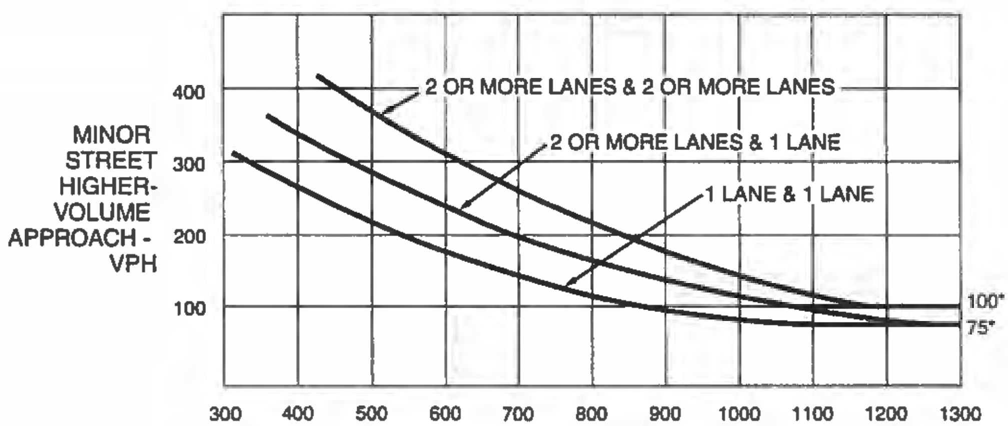
(1098, 124)

MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

(2017)
EXISTING + PROJECT
Del Mar Ave & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour SATISFIED YES ☐ NO ☒
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☒
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

AM
20.2 sec x 124
=> 0.7 veh-hr

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1098
Higher Approach - Minor Street	X		124

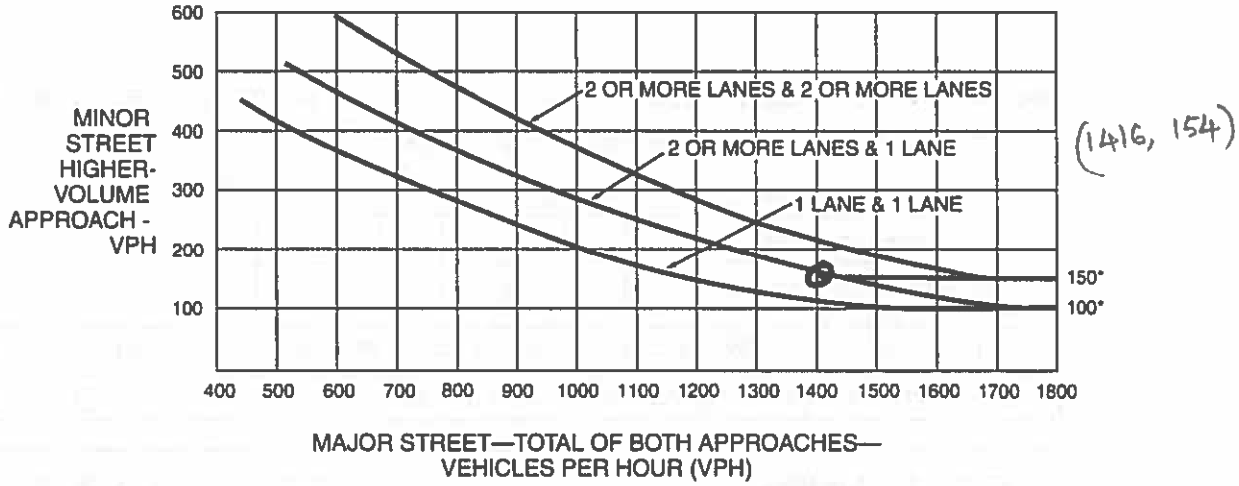
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☒
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

YEAR 2025 BASELINE

Del Mar Ave & Audubon Dr

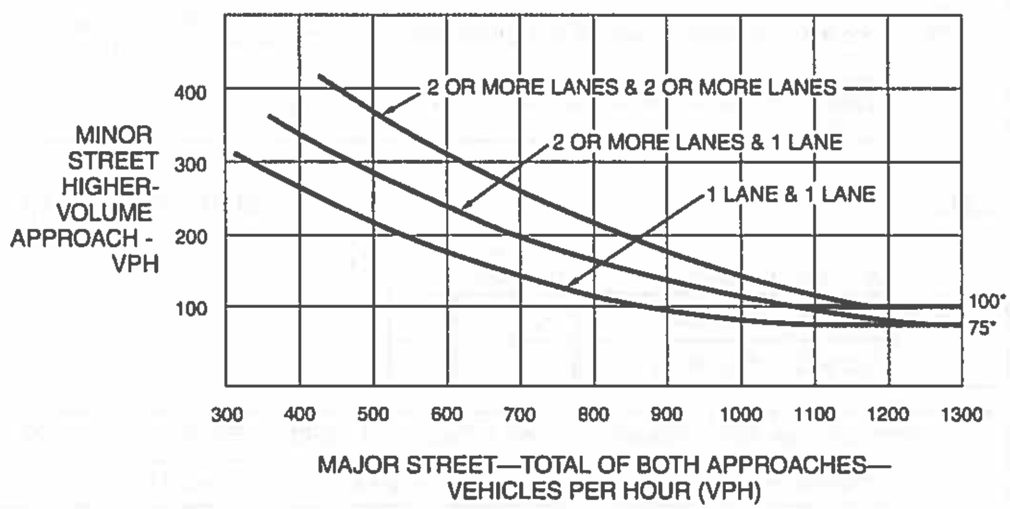
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

YEAR 2025 BASELINE
Del Mar Ave & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour	Hour	Hour	Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour SATISFIED YES ☒ NO ☐
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☐
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

PART B SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1416
Higher Approach - Minor Street	X		154

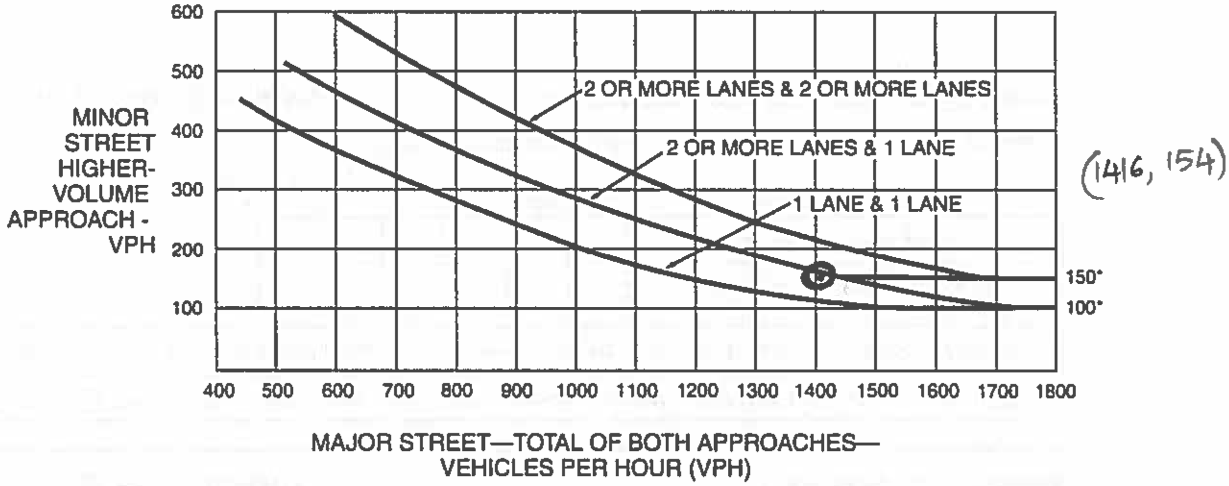
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☒ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

YEAR 2025 + PROJECT

Del Mar Ave & Audubon Dr

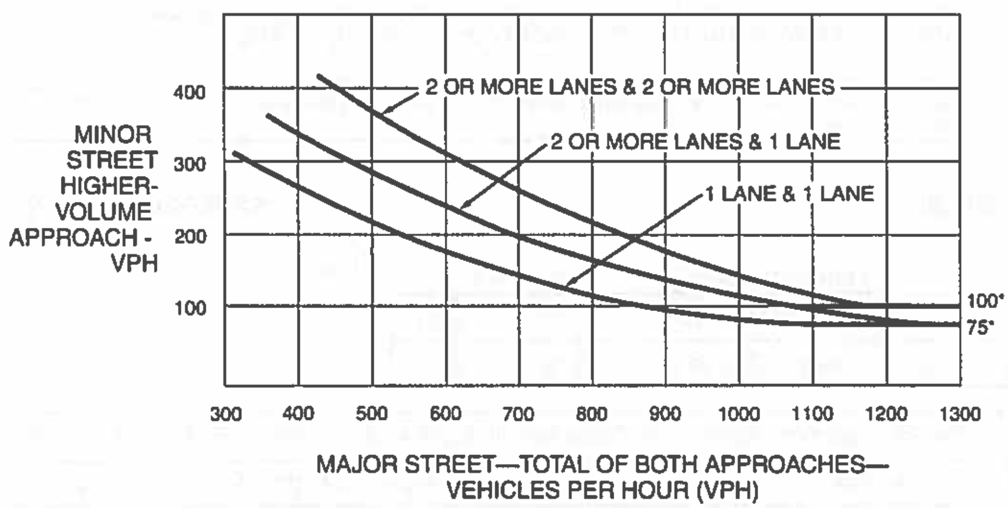
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

YEAR 2025 + PROJECT
Del Mar Ave & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour SATISFIED YES ☒ NO ☐
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☐
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

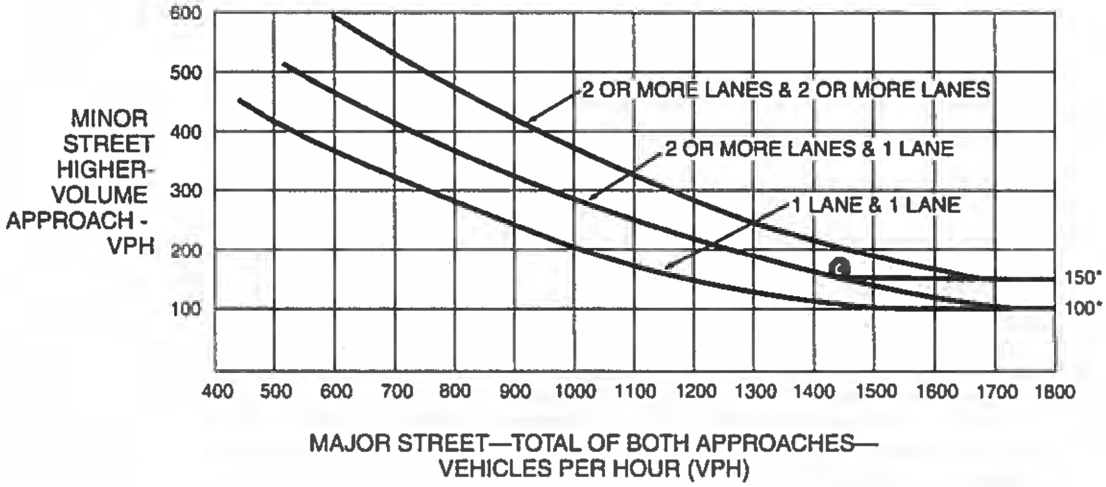
PART B SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1416
Higher Approach - Minor Street	X		154

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☒ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-3. Warrant 3, Peak Hour

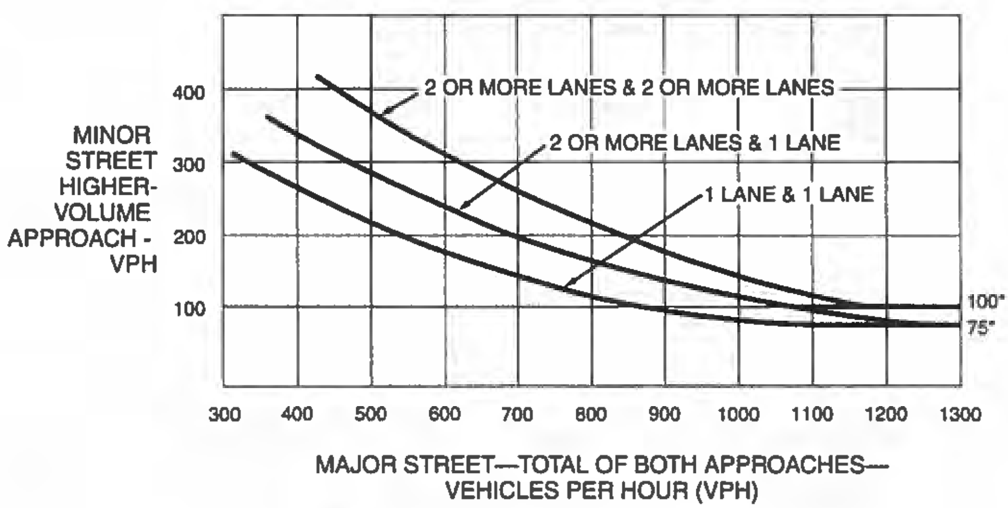


(1446, 169)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

YEAR 2025 + PROJECT + ALT 1
Del Mar Ave & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour	Hour	Hour	Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1446
Higher Approach - Minor Street	X		169

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☒ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

YEAR 2025+ PROJECT + ALT 5

Del Mar Ave & Audubon Dr

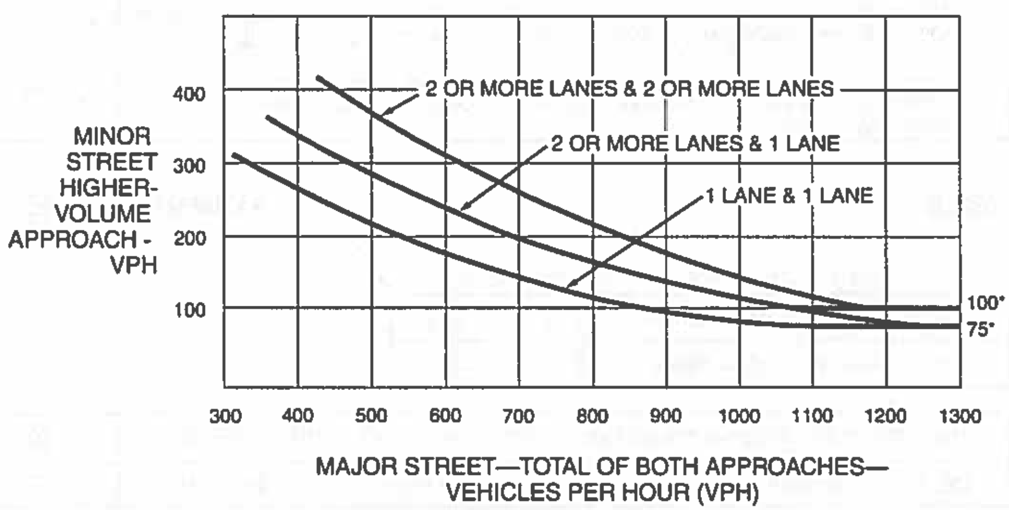
Figure 4C-3. Warrant 3, Peak Hour

(1425, 154)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

YEAR 2025 + PROJECT + ALT 5
Del Mar Ave. & Audubon Dr

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume — **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour	Hour	Hour	Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) — **SATISFIED YES ☒ NO ☐**

<u>PART A</u> — **SATISFIED YES ☐ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

<u>PART B</u> — **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1425
Higher Approach - Minor Street	X		154

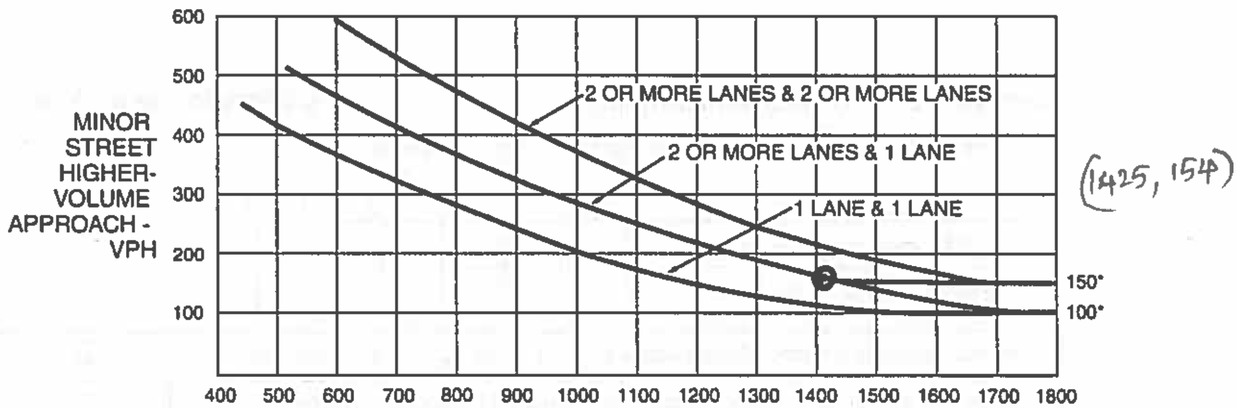
The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☒ No ☐
<u>OR</u>, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

YEAR 2025 + PROJECT + ALT 5B

Del Mar Ave & Audubon Dr

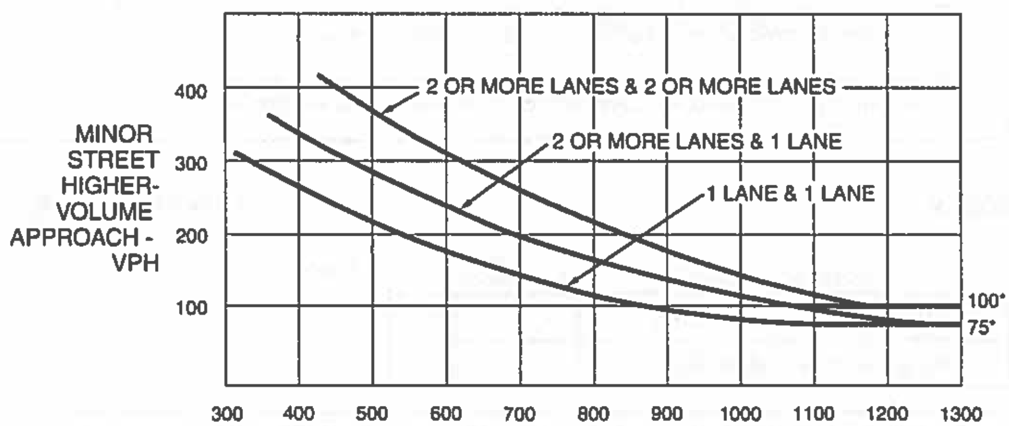
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

YEAR 2025 + PROJECT + ALT 5B
Del Mar Ave & Audubon Dr.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour	Hour	Hour	Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1425
Higher Approach - Minor Street	X		154

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☒ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.