**California Environmental Quality Act**

# Initial Study / Environmental Checklist

**Proposed Project:**

## Peach Avenue Widening
## Between Jensen and Butler Avenues
**Fresno, California**


**Lead Agency and Project Sponsor:**

City of Fresno

Department of Public Works – Capital Management Division

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# Executive Summary

The City of Fresno Department of Public Works (DPW) is proposing to undertake the Peach Avenue Widening Between Jensen and Butler Avenues Project (project). Pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, this Initial Study has been prepared to determine whether an environmental impact report (EIR) or a Negative Declaration should be prepared for the project.

The project encompasses an approximately 1.57-mile segment of Peach Avenue in southeast Fresno, referred to in this Initial Study as the "project area." The segment extends from Butler Avenue on the north to a point approximately 730 feet south of Jensen Avenue on the south. The entire road segment is within with the City of Fresno except the portion south of Jensen Avenue, which is within the County of Fresno. The City proposes to construct improvements in the county area to allow a safe transition of Peach Avenue from a four-lane arterial street north of Jensen Avenue to a two-lane street south of Jensen Avenue.

The project would result in the improvement of Peach Avenue to the City's arterial street standard. Peach Avenue would have curb, gutter, and sidewalks; bike lanes; four travel lanes; protected left-turn lanes; and landscaped median islands. The project includes a new traffic signal at Peach and Hamilton Avenues and modifications to existing traffic signals, Fresno Irrigation District facilities, and the railroad crossing on the California Avenue alignment.

In order to widen Peach Avenue to a four-lane arterial street, the City must acquire or obtain by dedication additional land along segments of the road where the existing public right-of-way is too narrow to accommodate the proposed arterial street improvements.

This Initial Study determined that the project could have significant construction-related aesthetic, biological resources, hydrology and water quality, and noise impacts. To avoid the impacts or to reduce them to an insignificant level, the City has incorporated the mitigation measures listed below in the project. A number of City of Fresno General Plan MEIR measures are also applicable to the project and have been identified on the MEIR Mitigation Monitoring Checklist included as Attachment 1 of this Initial Study.

**Mitigation Measure AES-1:**

The City shall replace, on a 1:1 basis, trees removed to widen Peach Avenue between Hamilton Avenue and the California Avenue alignment. The City shall plant the replacement trees within or adjacent to the street right-of-way in the same general vicinity as the removed trees. An irrigation system shall be provided for the trees.

**Mitigation Measure BIO-1:**

a. The project shall initiate construction outside of the nesting season. This work shall include the removal of all potential nest trees that must be removed for project construction between September 1st and January 31st (outside of the nesting season), or

b. If tree removal, brushing, grading, or construction must occur between the months of February and August, a qualified biologist will conduct pre-construction surveys for active nests within 30 days of the onset of these activities or after a break of more than 30 days. Surveys for burrowing owls will be in conformance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

c. Should active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged.

**Mitigation Measure HYD-1:**

a. The City shall construct the Storm Drainage and Flood Control Master Plan facilities shown on Exhibit Nos. 1, 2, and 3 in a letter regarding the project from Gary Chapman, Engineering Technician III, FMFCD, to Michael W. Holly, City of Fresno, Capital Management Division (August 26, 2013). The City shall execute a Development Agreement with the FMFCD for any construction reimbursement costs.

b. Construction of the Master Plan facilities identified on Exhibit Nos. 1 and 2 as "Master Plan Facilities to be Constructed by Developer", will provide permanent drainage service to the portion of the project located in Drainage Area "BE". The portion of the project located in Drainage Area "BD" will not have permanent service. FMFCD recommends temporary facilities until permanent service is available in Drainage Area "BD". Drainage Areas "BF" and "PP" should not be affected provided the project maintains the conformity to the Master Plan.

c. The City of Fresno and the FMFCD's Operations Department shall coordinate the project and identify the FMFCD manhole locations for protection and adjustment to the new surface elevations.

d. Should the City desire the FMFCD to fund the Master Plan facilities, the City shall give a minimum of twelve (12) months prior notice of construction of the project. If funding is unavailable, the City shall construct the Master Plan facilities and FMFCD will provide reimbursement from future drainage fees paid within the corresponding drainage area.

e. FMFCD shall review and approve the project's final improvement plans for all proposed development (i.e. grading, street improvement, and storm drain) for conformance to the Master Plan prior to project implementation.

f. The project area contains a portion of a canal or pipeline used to manage recharge, storm water, and/or flood flows. The City shall preserve the existing capacity as part of project development. Additionally, project development shall not interfere with the ability to operate and maintain the canal or pipeline.

**Mitigation Measure NOI-1:**

The following measures shall be implemented to reduce construction-generated noise levels:

a. Construction activities (excluding activities that would result in a safety concern to the public or construction workers, would result in an extreme hardship, or instances where the City finds that the greater public interest would be served) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m., in accordance with City of Fresno Municipal Code requirements. Construction activities shall be prohibited on Sundays and legal holidays.

b. Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

c. Edith B. Storey Elementary School shall be notified a minimum of one week prior to commencing construction activities within 500 feet of the school. Notification shall be provided so that any necessary precautions (such as rescheduling or relocation of interior noise-sensitive activities) can be implemented. The written notice shall include the name and telephone number of the individual empowered to manage construction noise from the project. In the event that noise complaints are received, the individual empowered to manage construction noise shall respond to the complaint within 12 hours. To the extent feasible, the response shall include identification of measures being taken to reduce construction-related noise. Such measures may include, but are not limited to, rescheduling of construction activities, relocation of equipment, and/or use of equipment noise shields or temporary noise barriers.

**Determination:**

This Initial Study indicates that although the Peach Avenue Widening Between Jensen and Butler Avenues Project is a subsequent project identified in the City of Fresno General Plan MEIR, it is not fully within the scope of the MEIR because the proposed project could have significant effects on the environment that were not examined in the MEIR. However, there will not be significant effects in this case because mitigation measures incorporated in the project by the City of Fresno will avoid or reduce the effects to less than significant. Project-specific mitigation measures and all applicable mitigation measures contained in the MEIR Mitigation Monitoring Checklist will be imposed on the project. Therefore, a Mitigated Negative Declaration will be prepared.

# A. Project Background Information

## 1. Project Title, Lead Agency, and Contact Information

| | |
|---|---|
| **Project Title:** | Peach Avenue Widening Between Jensen and Butler Avenues |
| **Lead Agency and Project Sponsor's Name and Address:** | City of Fresno<br>Department of Public Works<br>Capital Management Division<br>2600 Fresno Street, Room 4016<br>Fresno, CA 93721-3615 |
| **Contact Information:** | Scott Tyler, P.E., Public Works Manager<br>Phone: (559) 621-8654, Fax (559) 488-1045<br>Email: Scott.Tyler@fresno.gov |

## 2. Project Location[1]

Figures 1 and 2 and the following table present the location of the proposed Peach Avenue Widening Between Jensen and Butler Avenues Project ("project" or "Peach Avenue Project"). Figure 1 shows the location in relation to the Fresno-Clovis metropolitan area, and Figure 2 provides a more detailed view of the location in southeast Fresno. The project location table provides jurisdictional and other information related to the project location.

The project encompasses an approximately 1.57-mile segment of Peach Avenue in southeast Fresno, referred to in this initial study as the "project area." The segment extends from Butler Avenue on the north to a point approximately 730 feet south of Jensen Avenue on the south. The entire road segment is within with the City of Fresno except the portion south of Jensen Avenue, which is within the County of Fresno. The City proposes to construct improvements in the county area to allow a safe transition of Peach Avenue from a four-lane arterial street north of Jensen Avenue to a two-lane road south of Jensen Avenue.

**Table A-1**
**Project Location**

| | |
|---|---|
| City | Fresno |
| County | Fresno |
| Zip Code(s) | 93725 & 93727 |
| Major Cross Streets<br>(North to South) | Peach Avenue & Butler Avenue<br>Peach Avenue & Church Avenues<br>Peach Avenue & Jensen Avenue |
| Approximate Total Area | 14.5 acres |
| Approximate Length & Width | Length: 1.57 miles<br>Width: 120 feet |
| Elevation | Approximately 310 ft. AMSL |
| USGS Map | Malaga, California |

[1] The figures cited in this document are located following the text of the document.

| **Table A-1**<br>**Project Location** | |
|---|---|
| Section, Township & Range | Por. Sec. 7, 8, 17, 18, & 19, T. 14 S., R. 21 E. M. D. B. & M. |
| Latitude / Longitude | At Peach & Butler Avenues: 36°43'42.72"N; 119°43'06.45"W<br>Peach Ave. 700 feet south of Jensen Ave.: 36°42'20.33"N; 119°43'06.72"W |
| Aerial Photography | Figures 4 through 7 present aerials views of the project area. |

In order to widen Peach Avenue to a four-lane arterial street, the City must acquire or obtain by dedication additional land along sections of the road where the existing public right-of-way is too narrow to accommodate the proposed arterial street improvements. The locations and Assessor's Parcel Numbers of the parcels from which additional land would be required are as follows:

- Ponding basin on the east side of Peach Avenue, south of Hamilton Avenue (Fresno County Assessor's Parcel Numbers (APN) 473-121-01, -02, -03, and -04),
- Vacant land on the west side of Peach Avenue, between the California Avenue alignment and the Florence Avenue alignment (APNs 481-020-31 and -47),
- Vacant land on the east side of Peach Avenue, between Florence and Church Avenues (APN 481-020-66S),
- Vacant and agricultural land on the west side of Peach Avenue, between Church and Jensen Avenues (APNs 481-090-28, 481-030-03 and -04), and
- Other land as may be necessary to implement the project.

The depth of the additional land needed along Peach Avenue measured from the edge of the existing right-of-way would vary from approximately 5 feet to 30 feet. No residences exist on any of the parcels from which additional right-of-way would be required. No additional right-of-way would be required south of Jensen Avenue.

## 3. Project Objectives

The City of Fresno's objectives for the Peach Avenue Widening Project are to:

1) Further implementation of Objective MT-1 in the Fresno General Plan: to "create and maintain a transportation system that is safe, efficient, provides access in an equitable manner, and optimizes travel for all modes."

2) Complete the development of Peach Avenue as an arterial street between Butler and Jensen Avenues in accordance with the City of Fresno General Plan Land Use and Circulation Map. The Fresno General Plan defines arterial streets as "four-to six-lane divided (median island separation) roadways, with somewhat limited access to abutting properties, and with the primary purpose of moving traffic within and between neighborhoods and to and from freeways and expressways. In addition to major street intersections, appropriately designed and spaced local street intersections may allow left-turn movements to and from the arterial streets."

3) Minimize the disruption of traffic flow during project construction.

4) Minimize the effects of construction-related noise, dust, and other potential nuisance conditions on nearby residents during project construction.

## 4. Project Description[2]

**Existing Condition**

Existing Peach Avenue from Jensen Avenue to Butler Avenue contains fully- and partially-developed arterial street sections, as well as rural, two-lane sections. The existing developed sections generally conform to Case 1 or Case 2 of City of Fresno Standard Drawing P-52, "Arterial Street Cross-Section" (see Figure 3).

Peach Avenue intersects with four major streets and seven local streets between Jensen and Butler Avenues. The major streets include Butler Avenue, designated as a scenic arterial street by the Fresno General Plan; Church Avenue, designated as a collector street; and Jensen Avenue, designated as a super arterial. The Peach Avenue intersections with Butler, Church and Jensen Avenues have traffic signals.

**Proposed Street Design and Improvements**

Figure 3 shows the proposed street cross section for Peach Avenue as delineated on City Standard Drawing P-52, "Arterial Street Cross-Section." The standard drawing presents three design cases for an arterial street:

Case 1: Divided Arterial – No Parking (Right-of-Way: 100 to 106 feet)

Case 2: Divided Arterial – No Parking and Wider Outside Travel Lane (Right-of-Way: 110 feet)

Case 3: Divided Arterial – With Parking or School Drop-Off Zones (Right-of-Way: 110 feet)

As required under Standard Drawing P-52, the Case 1 design would apply to most of the Peach Avenue segment encompassed by the project. Case 2 would apply only for gap filling between existing Case 2 arterials, and Case 3 would apply on the east side of Peach Avenue south of the California Avenue Alignment along the City-owned property.

All three cases provide for the development of curb, gutter, and sidewalks; bike lanes; four travel lanes; protected left-turn lanes; and landscaped median islands. The City may develop planter areas between the sidewalks and curbs under all three cases. Case 3 allows on-street parking.

The project would include the development of street approaches for residential subdivisions proposed for development along Peach Avenue if the designs of the streets within the subdivisions are known before the city initiates the street widening project.

The design speed proposed for the project is 45 mph. This design speed was used to design transitions.

**Traffic Signal Improvements**

Peach and Church Avenues: The project includes modification of the installed signals as necessary to conform with the project plans and improvements.

Peach and Jensen Avenues: The project includes modifying the existing traffic signal facilities at this intersection to conform to the project plans. The project includes relocating and/or replacing traffic signal poles and installing new traffic signal heads as required.

Peach Avenue and Hamilton Avenues: The project includes installing traffic signals at this intersection.

**Other Facilities and Improvements**

Water, sewer, storm water drainage, irrigation, electricity, gas, communications, and railroad facilities exist within the Peach Avenue right-of-way. In some cases, implementation of the project would require modifying, replacing, moving, or extending the existing facilities or constructing new facilities. For example, the project includes upgrading

[2] The primary source document for the project description is the *Peach Avenue Widening Between Jensen and Butler Avenues Schematic Design Report*, prepared for the City of Fresno Department of Public Works by Blair, Church & Flynn Consulting Engineers (April 2013). This document is available for public review at the City of Fresno Public Works Department, Capital Management Division, 2600 Fresno Street, Room 4016, Fresno, CA 93721-3615.

the existing railroad crossing at the California Avenue alignment, extending the Fresno Irrigation District's Central No. 23 Canal Box Culvert, and constructing a temporary storm drain basin. The reader is referred to the Peach Avenue Widening Between Jensen and Butler Avenues Schematic Design Report for a description of all proposed activities.

## 5. Actions Required to Implement Project

The City of Fresno must undertake the following actions in order to implement the project:

1) Complete the California Environmental Quality Act process for the project. This would involve either the adoption of a Mitigated Negative Declaration for the project or the preparation of an environmental impact report. Based on the results of this Initial Study, the City should consider the adoption of a Mitigated Negative Declaration for the project.
2) Approve the project.
3) Adopt and implement the Mitigation Monitoring and Reporting Program identified in Section F of this Initial Study.
4) Secure approvals, permits, and agreements, as necessary, from agencies and utilities that are responsible for facilities the project would construct, modify, or otherwise affect within or near the proposed Peach Avenue right-of-way (e.g. County of Fresno, Fresno Irrigation District, Fresno Metropolitan Flood Control District, California Public Utilities Commission).
5) Acquire or obtain by dedication additional land along sections of Peach Avenue where the existing public right-of-way is too narrow to accommodate the proposed arterial street.
6) Retain a contractor (or contractors) to construct the project.

## 6. Project Schedule

The project would be constructed in two phases. The Butler to Florence section of the project would be constructed from August 2020 to August 2021. The Florence to Jensen portion of the project would be constructed from December 2027 to April 2028.

## 7. Project Setting

**Existing Streets and Highways**

Peach Avenue is a north/south oriented road that extends north through unincorporated Fresno County to Jensen Avenue and then in discontinuous segments through the cities of Fresno and Clovis to Shepherd Avenue on the north edge of Clovis. In the City of Fresno, Peach Avenue extends north from Jensen Avenue four miles to McKinley Avenue and Fresno-Yosemite International Airport. The Peach Avenue interchange with State Route 180 is approximately 1.7 miles north of Butler Avenue and the project site.

The one-mile segment of Peach Avenue south from Jensen Avenue to North Avenue is within the City of Fresno's Sphere of Influence, and the Fresno General Plan designates this segment as an arterial street.

**Existing Land Use**

Existing land uses within the existing Peach Avenue right-of-way consist of road paving and associated public and private improvements within the improved segments of the right-of-way, and vacant and irrigated pastureland within the proposed additional right-of-way. All of the land the City proposes to acquire for the project is vacant land or pastureland.

The general area in which the project is located is in the process of transitioning from rural agricultural uses to mostly urban residential subdivisions. Existing land uses along Peach Avenue between Butler and Jensen Avenues include:

- Single-family residential subdivisions adjoin about one-half of the east and west frontages of Peach Avenue.
- Fresno Unified School District's Storey Elementary School occupies an approximately 18-acre site at the southeast corner of Peach and Church Avenues.

- The City of Fresno owns approximately 50 acres of land on the east side of Peach Avenue, generally south of Hamilton Avenue and north of Florence Avenue. This land is the site of a former United States Department of Agriculture Research Station. Several vacant administrative- and laboratory-type buildings are in the northwest corner of the site. The remainder of the site is vacant, except a small portion used for a neighborhood farm.
- Two former agricultural parcels of 40 acres or more are vacant.
- One parcel appears to be an irrigated pasture.

South of Jensen Avenue within the project area, residential and agricultural uses adjoin the west side of Peach Avenue, and industrial and agricultural uses adjoin the east side.

**General Plan, Community Plan, and Specific Plan Designations**

The City of Fresno has adopted three land use plans for the general area in which the proposed project is located. The Fresno General Plan designates most of the land along Peach Avenue between Butler and Jensen Avenues for residential development. Exceptions include the City-owned former USDA property and the Storey Elementary School site, both of which are designated for public uses, and a parcel along the east side of Peach Avenue, between Florence Avenue and the Central Canal, which is designated for neighborhood commercial uses. The General Plan designates Peach Avenue between Butler and Jensen Avenues as an arterial street with a scenic designation between Butler and California Avenues.

The City of Fresno adopted the Roosevelt Community Plan 1992. The land use and circulation planning in the community plan is similar to the planning in the Fresno General Plan. Both plans designate Peach Avenue as an arterial street and designate most of the land along Peach Avenue between Butler and Jensen Avenues for residential development. The Plan supported the improvement of Peach Avenue to an arterial status in a manner consistent with the area's scenic qualities and residential character. The Plan indicated that Peach Avenue was to be widened to four-lanes with the condition that impacts on existing trees, homes, and schools along its route be minimized. Policy 2-3.12 called for Peach Avenue between the California Avenue alignment and Belmont Avenue to be designated as scenic routes, and the preservation of existing trees along the right-of-way where possible.

The City of Fresno adopted the Butler-Willow Specific Plan in 1971. The area encompassed by the specific plan includes the segment of Peach Avenue between Butler Avenue and the California Avenue alignment. The specific plan designates this segment as an arterial street. As with the Fresno General Plan and the Roosevelt Community Plan, the specific plan designates most of the land along Peach Avenue between Butler Avenue and the California Avenue alignment for residential development.

**Zoning**

The City of Fresno has zoned the land along Peach Avenue between Butler and Jensen Avenues with the following zoning districts:

- Land developed with residential subdivisions: RS-4 - Residential Single-Family, Medium Low Density; or RS-5 - Residential Single-Family, Medium Density
- Undeveloped or vacant land planned for residential development: "RS-1" Residential Single-Family, Extremely Low Density; or RS-5 – Residential Single-Family, Medium Density
- Undeveloped or vacant land planned for commercial development: "CC" Community Commercial
- Storey Elementary School: PI – Public and Institutional
- City-owned former USDA property: PR – Parks and Recreation

The city describes the above zoning districts as follows:

- The RS-1 – Residential Single-Family, Extremely Low Density district provides for the development of one family residential home at urban standards on lots not less than 36,000 square feet in area, with not more than one dwelling unit permitted on any lot.
- The RS-4 – Residential Single-Family, Medium Low Density district provides for the development of one family residential home at urban standards on lots not less than 5,000 square feet in area, with not more than one dwelling unit permitted on any lot.

- The RS-5 – Residential Single-Family, Medium Density district provides for the development of one family residential home at urban standards on lots not less than 4,000 square feet in area, with not more than one dwelling unit permitted on any lot.
- The CC – Community Commercial district is intended for commercial development that primarily serves local needs such as convenience shopping and offices. Specific uses allowed include medium-scale retail, office, civic and entertainment uses, supermarkets, drug stores, and supporting uses.
- The PI – Public and Institutional district is for public or quasi-public facilities, including City facilities, utilities, schools, health services, corporation yards, utility stations, and similar uses. Accessory retail uses and services, including food facilities and childcare, are permitted.
- The PR – Parks and Recreation district is intended to maintain areas for active and passive public parks and multi-purpose trails, including outdoor and indoor recreation such as playing fields, trails, playgrounds, community centers, and other appropriate recreational uses. The PR district may include ponding basins or airport approach/clear zones if developed for, programmed, and actively used as recreation fields.

## 8. Other Public Agencies Whose Approval is Required

Implementation of the project would require approvals from the following public agencies in addition to the City of Fresno:

**Table A-2**
**Responsible Agencies**

| Public Agency | Approval(s) |
|---|---|
| California Public Utilities Commission | Approve railroad crossing design and construction |
| County of Fresno | Approve street design and construction for the segment of Peach Avenue south of Jensen Avenue |
| Fresno Irrigation District | Approve design and construction of Central No. 23 Canal Box Culvert Extension and Braly No. 14 Pipeline Crossing in accordance with the requirements noted in FID's letter dated February 21, 2019 (included as Appendix F to this Initial Study). |
| Fresno Metropolitan Flood Control District | Approve design and construction of flood control facilities in accordance with the provisions of FMFCD's letter dated August 26, 2013 (included as Appendix G to this Initial Study). |

## 9. Tribal Consultation

**Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

According to the Cultural Resources Survey prepared for the project (Initial Study Appendix C), a Sacred Lands File Search was made by the Native American Heritage Commission (NAHC), which did not reveal the presence of Native American traditional cultural places on or near the proposed project location. Letters describing the proposed road widening project and the findings of the Cultural Resources Survey were sent to each of the eleven Native American contacts identified by the NAHC. No responses to the letters were received.

Pursuant to Assembly Bill 52 (AB 52), the Table Mountain Rancheria and the Dunma Wo Wah Tribes were provided notification of the project and the opportunity to request consultation under AB 52. The City of Fresno mailed notices of the proposed project to each of these tribes on April 8, 2019 which included the required 30-day time period for tribes to request consultation. No response from either tribe was received.

## B. Environmental Factors Potentially Affected

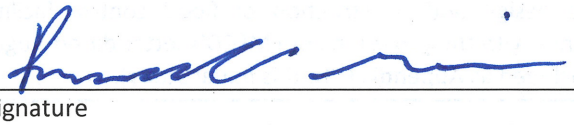
Based on the evaluations in Section E, the project would have a less than significant impact on the environmental factors listed in the following table. Those factors that require project specific mitigation to be incorporated into the project to be less than significant are noted with an "X".

**Table B-1**
**Environmental Factors Potentially Affected**

| | | | | | |
|---|---|---|---|---|---|
| X | Aesthetics | | Agricultural & Forestry Resources | | Air Quality |
| X | Biological Resources | | Cultural Resources | | Energy |
| | Geology & Soils | | Greenhouse Gas Emissions | | Hazards & Hazardous Materials |
| X | Hydrology & Water Quality | | Land Use & Planning | | Mineral Resources |
| X | Noise | | Population & Housing | | Public Services |
| | Recreation | | Transportation & Traffic | | Tribal Cultural Resources |
| | Utilities & Service Systems | | Wildfire | | Mandatory Findings of Significance |

## C. Determination

Based on this Initial Study, I find that the Peach Avenue Widening Between Jensen and Butler Avenues Project is a subsequent project identified in the MEIR but that it is not fully within the scope of the MEIR because the proposed project could have significant effects on the environment that were not examined in the MEIR. However, there will not be significant effects in this case because mitigation measures incorporated in the project by the City of Fresno will avoid or reduce the effects to less than significant. Project-specific mitigation measures and all applicable mitigation measures contained in the MEIR Mitigation Monitoring Checklist will be imposed on the project. Therefore, a Mitigated Negative Declaration will be prepared.



Signature

4/11/19

Date

Randall Morrison

Print Name

Assistant Director

Title

# D. Evaluation of Environmental Impacts

## 1. Tiering

The evaluation of environmental impacts in this Initial Study uses the tiering concept authorized under CEQA Guidelines sec. 15152:

> "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy document) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broad EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.

This Initial Study uses the tiering concept by concentrating the evaluation of environmental impacts on the design proposed for widening Peach Avenue, the improvements incorporated in the design, the equipment and activities involved in constructing the improvements, and the operational conditions that will result from widening the street.

This Initial Study incorporates by reference *Final Master Environmental Impact Report*, prepared by the City of Fresno for the Fresno General Plan (State Clearinghouse No. 2012111015).[3] The Master EIR provides a general evaluation of the impacts that would result from implementation of the general plan, including the proposed major street system, which designated Peach Avenue as an arterial street within and beyond the project area. The Master EIR should be consulted for information on impacts related to population and housing growth, increased transportation and circulation demands, degradation of air quality, loss of productive agricultural resources, and other impacts on environmental resources and conditions that would result from implementation of the general plan.

## 2. Evaluation

a. The answers in the environmental checklist in Section E consider the whole of the project, including off-site and on-site impacts, cumulative and project-level impacts, indirect and direct impacts, and construction and operational impacts.

b. The checklist answers indicate the potential impact the project would have on an environmental resource or condition, as follows:

   1) "Potentially Significant Impact" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.

   2) "Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures in the project has reduced an environmental effect from "Potentially Significant" to "Less than Significant."

   3) "Less Than Significant" means the project would affect an environmental resource or condition but not to a degree that would be considered significant or require mitigation.

   4) "No Impact" means the project would have no effects on an environmental resource or condition, or the question does not apply to the project.

c. Section G contains a list of the sources consulted for the Initial Study.

[3] Final Master Environmental Impact Report is available for public review at the City of Fresno Public Works Department, Capital Management Division, 2600 Fresno Street, Room 4016, Fresno, CA 93721-3615.

# E. Environmental Checklist

## 1. Aesthetics

| Except as provided in Public Resources Code Section 21099, would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect on a scenic vista? | | | ✓ | |
| b. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway? | | ✓ | | |
| c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | | | ✓ | |
| d. Create a new source of light and glare that would adversely affect day or nighttime views in the area? | | | ✓ | |

**Checklist Discussion**

**a. & c. Less Than Significant Impact:** Except as described in subsection b., the project would not have a substantial adverse effect on a scenic vista, substantially damage scenic resources within a state scenic highway, or substantially degrade the existing visual character or quality of the project area and its surroundings. As shown on Figures 8 and 9, the major visual elements in the area include the partially developed Peach Avenue, the trees and other landscaping along the street, residential subdivisions, an elementary school, and open fields. These visual elements are typical of areas undergoing urbanization in Fresno. Views of the foothills are frequently impeded due to poor air quality. The General Plan did not identify any scenic vistas within or near the proposed project.

Project construction activities would temporarily diminish the visual quality of the project area. For the following reasons, this impact would be less than significant.

1) The impact would be temporary.
2) Most of the existing residential lots along Peach Avenue have solid fences five- to six-feet in height along the lot lines that adjoin the street. The fences would preclude most views of the construction activity from the adjoining residences.
3) The project contractor must comply with the City's Standard Specifications, Section 7-8.1, Cleanup and Dust Control. Under this section, the contractor must "keep the site clean and free from rubbish and debris" and "abate dust nuisance by cleaning, sweeping, and sprinkling with water". In addition, the contractor must "operate a self-loading motor sweeper with spray nozzles at least once a day to keep paved areas acceptably clean" and "remove [materials and equipment] from the site as soon as they are no longer necessary". These provisions and others in Section 7-8.1 would reduce the potential for construction activity to result in unsightly conditions to a less than significant level.

**b. Less Than Significant Impact with Mitigation Incorporated:** Peach Avenue has not been designated as a state scenic highway. Therefore, no impact would occur to a scenic highway.

The Fresno General Plan designates Peach Avenue from the California Avenue alignment to Butler Avenue and beyond as a scenic arterial street. According to the general plan, this segment of Peach Avenue is a "gateway route", a "key access route" for travelers to enter the City's "Activity Centers". The project would preserve the existing scenic qualities along Peach Avenue between Butler and Hamilton Avenue. The only work that may occur within this segment of Peach Avenue would be to repair or resurface the existing pavement. No trees or other landscaping within the existing and proposed right-of-way or on residential properties would be disturbed.

Widening Peach Avenue between Hamilton Avenue and the California Avenue alignment would require the removal of approximately 20 trees and a row of large shrubs along the east side of the road. Approximately 12 of the trees adjoin a ponding basin on the east side of Peach Avenue, south of Hamilton Avenue. The shrubs and the remainder of the trees are south of the ponding basin, along a portion of Peach Avenue that adjoins the City-owned former USDA property. The City has incorporated in the project the following mitigation measure to reduce to an insignificant level the visual impact that would result from removing trees along a scenic arterial street:

**Mitigation Measure AES-1:**

> The City shall replace, on a 1:1 basis, trees removed to widen Peach Avenue between Hamilton Avenue and the California Avenue alignment. The City shall plant the replacement trees within or adjacent to the street right-of-way in the same general vicinity as the removed trees. An irrigation system shall be provided for trees.

**d. Less Than Significant Impact:** Existing sources of illumination in the project vicinity include City of Fresno street lights on the segments of Peach Avenue adjoining residential subdivisions and Storey Elementary School, residential exterior and interior lighting, and headlights from vehicles on Peach Avenue.

The primary effect of the project on lighting would result from the relocation of existing streetlights necessitated by street improvements and the potential addition of streetlights on the segments of Peach Avenue where they do not currently exist; thus, there is a potential for the lighting to adversely affect existing residences. A mitigation measure is built in to the General Plan MEIR (AES-1) that provides that lighting systems for streets and parking areas to include shields to direct light to the roadway surfaces and parking areas and away from adjacent light sensitive land uses such as residences. With the MEIR mitigation measure incorporated, the project will not result in any aesthetic lighting and glare impacts beyond those analyzed in MEIR SCH No. 2012111015. Therefore, the project will have a less-than-significant impact with respect to light and glare.

**General Plan MEIR Mitigation Measure**

> The proposed project shall implement and incorporate the aesthetics related mitigation measure (AES-1) as identified in the Master Environmental Impact Report SCH No. 111015 Fresno General Plan Mitigation Monitoring Checklist dated July 22, 2019 (Initial Study Attachment 1).

## 2. Agriculture and Forestry Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use? | | | ✓ | |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | ✓ |

| | | | | |
|---|---|---|---|---|
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | | | | ✓ |
| d. Result in the loss of forestland or conversion of forestland to non-forest use? | | | | ✓ |
| e. Involve other changes in the existing environment that could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use? | | | ✓ | |

**Checklist Discussion**

**a. Less than Significant Impact:** Based on the 2016 Important Farmland Map for Fresno County, the project would result in the conversion of small amounts of important farmland to non-agricultural uses. The map shows approximately 1/3 acre of Prime Farmland and approximately 2 acres of Farmland of Local Importance within the existing and proposed Peach Avenue right-of-way. This very small loss of farmland in a planned urban area is not considered significant and, due to its linear configuration, the loss of this land would not significantly impede the viability of any agricultural operation on adjacent land. Cumulative loss of farmland was addressed by the General Plan Master EIR, which concluded that the loss of farmland was significant and unavoidable, and for which a statement of overriding considerations was adopted.

**b., c., & d. No Impact:** The project would have no impact on agricultural zoning, Williamson Act Contracts or forestry resources. The reasons for these conclusions are as follows:

1) The land within the existing and proposed Peach Avenue right-of-way and the adjoining land are not under Williamson Act contracts.
2) No forest land or timberland exist in the project vicinity.
3) The City of Fresno does not apply zoning to public street right-of-way, including Peach Avenue.

**d. Less than Significant Impact:** Development of Peach Avenue as proposed by the City may facilitate urban development on the remaining undeveloped parcels along the road. However, most of this land is no longer used for agricultural purposes and all of the land is designated for urban development in the Fresno General Plan.

## 3. Air Quality

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | | | ✓ | |
| b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard? | | | ✓ | |

| | | | | |
|---|---|---|---|---|
| c. Expose sensitive receptors to substantial pollutant concentrations? | | | ✓ | |
| d. Result in other emissions, such as those leading to odors, adversely affecting a substantial number of people? | | | ✓ | |

**Checklist Discussion**

Ambient Air Quality & Noise Consulting prepared an Air Quality and Greenhouse Gas Impact Analysis for this Initial Study (January 2019a). The analysis is included in this Initial Study as Appendix A. The conclusions of air quality analysis as they relate to questions a. – d., above, are provided after the following background information:

Existing Setting

The project is located within the City of Fresno, within the San Joaquin Valley Air Basin (SJVAB). The SJVAB is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Air quality in the SJVAB is influenced by a variety of factors, including topography, local and regional meteorology.

The SJVAB has an inland Mediterranean climate that is strongly influenced by the presence of mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes producing a partial rain shadow over the valley. In addition, the mountain ranges block the free circulation of air to the east, trapping stable air in the valley for extended periods during the cooler half of the year. Winter in the SJVAB is characterized as mild and fairly humid, while the summer is typically hot, dry, and cloudless. The climate is semi-arid, with an annual normal precipitation of approximately 11 inches. Temperatures in the project area range from an average minimum of approximately 38°F, in January, to an average maximum of 98°F, in July (WRCC 2018).

Criteria Air Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

HUMAN HEALTH & WELFARE EFFECTS

Common air pollutants and associated adverse health and welfare effects are summarized in Table 3.1. Within the SJVAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM) and carbon monoxide (CO). As depicted in Table 3.1, exposure to increased pollutant concentrations of ozone, PM and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

**Table 3.1. Common Pollutants & Adverse Effects**

| Pollutant | Human Health & Welfare Effects |
|---|---|
| Particulate Matter ($PM_{10}$ & $PM_{2.5}$) | Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze). |

| Pollutant | Human Health & Welfare Effects |
|---|---|
| Ozone ($O_3$) | Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes. |
| Sulfur Dioxide ($SO_2$) | Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain. |
| Carbon Monoxide (CO) | Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death. |
| Nitrogen Dioxide ($NO_2$) | Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere. |
| Lead | Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems. |

*Source: CAPCOA 2010*

Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in Fresno County. The "Fresno-Drummond Street Monitoring Station" is the closest representative monitoring site to the proposed project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. This monitoring station monitors ambient concentrations of ozone, nitrogen dioxide, and carbon monoxide, nitrogen dioxide, and airborne particulates. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2015 through 2017) and are summarized in Table 3.2. As depicted, the state and federal ozone standards, and the state $PM_{10}$ standards were exceeded on numerous occasions during the past 3 years. The state standards for $PM_{10}$ have also been exceeded on various occasions during the past 3 years.

**Table 3.2. Summary of Ambient Air Quality Monitoring Data[1]**

| | 2015 | 2016 | 2017 |
|---|---|---|---|
| **Ozone** | | | |
| Maximum concentration (1-hour/8-hour average) | 0.135/0.110 | 0. 117/0.093 | 0. 125/0.103 |
| Number of days state/national 1-hour standard exceeded | 12/1 | 13/0 | 8/1 |
| Number of days state/national 8-hour standard exceeded | 41/39 | 60/57 | 31/29 |
| **Nitrogen Dioxide ($NO_2$)** | | | |
| Maximum concentration (1-hour average) | 56.0 | 58.6 | 64.7 |
| Annual average | 11 | NA | NA |
| Number of days state standard exceeded | 0 | 0 | 0 |
| **Suspended Particulate Matter ($PM_{10}$)** | | | |
| Maximum concentration (state/national) | 116.7/120.7 | 86.3/88.3 | 120.5/115.6 |
| Number of days state standard exceeded (measured/calculated[2]) | 13/80.3 | 17/98.9 | 17/111.6 |
| Number of days national standard exceeded (measured/calculated[2]) | 0/0 | 0/0 | 0/0 |

*ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available*

[1] *Based on ambient concentrations obtained from the Fresno-Drummond Street Monitoring Station.*

[2] *Measured days are those days that an actual measurement was greater than the standard. Calculated days are the estimated number of days that a measurement would have exceeded the standard had measurements been collected every day.*

*NA = Not Available*

*Source: ARB 2019a*

Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

Sensitive land uses located in the project area consist predominantly of residential land uses. In addition, Edith B. Storey Elementary School is located at the southeast corner of the Peach Avenue and E. Church Avenue intersection.

Regulatory Framework

Air quality within the SJVAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

Federal

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 3.3

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

State

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing the CAAQS, which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 3.3. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

**Table 3.3. Summary of Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | National Standards (Primary) |
|---|---|---|---|
| Ozone ($O_3$) | 1-hour | 0.09 ppm | – |
| | 8-hour | 0.070 ppm | 0.070 ppm |
| Particulate Matter ($PM_{10}$) | AAM | 20 µg/m$^3$ | – |
| | 24-hour | 50 µg/m$^3$ | 150 µg/m$^3$ |
| Fine Particulate Matter ($PM_{2.5}$) | AAM | 12 µg/m$^3$ | 12 µg/m$^3$ |
| | 24-hour | No Standard | 35 µg/m$^3$ |
| Carbon Monoxide (CO) | 1-hour | 20 ppm | 35 ppm |
| | 8-hour | 9 ppm | 9 ppm |
| | 8-hour (Lake Tahoe) | 6 ppm | – |
| Nitrogen Dioxide ($NO_2$) | AAM | 0.030 ppm | 53 ppb |
| | 1-hour | 0.18 ppm | 100 ppb |
| Sulfur Dioxide ($SO_2$) | AAM | – | 0.03 ppm |
| | 24-hour | 0.04 ppm | 0.14 ppm |
| | 3-hour | – | 0.5 ppm (1300 µg/m$^3$) |
| | 1-hour | 0.25 ppm | 75 ppb |
| Lead | 30-day Average | 1.5 µg/m$^3$ | – |
| | Calendar Quarter | – | 1.5 µg/m$^3$ |
| | Rolling 3-Month Average | – | 0.15 µg/m$^3$ |
| Sulfates | 24-hour | 25 µg/m$^3$ | No Federal Standards |
| Hydrogen Sulfide | 1-hour | 0.03 ppm (42 µg/m$^3$) | |
| Vinyl Chloride | 24-hour | 0.01 ppm (26 µg/m$^3$) | |
| Visibility-Reducing Particle Matter | 8-hour | Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%. | |

*For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*

*Source: ARB 2018*

### California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, $SO_2$, and $NO_2$ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

CALIFORNIA ASSEMBLY BILL 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

ASSEMBLY BILLS 1807 & 2588 - TOXIC AIR CONTAMINANTS

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The SJVAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- *Regulation VIII (Fugitive Dust Prohibitions). Regulation VIII (Rules 8011-8081).* This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. Regulation VIII requires the preparation of a Dust Control Plan (DCP) for residential projects that would result in the disturbance of 10 acres, or more, non-residential projects that would disturb 5 acres, or more, or for projects that would include the transport of 2,500 cubic yards of bulk materials on at least three days. Construction activities shall not commence until the air district has approved or conditionally approved the DCP.
- *Rule 4102 (Nuisance).* Applies to any source operation that emits or may emit air contaminants or other materials.
- *Rule 4103 (Open Burning).* This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.1 of this rule prohibits the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes.
- *Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).* This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- *Rule 9510 (Indirect Source Review - ISR).* Requires developers of larger residential, commercial, recreational, and industrial projects to reduce smog-forming and particulate emissions from their projects' baselines. This rule also applies to road improvement projects. If project emissions still exceed the minimum baseline reductions, a project's developer will be required to mitigate the difference by paying an off-site fee to the District, which would then be used to fund clean-air projects. For projects subject to this rule, the ISR rule requires emissions to be mitigated and/or offset sufficient to achieve: (1) 20-percent reduction of construction equipment exhaust NOx; (2) 45-percent reduction of construction equipment exhaust $PM_{10}$; (3) 33-percent reduction of operational NOx over 10 years; and (4) 50-percent reduction of operational $PM_{10}$ over 10 years. SJVAPCD ISR applications must be filed "no later than applying for a final discretionary approval with a public agency."

City of Fresno

FRESNO GENERAL PLAN

The Resource Conservation Element of the *Fresno General Plan* includes the objective to cooperate with other jurisdictions and agencies in the San Joaquin Valley Air Basin and to take necessary actions to achieve and maintain compliance with state and federal air quality standards for criteria air pollutants. The *Fresno General Plan* includes numerous policies related to air quality that are intended to reduce emissions of criteria air pollutants from area, stationary and mobile sources associated with City operations and future development within the City. These policies also address global climate change through the adoption of a *Greenhouse Gas Reduction Plan* (City of Fresno 2014).

Regulatory Attainment Designations

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and $NO_2$ as "does not meet the primary standards," "cannot be classified," or "better than national standards." For $SO_2$, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for $PM_{10}$ based on the likelihood that they would violate national $PM_{10}$ standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the SJVAB are summarized in Table3.4. The SJVAB is currently designated as a nonattainment area with respect to the state $PM_{10}$ standard, ozone, and $PM_{2.5}$ standards. The SJVAB is designated nonattainment for the national 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the U.S. EPA redesignated the San Joaquin Valley to attainment for the $PM_{10}$ NAAQS and approved the $PM_{10}$ Maintenance Plan (SJVAPCD 2018).

**Table 3.4. SJVAB Attainment Status Designations**

| Pollutant | National Designation | State Designation |
|---|---|---|
| Ozone, 1 hour | No Standard | Nonattainment/Severe |
| Ozone, 8 hour | Nonattainment/Extreme | Nonattainment |
| $PM_{10}$ | Attainment | Nonattainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Carbon Monoxide | Attainment | Unclassified/Attainment |
| Nitrogen dioxide | Unclassified/Attainment | Attainment |
| Sulfur dioxide | Unclassified/Attainment | Attainment |
| Lead (particulate) | No Designation/Classification | Attainment |
| Hydrogen sulfide | No Federal Standard | Unclassified |
| Sulfates | No Federal Standard | Attainment |
| Visibility-reducing particulates | No Federal Standard | Unclassified |

| | | |
|---|---|---|
| Vinyl Chloride | No Federal Standard | Attainment |

*Source: SJVAPCD 2018*

**a. Less Than Significant Impact:** Implementation of the proposed project would not result in long-term increases of mobile-source emissions, nor would short-term construction-generated emissions exceed applicable thresholds of significance. Furthermore, it is important to note that the proposed project is identified as Project ID #FRE111316 and was included in the regional emissions analysis conducted by the Fresno Council of Governments (FCOG) for the conforming *2018 Regional Transportation Plan (RTP)* and the *2019 Federal Transportation Improvement Program (FTIP)* (refer to Ambient 2019a, Appendix A). The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP/FTIP. The conformity determination found that the RTP/FTIP and, therefore, the individual projects contained therein, are conforming projects, and would not interfere with air quality planning efforts, including implementation of the State Implementation Plan (SIP). For these reasons, implementation of the proposed project would not conflict with nor obstruct implementation of applicable air quality plans.

**b. Less Than Significant Impact:**

Construction Emissions

Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with site grading, excavation, paving, motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment on unpaved surfaces.

Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and $NO_X$) and emissions of PM. Emissions of ozone-precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne PM are largely dependent on the amount of ground disturbance associated with site preparation activities and can result in increased concentrations of PM that can adversely affect nearby sensitive land uses. Construction-generated emissions are discussed in more detail, as follows:

As noted in Table 3.5, the proposed project would generate maximum annual emissions of approximately 0.34 tons/year of ROG, 3.74 tons/year of $NO_x$, 2.40 tons/year of CO, 0.20 tons/year of $PM_{10}$, and 0.16 tons/year of $PM_{2.5}$. Emissions of $SO_2$ would be negligible. Estimated construction-generated emissions would not exceed the SJVAPCD's significance thresholds. It is also important to note that the proposed project would be required to comply with SJVAPCD rules and regulations, including Regulation VIII and Rule 9510. Furthermore, because the proposed project would result in the potential disturbance of more than 5 acres and given the amount of material to be transported, the proposed project would be required to prepare a dust control plan, per Regulation VIII, Rule 8021. Compliance with applicable rules and regulations would result in additional reductions in emissions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. As a result, regional air quality impacts would be considered less than significant.

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**Table 3.5 Annual Construction-Generated Emissions**

| Construction Activity | Emissions (Tons/Year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Grubbing/Land Clearing | 0.01 | 0.17 | 0.08 | 0.01 | 0.01 |
| Grading/Excavation | 0.20 | 2.40 | 1.48 | 0.13 | 0.10 |
| Drainage/Utilities/Sub-Grade | 0.10 | 1.00 | 0.66 | 0.06 | 0.05 |
| Paving | 0.03 | 0.18 | 0.18 | 0.01 | 0.01 |
| *Total:* | *0.34* | *3.74* | *2.40* | *0.20* | *0.16* |
| *SJVAPCD Significance Thresholds:* | *10* | *10* | *100* | *15* | *15* |
| *Annual Emissions Exceed SJVAPCD Thresholds/Significant Impact?:* | *No* | *No* | *No* | *No* | *No* |

*Emissions were quantified using the CalEEMod, version 2016.3.2. Represents uncontrolled emissions. Compliance with SJVAPCD Regulation VIII and Rule 9510 would result in additional reductions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. Refer to Appendix B for modeling results and assumptions.*

Daily on-site construction emissions are summarized in Table 3.6. As indicated, the widening of S. Peach Avenue would generate average-daily emissions of up to approximately 7.05 lbs/day of ROG, 81.69 lbs/day of $NO_x$, 52.2 lbs/day of CO, 3.80 lbs/day of $PM_{10}$, and 3.30 lbs/day of $PM_{2.5}$. Emissions of $SO_2$ would be negligible (i.e., less than 0.1 lbs/day). Construction-generated emissions would not exceed the SJVAPCD's significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated. As noted above, the proposed project would be required to comply with SJVAPCD rules and regulations, including Rule 9510 and Regulation VIII. Compliance with applicable rules and regulations would result in additional reductions in estimated daily on-site emissions. For these reasons, localized air quality impacts associated with project construction would be considered less than significant.

**Table 3.6 Daily On-Site Construction-Generated Emissions**

| Construction Activity | Number of Days | Average-Daily Emissions (lbs/day)[1] | | | | |
|---|---|---|---|---|---|---|
| | | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Grubbing/Land Clearing | 13 | 1.41 | 15.63 | 10.85 | 0.75 | 0.62 |
| Grading/Excavation | 59 | 7.05 | 81.69 | 52.20 | 3.80 | 3.30 |
| Drainage/Utilities/Sub-Grade | 40 | 5.00 | 49.43 | 34.66 | 2.64 | 2.49 |
| Paving | 20 | 2.80 | 19.94 | 18.94 | 1.19 | 1.10 |
| Highest Average-Daily Emissions: | | 7.05 | 81.69 | 52.20 | 3.80 | 3.30 |
| *SJVAPCD Significance Thresholds:* | | *100* | *100* | *100* | *100* | *100* |
| *Daily Emissions Exceed SJVAPCD Thresholds/Significant Impact?:* | | *No* | *No* | *No* | *No* | *No* |

*Emissions were quantified using the CalEEMod, version 2016.3.2. Represents uncontrolled emissions. Compliance with SJVAPCD Regulation VIII and Rule 9510 would result in additional reductions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. Refer to Appendix B for modeling results and assumptions.*
*1. Average daily onsite emissions are based on total onsite emissions divided by the total number of construction days.*

Long-term Increases of Operational Emissions

The purpose of the proposed widening project is to provide improved traffic capacity and increased safety for

motorists and pedestrians along the S. Peach Avenue corridor. Based on the traffic analysis prepared for the proposed project, implementation of the proposed project would not result in an increase in vehicle traffic volumes along Peach Avenue, nor would the project result in changes in vehicle traffic speeds along Peach Avenue (VRPA 2018). As a result, implementation of the proposed project would not be anticipated to result in long-term increases of mobile-source emissions.

In addition, it is important to note that the proposed project was included in the regional emissions analysis conducted by FCOG for the conforming *2018 RTP* and the *2019 FTIP* (refer to Appendix A). The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP and FTIP. The conformity determination found that the RTP/FTIP and, therefore, the individual projects contained in the RTP/FTIP, are conforming projects, and would not interfere with air quality planning efforts, including implementation of the State Implementation Plan. For these reasons, implementation of the proposed project would not be projected to result in or contribute substantially to an existing or projected air quality violation for which the project area or the SJVAB is designated non-attainment. This impact would be considered less than significant.

**c. Less Than Significant Impact:** The project would not expose sensitive receptors to substantial pollutant concentrations. Potential increases in localized pollutant concentrations attributable to the proposed project would be primarily associated with emissions of TACs and PM during construction. Potential long-term localized impacts would be primarily associated with potential increases in localized mobile-source CO concentrations. Long- and short-term air quality impacts were determined in E, 3, b to be less than significant.

**d. Less Than Significant Impact:** Implementation of the proposed project would not result in long-term emissions of odors. However, construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition, pavement coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. For these reasons, potential short-term exposure of sensitive receptors to odorous emissions would be considered less than significant.

## 4. Biological Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service? | | ✓ | | |
| b. Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U. S. Wildlife Service? | | | | ✓ |
| c. Have a substantial adverse effect on state or federally protected (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | | | ✓ |

| | | | | |
|---|---|---|---|---|
| d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites? | | | ✓ | |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | | ✓ |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan? | | | | ✓ |

**Checklist Discussion**

Live Oak Associates, Inc. prepared a biotic evaluation for this Initial Study (May 14, 2014). The document is included in this Initial Study as Appendix B. The biotic evaluation provides the basis for addressing the Biological Resources checklist items.

**a. Less Than Significant Impact with Mitigation Incorporated:** The project has the potential to have a substantial adverse effect on raptors, loggerhead shrikes, and various migratory bird species that may use existing native and ornamental trees for nesting from approximately February 1st to August 31st. Construction activities during the nesting period may destroy active nests or result in nest abandonment by adult birds, thus resulting in mortality of nestlings. Disturbances that cause nest abandonment and/or loss of reproductive effort are a violation of the federal Migratory Bird Treaty Act and would constitute a potentially significant adverse environmental effect of the project. To reduce this potentially significant impact to a less than significant level, the City of Fresno has incorporated into the project the following mitigation measure:

**Mitigation Measure BIO-1:**

a. The project shall initiate construction outside of the nesting season. This work shall include the removal of all potential nest trees that must be removed for project construction between September 1st and January 31st (outside of the nesting season), or
b. If tree removal, brushing, grading, or construction must occur between the months of February and August, a qualified biologist will conduct pre-construction surveys for active nests within 30 days of the onset of these activities or after a break of more than 30 days. Surveys for burrowing owls will be in conformance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).
c. Should active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged.

Eleven special status vascular plant species are known to occur in the general project vicinity. The project area provides no habitat for any of these species. Therefore, the project would have no effect on regional populations of these eleven species.

**b. & c. No Impact:** No wetlands or riparian habitats exist within or near the project area.

**d. Less Than Significant Impact:** Developed or highly disturbed lands surrounded the project area and, therefore, the project area would not constitute a "movement corridor" for native wildlife, although some species move within it and through it.

The project would have an adverse effect on home range and dispersal movements of terrestrial vertebrate species currently using the project area. Many migratory species that pass through the project area are neo-tropical migrant birds that are likely to pass through and over the site even when it is eventually developed. Therefore, the project would result in a less than significant effect on regional wildlife movements.

**e. No Impact:** The project would not conflict with any local policies or ordinances protecting biological resources. The Fresno General Plan: Parks, Open Space, and Schools Element, addresses the conservation of native plant and animal resources. With the possible exception of nesting birds, the project would have no impacts on natural habitats occupied by native plant or significant populations of terrestrial vertebrates once native to the Fresno area. Due to the general absence of the natural resources addressed by the Parks, Open Space, and Schools Element of the Fresno General Plan, the project will have no impact on such resources, and will therefore be consistent with its provisions.

**f. No Impact:** No adopted Habitat Conservation Plans, Natural Conservation Community Plans, or other approved local, regional, or state habitat conservation plans apply to the project area.

## 5. Cultural Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5? | | | ✓ | |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5? | | | ✓ | |
| c. Disturb any human remains, including those interred outside of formal cemeteries? | | | ✓ | |

Sierra Valley Cultural Planning (SVCP) prepared a cultural resources assessment for this Initial Study (November 21, 2013). The document is included in this Initial Study as Appendix C. On July 18, 2019, SVCP conducted a survey of the project area and confirmed that there have been no changes in the area or project circumstances that would affect the conclusions of the original 2013 assessment (see SVCP letter dated July 20, 2019 in Appendix C). The cultural resources assessment provides the basis for addressing the Cultural Resources checklist items.

**Checklist Discussion**

**a., b., and c. Less Than Significant:** On 9 September 2013, Sierra Valley Cultural Planning conducted a cultural resource survey of the project area. No cultural resources were identified as a result of a records search with the Southern San Joaquin Valley Information Center and the surface inspection of the project area. Much of the project area was paved, thus obstructing inspection of surface soils within the roadway itself and adjacent sidewalks. Exposed soils were visible adjacent the roadway in open fields and where sidewalks were absent. The project area is located in a highly disturbed area and consists of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut. Analysis of subsurface soil structure within the project area suggests that buried cultural deposits are unlikely due to strongly developed soil horizons. For these reasons it is unlikely that completion of the proposed street widening and associated enhancement project will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended.

Although no resources or human remains were identified, the possibility exist that such resources or remains may be discovered during project excavation and grading activities. The City's General Plan Master EIR includes mitigation measures that address and mitigate the potential discovery of subsurface resources. With MEIR mitigation measures incorporated, the project will not result in any cultural resource impacts beyond those analyzed in MEIR SCH No. 2012111015. Therefore, the project will have a less-than-significant impact on cultural resources.

**General Plan MEIR Mitigation Measures**

The proposed project shall implement and incorporate, as applicable, the cultural resources related mitigation measures as identified in the Master Environmental Impact Report SCH No. 111015 Fresno General Plan Mitigation Monitoring Checklist dated July 22, 2019 (Initial Study Attachment 1).

## 6. Energy Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in potentially significant environmental impact due to wasteful, inefficient, and unnecessary consumption of energy during project construction or operation? | | | ✓ | |
| b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | | | | ✓ |

**Checklist Discussion**

**a. Less Than Significant Impact:** The project would consume energy to construct and maintain the proposed improvements to Peach Avenue. The consumption of energy for this purpose would not be wasteful, inefficient, or unnecessary. As discussed below, the resulting 4-lane divided arterial street would allow more fuel-efficient vehicular circulation in southeast Fresno.

Construction of the project would involve energy-consuming activities including the use of petroleum-based products to extract, produce, and refine materials such as asphalt and concrete, transportation of materials to the job site, and laying of the asphalt. One estimate indicates that the production of materials for road projects typically accounts for approximately 75 percent of the total energy used to build a road, transporting the materials accounts for 25 percent, and actual construction at the job site accounts for 5 percent. (Pavement Interactive 2/21/12)

Beyond the energy consumed to construct the project, widening Peach Avenue to a four-lane divided arterial street would reduce the amount of energy consumed by vehicles traveling the road. This would occur because of a reduction in traffic congestion on the road. The start-and-stop driving that occurs when a road is congested requires more fuel than when traffic can flow smoothly, at a relatively constant speed.

The Traffic Technical Report prepared for the project by VRPA Technologies, Inc. calculated the congestion reductions that would result from the project. According to the report, existing Peach Avenue within the project area operates at Levels of Service C and D. Level of Service C "is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream." Level of Service D refers to "a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow." With completion of the project, Peach Avenue within the project area would operate at Level of Service C, or in the range of stable flow.

The Traffic Technical Report projects that by the year 2035, if the City did not widen Peach Avenue within the project area, the street would operate mostly at Level of Service F, meaning motorist would experience stop-and-go gridlock, which is the worst-case scenario for fuel consumption. With implementation of the project, Peach Avenue would operate at Level of Service C, a considerably improved scenario for fuel consumption. For these reasons, the project would have a less than significant effect on fuel consumption.

**b. No Impact:** The project is not in conflict with any energy-related plans. Fresno General Plan's Energy Resources section contains no policies applicable to roads. Lighting for public streets and roadways is excluded from the California Energy Code.

## 7. Geology and Soils

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: | | | | |
| (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist- Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | | | ✓ | |
| (ii) Strong seismic ground shaking? | | | ✓ | |
| (iii) Seismic-related ground failure, including liquefaction? | | | ✓ | |
| (iv) Landslides? | | | ✓ | |
| b. Result in substantial soil erosion or the loss of topsoil? | | | ✓ | |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | | | ✓ | |
| d. Be located on expansive soil, as defined in Table 18-a-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | | | ✓ | |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | | | | ✓ |
| f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | | ✓ | |

**Checklist Discussion**

**a., c., & d. Less Than Significant Impact:** Salem Engineering Group, Inc. prepared a geotechnical engineering investigation for the project. The report is an appendix in the project *Schematic Design Report.* The information in the report indicates that the project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving an earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction. Moreover, the project area is not on a geologic unit or soil that is unstable, or that would become unstable because of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.

The City is designing the project following the recommendations, design criteria, and construction procedures recommended in the geotechnical report prepared by Salem Engineering. This fact, together with the relatively benign geologic and seismic conditions found in the project area, demonstrate that any project impacts related to geology and soils would be less than significant.

**b. Less Than Significant Impact:** The project would not result in substantial soil erosion or the loss of topsoil. The potential for wind- or water-related soil erosion to occur within the project area would be limited to the construction phase of the project, especially during project clearing, grubbing, and grading activities. The potential for these activities to result in erosion would be less than significant because the project must comply with San Joaquin Valley Air Pollution Control District Regulation VIII, which addresses dust control, and National Pollutant Discharge Elimination System (NPDES) permit requirements, which require the preparation and implementation of a Storm Water Pollution Prevention Plan.

After the project is constructed, concrete, paving, and landscaping would cover areas disturbed by construction activities. These materials would preclude erosion or loss of topsoil.

**e. No Impact:** The project does not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

**f. Less Than Significant:** Based on field surveys by Sierra Valley Cultural planning and Odell Planning & Research, the project area contains no surface paleontological resources or unique geological features. Although no resources were identified, the possibility exist that such resources may be discovered during project excavation and grading activities. The City's General Plan Master EIR includes a mitigation measure that address and mitigate the potential discovery of subsurface paleontological/geological resources (CUL-3). With the MEIR mitigation measure incorporated, the project will not result in any paleontological/geological resources impacts beyond those analyzed in MEIR SCH No. 2012111015. Therefore, the project will have a less-than-significant impact on paleontological/geological resources.

**General Plan MEIR Mitigation Measure**

The proposed project shall implement and incorporate the paleontological/geological resource related mitigation measure (CUL-3) as identified in the Master Environmental Impact Report SCH No. 111015 Fresno General Plan Mitigation Monitoring Checklist dated July 22, 2019 (Initial Study Attachment 1).

## 8. Greenhouse Gas Emissions

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | | | ✓ | |

| | | | | |
|---|---|---|---|---|
| b. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | | | ✓ | |

**Checklist Discussion**

Ambient Air Quality & Noise Consulting evaluated the potential greenhouse gas-related impacts of the project for this Initial Study. The *Air Quality and Greenhouse Gas Impact Analysis* (January 2019a) prepared by Ambient is included in Appendix A. The air quality/GHG analysis provides the basis for addressing the greenhouse gas emissions checklist items.

**a. & b. Less Than Significant Impact:** Based on the modeling conducted, annual emissions of greenhouse gases associated with construction of the proposed project would total approximately 482.8 $MTCO_2e$. When amortized over an assumed 30-year project life, annual emissions would total approximately 16.1 $MTCO_2e$/year. Construction-generated GHG emissions would not exceed commonly applied significance thresholds, which generally range from 1,100 to 3,000 $MTCO_2e$/year for non-industrial uses. A majority of the emission generated during the construction process would be associated primarily with the use of off-road equipment. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Actual emissions will likely vary, depending on the final construction schedules, equipment required, and activities conducted.

Implementation of the proposed project is not projected to result in a change in average-daily traffic volumes or average vehicle travel speeds within the project area. As a result, the proposed project would not result in long-term increases of GHG emissions. Construction of the proposed project would, however, result in short-term increases of GHG emissions. Given that emissions would be short-term, occurring over an approximate six-month construction period, increases in GHG emissions attributable to the proposed project would not result in a significant impact on the environment. Furthermore, it is important to note that the proposed project is consistent with regional transportation plans and, as such, would not conflict with planning efforts for the reduction of mobile-source GHG emissions.

## 9. Hazards and Hazardous Materials

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | ✓ | |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment? | | | ✓ | |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | ✓ | |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | | ✓ |

| | | | | |
|---|---|---|---|---|
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | | | | ✓ |
| f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? | | | | ✓ |
| g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? | | | | ✓ |

**Checklist Discussion:**

**a., b., & c. Less Than Significant Impact:** California Health and Safety Code section 25501(o) defines hazardous material as:

> …any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Project construction activities would involve the transport, use, and disposal of hazardous materials. Examples of these materials include asphalt (petroleum hydrocarbons), gasoline (petroleum hydrocarbons), and portland cement (calcium and aluminum silicates). For the following reasons, the use of hazardous materials during construction would not create a significant hazard to the public or the environment:

1) As a matter of standard practice, the City requires contractors to transport, use, and dispose of hazardous materials following labeled directions and applicable government local, regional, state, and federal regulations.

2) The following sections in the City's Standard Specifications provide for the safe use of hazardous materials:
   a) *Section 7-10.6.3 Special Hazardous Substances and Products:* Materials that contain hazardous substances or mixtures may be required on the Work. A Material Safety Data Sheet as described in Section 5194 of Title 8 of the California Code of Regulations shall be requested by the Contractor from the manufacturer of any hazardous products used. Material usage shall be accomplished with strict adherence to the State Division of Industrial Safety requirements and all manufacturer warnings and application instructions listed on the Material Safety Data Sheet and on the product container label. The Contractor shall notify the Engineer if a specified product cannot be used under safe conditions.
   b) *Section 7-11 Hazardous Conditions: Contractor's Responsibility for Precautions:* Contractor agrees that if, during the progress of the Work there is created, by reason of the use of specified materials or equipment, the location of the Work or the condition of the Site, the kind or method of the construction specified, or the manner in which any of the Work is required to be done, or for any other reason, any condition which involves a peculiar risk of bodily harm to any Person(s), or of damage to property of City or others, Contractor will take such special precautions as shall be necessary to make the progress of the Work safe under such condition. Contractor further agrees to assume the sole responsibility for determining whether any such hazardous condition exists or will be created during the course of the Work.

3) The Standard Specifications also include the following sections, the provisions of which may result directly or indirectly in the avoidance or reduction of risks involving hazardous materials: Section 7-8.1 Cleanup and

Dust Control; Section 7-8.2 Air Pollution Control; Section 7-8.3 Vermin Control; Section 7.8.4 Sanitation; Section 7-8.6 Water Pollution Control; and 7-8.7 Drainage Control.

Automobiles and trucks currently transport hazardous materials on Peach Avenue through the project area. The proposed project would not alter this existing condition, but would make the road safer and more efficient for existing and future traffic carrying the materials.

**d. No Impact:** Based on a review of the California Department of Toxic Substance Control's website "Envirostor", the project area is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, no impact would occur.

**e. No Impact:** Based on a review of recent Google Earth aerial photography, the Federal Aviation Administration San Francisco Sectional Aeronautical Chart, and the Fresno General Plan, the project area is not within an airport land use plan or within two nautical miles of a public airport or public use airport. Therefore, no impact would occur.

**f. No Impact:** Research conducted for this Initial Study did not identify any emergency response plans or emergency evacuation plans with which the project could impair or interfere. Therefore, no impact would occur.

**g. No Impact:** The *Glossary of Wildland Fire Terminology* defines wildland fires as "non-structure fires that occur in areas in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities. Structures, if any, are widely scattered." Based on this definition and the extent of existing urban development, the project area is not a wildland area. Therefore, no impact would occur.

## 10. Hydrology and Water Quality

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | | | ✓ | |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | | | ✓ | |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | | | | |
| (i) result in substantial erosion or siltation on-or off-site; | | | ✓ | |
| (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site; | | ✓ | | |
| (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | | ✓ | | |

| | | | | |
|---|---|---|---|---|
| (iv) impede or redirect flood flows? | | ✓ | | |
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | | | | ✓ |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | | | ✓ | |

**Checklist Discussion:**

**a. Less Than Significant Impact:** The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality due to the existing NPDES regulations and City of Fresno Department of Public Work's *Standard Specifications* noted under section c, below.

**b. Less Than Significant Impact:** The project would use water during the construction phases for making concrete, dust suppression, and other purposes, but this water use would be temporary and typical for construction projects. On an ongoing basis, the project would result in the use of water to irrigate the landscaping the City would plant in median islands as part of the project. Such landscaping would be low water use/drought resistant and thus would have a minimal impact on water supplies. The use of groundwater was addressed on a cumulative basis in the General Plan MEIR, which found the impact less than significant with the implementation of the mitigation measures included in the EIR, such as a reduction of per capacity water use through water conservation and education, use of recycled water, increased groundwater recharge and storage, and additional surface water treatment capacity.

**c. Less Than Significant Impact With Mitigation Incorporated:** For the following reasons, the project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation within or outside the project area or would substantially increase the rate of surface runoff in a manner that would result in flooding within or outside the project area.

1) Construction activity, including grading, clearing, grubbing, filling, excavation, development or redevelopment of land that results in a disturbance of one acre or more of the total land area, or less if part of a larger plan of development or sale, must secure a storm water discharge permit in compliance with the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System regulations (CFR Parts 122-124, Nov. 1990). The permit must be secured by filing a Notice of Intent for the State General Permit for Construction Activity with the State Water Resources Control Board. The notice must be filed prior to the start of construction. Copies of the State General Permit and Notice of Intent are available at FMFCD.

2) The City of Fresno Department of Public Work's *Standard Specifications*, in Sections 7-8.6 and 7-8.7, specify water pollution control and drainage control measures that would apply to the project. In general, these measures require contractors to "exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution" and to "maintain drainage within and through work areas."

3) The City has incorporated into the project as Mitigation Measure HYD-1, the following recommendations from the Fresno Metropolitan Flood Control District (FMFCD). FMFCD is responsible for storm water management within the Fresno-Clovis metropolitan area, including the project area. Within the metropolitan area, FMFCD controls storm runoff produced by land development through a system of pipelines and storm retention basins. The project lies within FMFCD's Drainage Areas "BE"," BD", "BF", and "PP".

**Mitigation Measure HYD-1:**

a. The City shall construct the Storm Drainage and Flood Control Master Plan facilities shown on Exhibit Nos. 1, 2, and 3 in a letter regarding the project from Gary Chapman, Engineering Technician III, FMFCD, to Michael W. Holly, City of Fresno, Capital Management Division (August 26, 2013). The City shall execute a Development Agreement with the FMFCD for any construction reimbursement costs.

b. Construction of the Master Plan facilities identified on Exhibit Nos. 1 and 2 as "Master Plan Facilities to be Constructed by Developer", will provide permanent drainage service to the portion of the project located in

Drainage Area "BE". The portion of the project located in Drainage Area "BD" will not have permanent service. FMFCD recommends temporary facilities until permanent service is available in Drainage Area "BD". Drainage Areas "BF" and "PP" should not be affected provided the project maintains the conformity to the Master Plan.

c. The City of Fresno and the FMFCD's Operations Department shall coordinate the project and identify the FMFCD manhole locations for protection and adjustment to the new surface elevations.

d. Should the City desire the FMFCD to fund the Master Plan facilities, the City shall give a minimum of twelve (12) months prior notice of construction of the project. If funding is unavailable, the City shall construct the Master Plan facilities and FMFCD will provide reimbursement from future drainage fees paid within the corresponding drainage area.

e. FMFCD shall review and approve the project's final improvement plans for all proposed development (i.e. grading, street improvement, and storm drain) for conformance to the Master Plan prior to project implementation.

f. The project area contains a portion of a canal or pipeline used to manage recharge, storm water, and/or flood flows. The City shall preserve the existing capacity as part of project development. Additionally, project development shall not interfere with the ability to operate and maintain the canal or pipeline.

**d. No Impact:** The project area is not within a FEMA-designated 100-year floodplain or within an area subject to inundation should Friant Dam, Little Dry Creek Dam, or Pine Flat Dam fail. The project area is not near any water bodies, slopes, or soils that could result in inundation of the site by a seiche, tsunami, or mudflow. (USGS) Therefore, no impact would occur.

**e. Less Than Significant Impact:** The project site is subject to the Water Quality Control Plan for the San Joaquin River Basins. As such, this project will comply with applicable policies and standards.

The Sustainable Groundwater Management Act of 2014 (SGMA) requires the formation of local Groundwater Sustainability Agencies (GSAs) that are responsible for developing Groundwater Sustainability Plans (GSPs). The project site is located within jurisdiction of the North Kings Groundwater Sustainability Agency. This agency has not yet developed a GSP.

## 11. Land Use and Planning

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Physically divide an established community? | | | | ✓ |
| b. Cause a significant environmental impact due to a conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | | | | ✓ |

**Checklist Discussion**

**a. No Impact:** The project has no design, construction, or operational characteristics that would physically divide Fresno. Instead, widening Peach Avenue would improve the physical cohesiveness of the community by providing safer, more efficient vehicular access within the community. Therefore, no impact would occur.

**b. No Impact:** The project would not conflict with any adopted land use plan, policy, or regulation adopted by the City of Fresno. The project is consistent with the following applicable plan goals and policies:

**Fresno General Plan**

The Fresno General Plan's Major Street Circulation Diagram designates Peach Avenue as an arterial street within the project area. The project would implement the general plan designation by widening the street to conform to the City's arterial street standards.

The General Plan's Mobility and Transportation Element outlines objectives and policies related to street projects. Conformance with these objectives is discussed in this Initial Study's Transportation section.

**Roosevelt Community Plan**

The Roosevelt Community Plan notes that "Some arterials, such as Peach and Fowler, continue to exist along major portions of their alignments as rural thoroughfares providing inadequate service to through traffic." The Plan indicates that "Peach Avenue will be widened to four-lanes with the condition that impacts on existing trees, homes, and schools along its route will be minimized."

Plan Concept 4: Enhanced Circulation Planning – "…The Plan also supports the improvement of Peach Avenue to an arterial status in a manner consistent with the area's scenic qualities and residential character."

Goal 2-3: Establish and maintain a street system that is compatible with planned uses, creates a positive community image, and contributes to the Community's enhanced quality of life.

Policy 2-3.12: Designate … Peach Avenue (between the California Avenue Alignment and Belmont Avenue)… as scenic routes, and preserve existing trees along these rights-of-way where possible.

## 12. Mineral Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | | | | ✓ |
| b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | | | | ✓ |

**Checklist Discussion**

**a. & b. No Impact:** The USGS Mineral Resource Online Spatial Data interactive map indicates that no known mineral resources exist within the project area. Therefore, no impact would occur.

## 13. Noise

| Would the project result in: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local | | ✓ | | |

| | | | | |
|---|---|---|---|---|
| general plan or noise ordinance, or applicable standards of other agencies? | | | | |
| b. Generation of excessive groundborne vibration or groundborne noise levels? | | | ✓ | |
| c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | ✓ |

**Checklist Discussion**

Ambient Air Quality & Noise Consulting evaluated the potential noise- and vibration-related impacts of the project for this Initial Study. The *Noise & Groundborne Vibration Impact Analysis* (January 2019b) prepared by Ambient is presented in Appendix D. The noise analysis provides the basis for addressing the noise checklist items. (Abbreviations used in the summaries include: dB - decibels, dBA - A-weighted decibels, CNEL – community noise equivalent level, and Leq – energy equivalent sound level.)

**a. Less Than Significant Impact with Mitigation:** Implementation of the proposed project would not result in a significant long-term increase in traffic noise levels at nearby noise-sensitive land uses. However, predicted traffic noise levels at some nearby residential land uses would be projected to exceed the City's noise standards for land use compatibility. In addition, short-term construction related noise levels could potentially adversely affect nearby noise-sensitive land uses. For residential land uses, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of sleep disruption to occupants of nearby residential dwellings. Typically, construction-related activities occurring during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) would not be exempt from noise ordinance requirements. Construction activities occurring during the nighttime hours could potentially exceed City of Fresno noise ordinance requirements. For these reasons, this impact is considered potentially significant.

*Permanent Traffic Noise*

Traffic noise levels were calculated using the FHWA Traffic Noise Model, version 2.5, based on data obtained from the traffic analysis prepared for this project. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. The TNM model was calibrated using existing noise measurement data. Increases in traffic noise levels attributable to the proposed project were calculated by comparing the predicted noise levels at nearby noise-sensitive land uses with and without project implementation. Modeled receiver locations are depicted in Ambient 2019b, Figures 4a-4d. Predicted existing and future cumulative traffic noise levels, with and without project implementation, are summarized in Ambient 2019b, Table 8 and Table 9, respectively.

With project implementation, some vehicle traffic along Peach Avenue may be located either closer to or further from nearby existing receivers. As a result, traffic noise levels are projected to increase slightly at some receiver locations and decrease slightly at other locations. As depicted in Ambient 2019b, Table 8 and Table 9, predicted existing exterior noise levels at the nearest primarily affected residential dwellings would increase by approximately 1.3 dB, or less. Predicted traffic noise levels at Edith B. Storey Elementary School, with project implementation, would increase by approximately 0.1 dB. Implementation of the proposed project would not result in a significant increase in traffic noise levels (i.e., 3 dB, or greater) at the nearest noise-sensitive land uses.

*Temporary Construction Noise*

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., land clearing, grading, excavation, and paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Although noise ranges are generally

similar for all construction phases, the initial site preparation phase tends to involve the most heavy-duty equipment having a higher noise-generation potential. Noise levels associated with individual construction equipment is summarized in Ambient 2019b, Table 7.

As depicted in Ambient 2019b, Table 7, noise levels generated by individual pieces of construction equipment typically associated with road-widening projects range from approximately 77 dBA to 89 dBA at 50 feet (FTA 2006). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average-hourly noise levels associated with road improvement projects can vary, reaching levels of up to approximately 83 dBA $L_{eq}$ at 50 feet, depending on the activities performed and equipment being used. Short-term increases in vehicle traffic, including worker commute trips and haul truck trips may also result in temporary increases in ambient noise levels at nearby receivers.

Noise-sensitive land uses in the project area include residential dwellings, the nearest of which would be located within approximately 25 feet of construction activities. Edith B. Storey Elementary School is located at the southeast corner of the E. Church Avenue and Peach Avenue intersection. The nearest school building is located approximately 125 feet from Peach Avenue. Based on these distances and assuming an average construction noise level of 83 dBA $L_{eq}$ at 50 feet, predicted exterior construction-generated noise levels could reach levels of approximately 89 dBA $L_{eq}$ at these nearest residential land uses and approximately 77 dBA $L_{eq}$ at the nearest elementary school building. Based on these same assumptions and assuming an average exterior-to-interior noise reduction of 20 dBA, construction activities occurring within approximately 500 feet of Edith B. Storey Elementary School could result in interior noise levels in excess of approximately 45 dBA $L_{eq}$ within nearby classrooms. As noted earlier in this report, interior noise levels in excess of 45 dBA $L_{eq}$ may result in increased levels of annoyance and potential interference with classroom instructional activities.

For residential land uses, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of sleep disruption to occupants of nearby residential dwellings. Typically, construction-related activities occurring during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) would not be exempt from noise ordinance requirements. Mitigation Measure NOI-1 limits construction to between the hours of 7:00 a.m. and 10:00 p.m.

For the reasons discussed above, noise-generating construction activities would be considered to have a potentially significant short-term noise impact to occupants of nearby residential land uses and the Edith B. Storey Elementary School.

**Mitigation Measure NOI-1:**

The following measures shall be implemented to reduce construction-generated noise levels:

a. Construction activities (excluding activities that would result in a safety concern to the public or construction workers, would result in an extreme hardship, or instances where the City finds that the greater public interest would be served) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m., in accordance with City of Fresno Municipal Code requirements. Construction activities shall be prohibited on Sundays and legal holidays.

b. Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

c. Edith B. Storey Elementary School shall be notified a minimum of one week prior to commencing construction activities within 500 feet of the school. Notification shall be provided so that any necessary precautions (such as rescheduling or relocation of interior noise-sensitive activities) can be implemented. The written notice shall include the name and telephone number of the individual empowered to manage construction noise from the project. In the event that noise complaints are received, the individual empowered to manage construction noise shall respond to the complaint within 12 hours. To the extent feasible, the response shall include identification of measures being taken to reduce construction-related noise. Such measures may include, but are not limited to, rescheduling of construction activities, relocation of equipment, and/or use of equipment noise shields or temporary noise barriers.

**Significance After Mitigation**

Implementation of the above mitigation measures would limit construction activities to the less noise-sensitive periods of the day, consistent with requirements typically imposed for noise-generating construction activities by the City of Fresno. The use of mufflers would reduce individual equipment noise levels by approximately 10 dBA. Coordination with Edith B. Storey Elementary School would also be required to minimize potential impacts to nearby interior classroom activities. With implementation of the above mitigation measures and given that construction-generated noise impacts would be short-term, this impact would be considered less than significant.

**b. Less Than Significant Impact:** Based on data obtained to Caltrans, the highest measured traffic vibrations measured at the shoulder of major roadways have never exceeded 2.0 mm/s (Caltrans 2013 (b)). Roadway vehicle traffic along area roadways would, therefore, not be considered a major source of groundborne vibration. As a result, traffic vibration levels associated with implementation of the proposed project would not be projected to exceed applicable thresholds at nearby land uses.

Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction activities associated with the proposed improvements would likely require the use of various off-road equipment, such as tractors, dozers, compactors, and haul trucks. The use of major groundborne vibration-generating construction equipment, such as pile drivers, would not be required for this project.

Groundborne vibration levels associated with representative construction equipment are summarized in Ambient 2019b, Table 10. Based on the vibration levels presented in Ambient 2019b, Table 10, ground vibration generated by construction equipment would not be anticipated to exceed approximately 0.08 inches per second ppv at 25 feet. Predicted vibration levels at the nearest onsite and offsite structures would not exceed the minimum recommended criteria for structural damage and human annoyance (0.2 and 0.1 in/sec ppv, respectively).

**c. No Impact:** The project area is not within an airport land use plan area and is not within two miles of a public airport or within the vicinity of a private airstrip. Therefore, no impact would occur**.**

## 14. Population and Housing

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Induce substantial unplanned population growth either in an area, directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | | | ✓ | |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | | | | ✓ |

**Checklist Discussion**

**a. Less Than Significant Impact:** The project would not induce substantial population growth in the area, either directly or indirectly. It does not involve the construction of new housing. Most of the jobs it would create would be temporary jobs during project construction and would be filled by workers already residing in Fresno or nearby communities.

The project would not involve the extension of a new road, but would involve substantial improvements to an existing road, allowing traffic on to move safely and efficiently through the area. The City of Fresno has already planned the area for urban development and, as part of this planning, had determined that Peach Avenue should be

an arterial street. The improvements would not result in an increase in vehicle traffic volumes along Peach Avenue (VRPA 2018), and therefore would not induce substantial growth. Therefore, this impact would be less than significant.

**b. No Impact:** No houses exist within the project area, including on the land the City would obtain for additional street right-of-way. Therefore, no impact would occur.

## 15. Public Services

| Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities or need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Fire Protection? | | | | ✓ |
| b. Police Protection? | | | | ✓ |
| c. Schools? | | | | ✓ |
| d. Parks? | | | | ✓ |
| e. Other public facilities? | | | | ✓ |

**Checklist Discussion**

**a., b. & d. No Impact:** All but the southerly most 700 feet of the project area is within the City of Fresno. The City provides fire protection, police protection, and park services within its corporate limits. The County of Fresno, within the unincorporated portion of the project area, provides these same services. The project has no design, construction, or operational characteristics that would result in a need for new or physical altered City or County fire protection, police protection, or park facilities or services within the project area. Therefore, no impact would occur.

**c. No Impact:** The Fresno Unified School District provides public school services in the project vicinity. The project has no design, construction, or operational characteristics that would result in the need for new or physically altered school facilities. (This Initial Study addresses potential impacts of the project on Fresno Unified's Storey Elementary School, which is within the project area.)

## 16. Recreation

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | | | | ✓ |
| b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? | | | | ✓ |

**Checklist Discussion**

**a. & b. No Impact:** The project does not have any design, construction, or operational characteristics that would increase the use of parks or other recreation facilities. Moreover, it does not involve the construction of new recreation facilities or expansion of existing facilities. Therefore, no impact would occur.

## 17. Transportation

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? | | | | ✓ |
| b. Conflict or be inconsistent with CEQA Guidelines Section 15063, subdivision (b)? | | | | ✓ |
| c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | ✓ | |
| d. Result in inadequate emergency access? | | | ✓ | |

**Checklist Discussion**

**a. No Impact**

The project would not conflict with the Fresno General Plan, which is the applicable plan that establishes the City's objectives and policies for the performance of the circulation and transportation system. The general plan addresses the street and highway circulation system, public transit, pedestrian paths, and bicycle paths. As demonstrated below, the project would be consistent with the general plan objectives and policies.

1) The General Plan designates Peach Avenue within the project area as an arterial street. The project would result in the development of Peach Avenue in accordance with the arterial street designation.

2) General plan policy MT-1-k establishes a standard of "LOS D or better on street segments and at intersections". LOS D "represents high-density and crowded, but stable traffic flow condition. Users experience substantial restriction in speed and freedom to maneuver with drivers experiencing generally poor level of comfort and convenience."

   The Traffic Technical Report prepared for the project by VRPA Technologies, Inc. calculated the congestion reductions that would result from the project. According to the report, existing Peach Avenue within the project area operates at Levels of Service D and E. With completion of the project, Peach Avenue within the project area would operate at Level of Service C, or in the range of stable flow.

   The Traffic Technical Report projects that by the year 2035, if the City did not widen Peach Avenue, within the project area the street would operate at Levels of Service D, E, and F, meaning motorists would experience stop-and-go gridlock. With implementation of the project, Peach Avenue would operate at Level of Service C, better than the LOS D allowable under the general plan.

3) Fresno General Plan Objective MT-4 is to "Establish and maintain a continuous, safe, and easily accessible bikeway system throughout the metropolitan area to reduce vehicle use, improve air quality, and the quality of life, and provide public health benefits." The project plans include the development bike lanes within the project area.

4) Fresno General Plan Objective MT-5 is to "Establish a well-integrated network of pedestrian facilities to accommodate safe, convenient, practical, and inviting travel by walking including for those with physical mobility and vision impairments". The project plans include the development of pedestrian facilities within the project area.

5) Fresno General Plan Objective MT-8-a is to "Coordinate the planning, design, and construction of the major roadway network with transit operators to facilitate efficient direct transit routing throughout the Planning Area". Bringing Peach Avenue up to arterial standard, including the access provided by the planned bicycle and pedestrian facilities, will facilitate more efficient transit.

Based on the above, the project would be consistent with the Fresno General Plan and, therefore, would have no impact.

**b. No Impact:** CEQA Guidelines Section 15063(b)(2) applies to transportation projects and states the following: "Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152." The widening of Peach Avenue will have little or no impact on VMT. Any increases in VMT in the community are a result of potential urban growth resulting from land use designations of the General Plan that allow for additional housing units/population, and an increase in commercial and industrial development/employment opportunities. Potential increases in VMT due to development in accordance with the General Plan have been addressed in the Transportation section of the Fresno General Plan MEIR.

**c. & d. Less Than Significant Impact:** Widening Peach Avenue to conform to the City's arterial street standard would eliminate traffic hazards posed by the existing incomplete street improvements and would allow safer, more efficient movement of traffic, including emergency vehicles, through the area. However, street construction activities could result in temporary traffic hazards, lane closures and restricted access to properties, as well as affect emergency services. General Plan MEIR Mitigation Measure USS-4 for preparation of a Traffic Control/Traffic Management Plan would be applicable to the project. With the MEIR mitigation measure incorporated, the project will not result in any construction-related traffic safety and emergency service impacts beyond those analyzed in MEIR SCH No. 2012111015. Therefore, the project will have a less-than-significant impact with respect to construction-related traffic safety and emergency services.

**General Plan MEIR Mitigation Measure**

The proposed project shall implement and incorporate the Traffic Control/Traffic Management Plan mitigation measure (USS-4) as identified in the Master Environmental Impact Report SCH No. 111015 Fresno General Plan Mitigation Monitoring Checklist dated July 22, 2019 (Initial Study Attachment 1).

## 18. Tribal Cultural Resources

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Cause a substantial adverse change in the significance of a tribal cultural resource, defined in the Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |

| | | | | |
|---|---|---|---|---|
| a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in the Public Resources Code section 5020.1(k)? | | | ✓ | |
| b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision © of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe? | | | ✓ | |

**Checklist Discussion**

**a. & b. Less than Significant Impact:** According to the Cultural Resources Survey prepared for the project (Initial Study Appendix C), a Sacred Lands File Search was made by the Native American Heritage Commission (NAHC), which did not reveal the presence of Native American traditional cultural places on or near the proposed project location. Letters describing the proposed road widening project and the findings of the Cultural Resources Survey were sent to each of the eleven Native American contacts identified by the NAHC. No responses to the letters were received. If sub-surface resources were to be found during construction, the cultural resources mitigation measures listed in Section E,5 of the Initial Study would provide mitigation.

Pursuant to Assembly Bill 52 (AB 52), the Table Mountain Rancheria and the Dunma Wo Wah Tribes were provided notification of the project and the opportunity to request consultation under AB 52. The City of Fresno mailed notices of the proposed project to each of these tribes on April 8, 2019, which included the required 30-day time period for tribes to request consultation. No response from either tribe was received.

If any artifacts are inadvertently discovered during ground-disturbing activities, federal, State, and local laws and regulations as well as the mitigation measures of the Fresno General Plan MEIR will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resource professional.

In conclusion, with implementation of the MEIR Cultural Resource Mitigation measures, impacts related to tribal cultural resources would be less than significant.

**General Plan MEIR Mitigation Measures:**

The proposed project shall implement and incorporate, as applicable, the cultural resources related mitigation measures as identified in the MEIR SCH No. 2012111015 Fresno General Plan Mitigation Monitoring Checklist dated July 22, 2019 (Initial Study Attachment 1).

## 19. Utilities and Service Systems

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | | | ✓ | |

| | | | | |
|---|---|---|---|---|
| b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiply dry years? | | | ✓ | |
| c. Result in a determination by the wastewater treatment provider that services or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | | | ✓ | |
| d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | | | ✓ | |
| e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | | | ✓ | |

**Checklist Discussion**

**a. Less Than Significant Impact:** The project would require modifying, replacing, moving, or extending existing water, sewer, storm water drainage, electricity, gas, and communications facilities within the Peach Avenue right-of way. As part of the project, the impacts of these new, expanded, or relocated facilities are analyzed throughout this Initial Study, and have been found to not cause significant environmental effects after incorporated mitigation.

**b. Less Than Significant Impact:** The project would use water during the construction phase and for irrigation of the landscaping proposed for planting in median islands. According to the City of Fresno Department of Public Works, the City's water supply system has a sufficient supply of water available to serve the project from existing entitlements and resources. No new or expanded entitlements would be required. Therefore, this impact would be less than significant.

**c. Less Than Significant Impact:** The widened Peach Avenue would not generate wastewater and, therefore, the project does not have the potential to exceed wastewater treatment provider capacity. The management of wastewater during construction would be subject to Section 7-8.4, Sanitation, in the City's Standard Specifications.

**d. & e. Less Than Significant Impact:** According to the City of Fresno Department of Public Works, the landfill that would serve the project has sufficient permitted capacity to accommodate the project's solid waste disposal needs and complies with federal, state, and local statutes and regulations related to solid waste.

## 20. Wildfire

| If located in or near state responsibility areas or land classified as very high fire hazard severity zones, would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Substantially impair an adopted emergency response plan or emergency evacuation plan? | | | | ✓ |
| b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollution concentrations from a wildfire or uncontrolled spread of a wildfire? | | | | ✓ |
| c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency | | | | ✓ |

| | | | | |
|---|---|---|---|---|
| water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | | | | |
| d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | | | | ✓ |

**Checklist Discussion**

**a. – d. No Impact:** The project site is not located in or near a State Responsibility Area and is not classified as a Very High Fire Hazard Severity Zone.

## 21. Mandatory Findings of Significance

| Would the project: | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | | ✓ | | |
| b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects) | | | ✓ | |
| c. Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly? | | ✓ | | |

**Checklist Discussion**

**a. Less Than Significant Impact with Mitigation Incorporated:** The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant, or eliminate important examples of the major periods of California history or prehistory. This conclusion reflects the research and analysis presented in Section E, 4, Biological Resources, and Section E, 5, Cultural Resources and the fact that the City has incorporated into the project Mitigation Measure BIO-1, as well as mitigation measures from the General Plan MEIR.

**b. Less Than Significant Impact:** The project would not have impacts that are individually limited but cumulatively considerable. The City is proposing to widen Peach Avenue to the arterial street standard as part of its efforts to implement the transportation objective and policies in the Fresno General Plan. The Master EIR for the Fresno

General Plan evaluated the cumulative impacts that would result from implementation of the transportation objectives and policies, including this project, and concluded that the cumulative impact of planned roadway network within the City of Fresno was less than significant. Implementation of the proposed project would result in the operation of Peach Avenue within the project area at an acceptable level-of-service in the foreseeable future.

**c. Less Than Significant Impact with Mitigation Incorporated:** The project would not have environmental effects that would cause adverse effects on human beings, either directly or indirectly, except for potential noise impacts due to construction. However, this impact can be reduced to a less than significant level by Mitigation Measure NOI-1.

## F. Names of Persons Who Prepared or Participated in the Initial Study/Environmental Checklist

### 1. Lead Agency

**City of Fresno**
Department of Public Works – Capital Management Division
2600 Fresno Street, Room 4016
Fresno, CA 93721-3615

Scott Tyler, P.E., Public Works Manager
Phone: (559) 621-8654, Fax (559) 488-1045
Email: Scott.Tyler@fresno.gov

Han Ngo, P.E., Professional Engineer
Phone: (559) 621-8701
Email: han.ngo@fresno.gov

### 2. Project Engineer

**Blair, Church & Flynn Consulting Engineers**
451 Clovis Avenue, Suite 200
Clovis, CA 93612

Contact: Timothy J. Flynn, PE
Phone (559) 326-1400, FAX (559) 326-1500
Email: tflynn@bcf-engr.com

Contact: Brad Kerner, PE
Phone (559) 326-1400, FAX (559) 326-1500
Email: bkerner@bcf-engr.com

### 3. Initial Study/Environmental Checklist Consultant:

**Odell Planning & Research, Inc.**
49346 Road 426, Suite 2
Oakhurst, California 93644
Telephone: (559) 472-7167

Contacts:

Scott B. Odell, AICP, Principal & Project Manager
E-mail: scott@odellplanning.com

Nicole Hoke, Associate Planner
E-mail: nicole@odellplanning.com

## G. Sources Consulted

The following table lists the documents and individuals consulted in preparing this Initial Study. The table also lists the locations where the documents are available for public review.

| Sources Consulted | |
|---|---|
| **Documents** | **Location[a]** |
| Ambient Air Quality & Noise Consulting. *Air Quality & Greenhouse Gas Impact Analysis* for S. *Peach Avenue Widening Between E. Jensen and E. Butler Avenues, Fresno, CA.* (January 2019a) | Appendix A |
| Ambient Air Quality & Noise Consulting. *Noise & Groundborne Vibration Impact Analysis for S. Peach Avenue Widening Between E. Jensen and E. Butler Avenues, Fresno, CA.* (January 2019b)<br>Sources cited by Ambient 2019b:<br>United States Department of Transportation, Federal Transit Administration (FTA). April 2006. *Transit Noise and Vibration Impact Assessment.* | Appendix D |
| Blair, Church & Flynn Consulting Engineers. *Peach Avenue Widening Between Jensen and Butler Avenues Schematic Design Report* (April 2013) | Odell |
| California Department of Conservation. *Important Farmland Map for Fresno County* (2016) | www |
| California Department of Conservation. *Williamson Act Map for Fresno County* (2015/2016) | www |
| California Department of Forestry and Fire Protection. *FHSZ Viewer*. (Accessed March 19, 2019) | www |
| California Department of Transportation. *Standard Environmental Reference* (Updated February 21, 2013) | www |
| California Department of Toxic Substance Control. *Envirostor* (Accessed November 4, 2013) | www |
| City of Fresno. Development and Resource Management Department. *Draft Master Environmental Impact Report, General Plan and Development Code Update, City of Fresno, Fresno County, California* (July 22, 2014) | www |
| City of Fresno. Development and Resource Management Department. *Response to Comments on the Draft Master Environmental Impact Report, General Plan and Development Code Update, City of Fresno, Fresno County, California* (December 5, 2014) | www |
| City of Fresno. Development and Resource Management Department. *Fresno General Plan* (December 18, 2014) | www |
| City of Fresno. *Municipal Code of the City of Fresno, Chapter 12 Land Use Planning and Zoning, Article 2 Establishment of Land Use District and Regulations Applicable Therein.* | www |
| City of Fresno. *Municipal Code of the City of Fresno, Chapter 15 Citywide Development Code* | www |
| City of Fresno. Public Works Department, Traffic Engineering Services. *Standard Drawings* (February 2016) | www |
| City of Fresno. Public Works Department. *Standard Specifications* (January 15th, 2013) | www |
| County of Fresno. *Fresno County General Plan Policy Document* (October 2000) | www |

| Sources Consulted | |
|---|---|
| Federal Aviation Administration. *San Francisco Sectional Aeronautical Chart, 101st Edition* (Effective August 16, 2018 to February 28, 2019) | www |
| Google Earth. Aerial photography accessed throughout Initial Study preparation. | www |
| Live Oak Associates, Inc. *Biotic Evaluation: Peach Avenue Widening Project, City of Fresno, California* (May 14, 2014) | Appendix B |
| Mintier & Associates. *Fresno County General Plan Update Background Report* (2000) | www |
| National Wildlife Coordinating Group. Glossary of Wildland Fire Terminology, PMS 205 (July 2012) | www |
| Pavement Interactive. *Energy and Road Construction – What's the Mileage of Roadway?* (February 21, 2012) | www |
| Salem Engineering Group, Inc. *Geotechnical Engineering Investigation, Proposed Peach Avenue Widening (Between Butler and Jensen Avenues) Fresno, California* (April 5, 2013) | BCF |
| Sierra Valley Cultural Planning. *A Cultural Resource Survey of the Peach Avenue Widening Between Jensen and Butler Avenues Project Area, City of Fresno, Fresno County, California* (November 21, 2013) | Appendix C |
| United States Department of the Interior Geological Survey. Malaga Quadrangle, California, 7.5 Series Topographic Map | Odell |
| United States Department of the Interior Geological Survey. *Mineral Resources Online Spatial Data.* Accessed January 9, 2018. | www |
| VRPA Technologies, Inc. *Peach Avenue Widening Between Hamilton and Jensen Avenue Traffic Technical Report* (October 2018) | Appendix E |

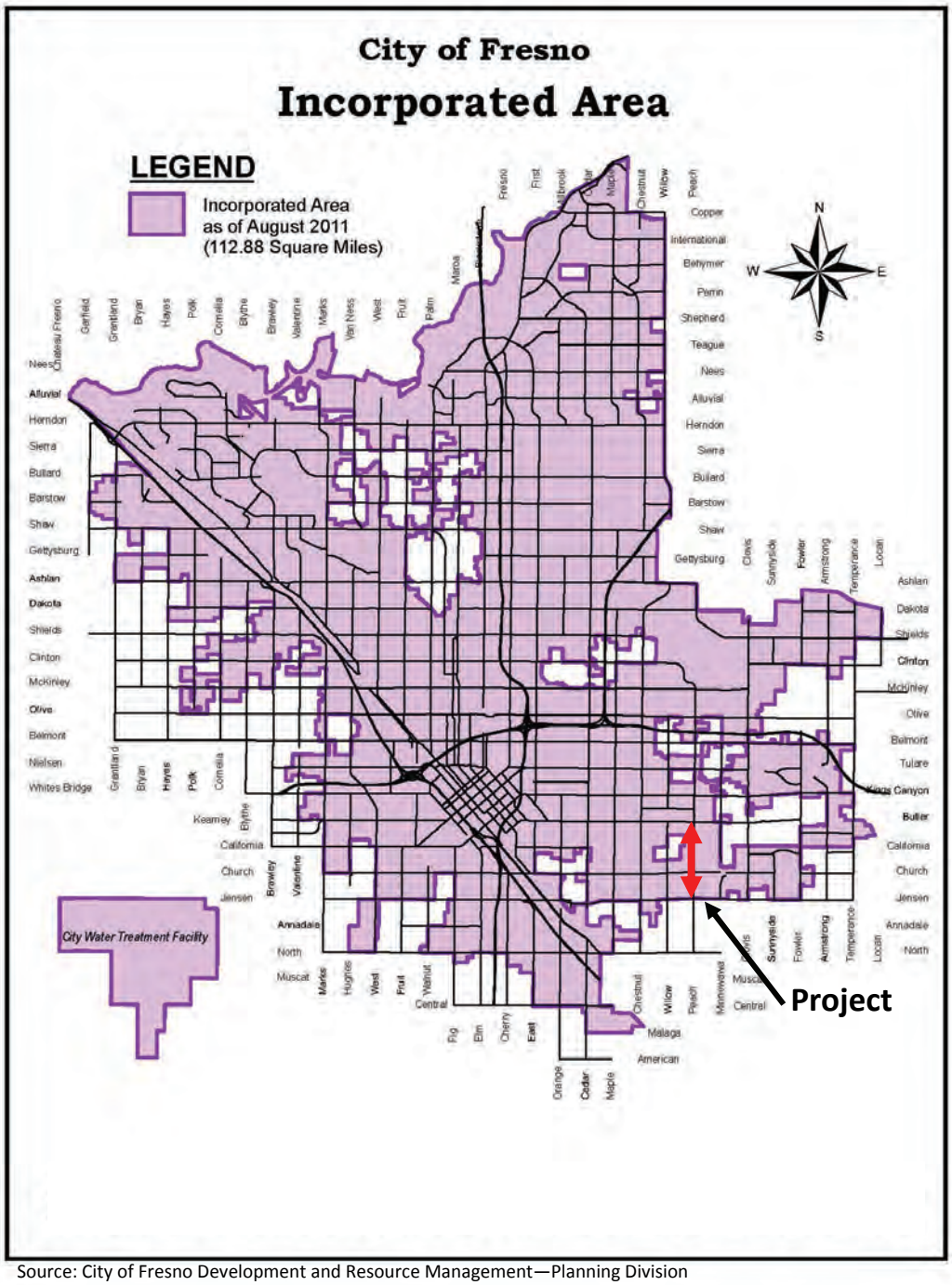
[a]Location where document is available for public review.

Abbreviations: (See Section G for contact information.)

BCF: Blair, Church & Flynn Consulting Engineers

Odell: Odell Planning & Research, Inc.

WWW: World Wide Web




Source: City of Fresno Development and Resource Management—Planning Division

N

One Mile

Project Location

FIGURE 1

Project Regional Location

City of Fresno

Peach Avenue Widening Between Jensen and Butler Avenues Project

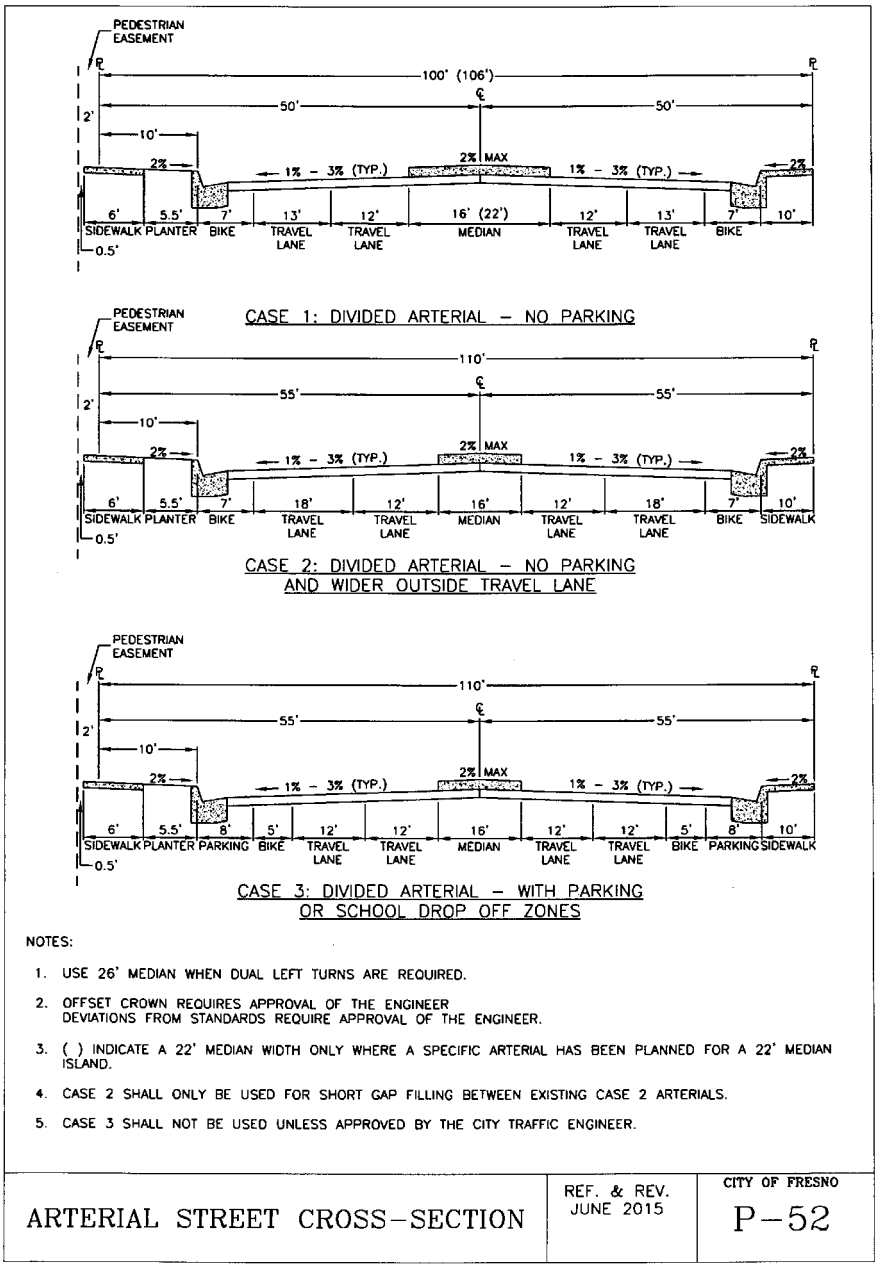
ODELL *Planning & Research, Inc.*




FIGURE 2
Project Location

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*



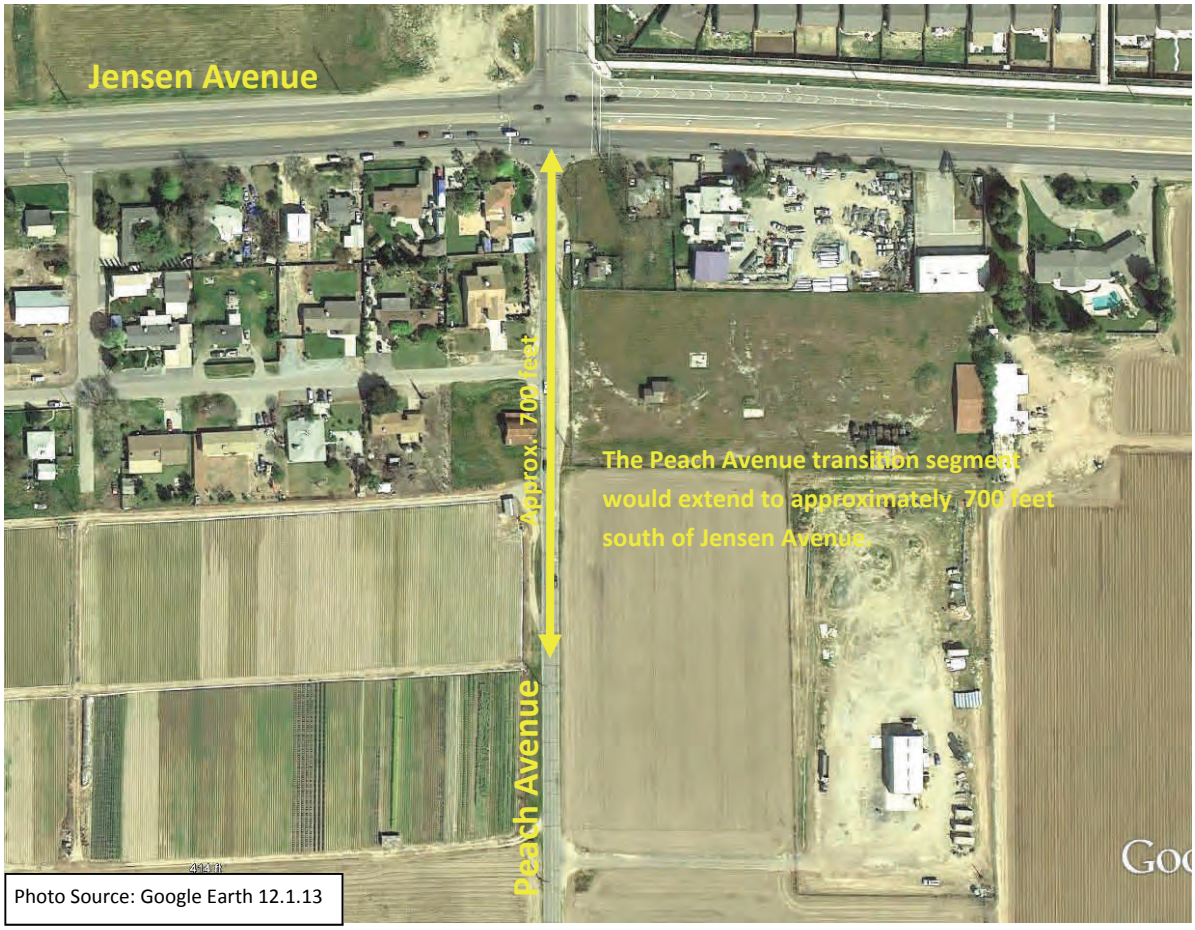

Source: City of Fresno Department of Public Works Standard Specifications

FIGURE 3
Arterial Street Cross Section

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

# Peach Avenue South of Jensen Avenue




The project includes constructing improvements for a distance of approximately 700 feet south of Jensen Avenue to provide a transition from the four-lane Peach Avenue arterial street north of Jensen Avenue to the existing two-lane street south of Jensen Avenue.

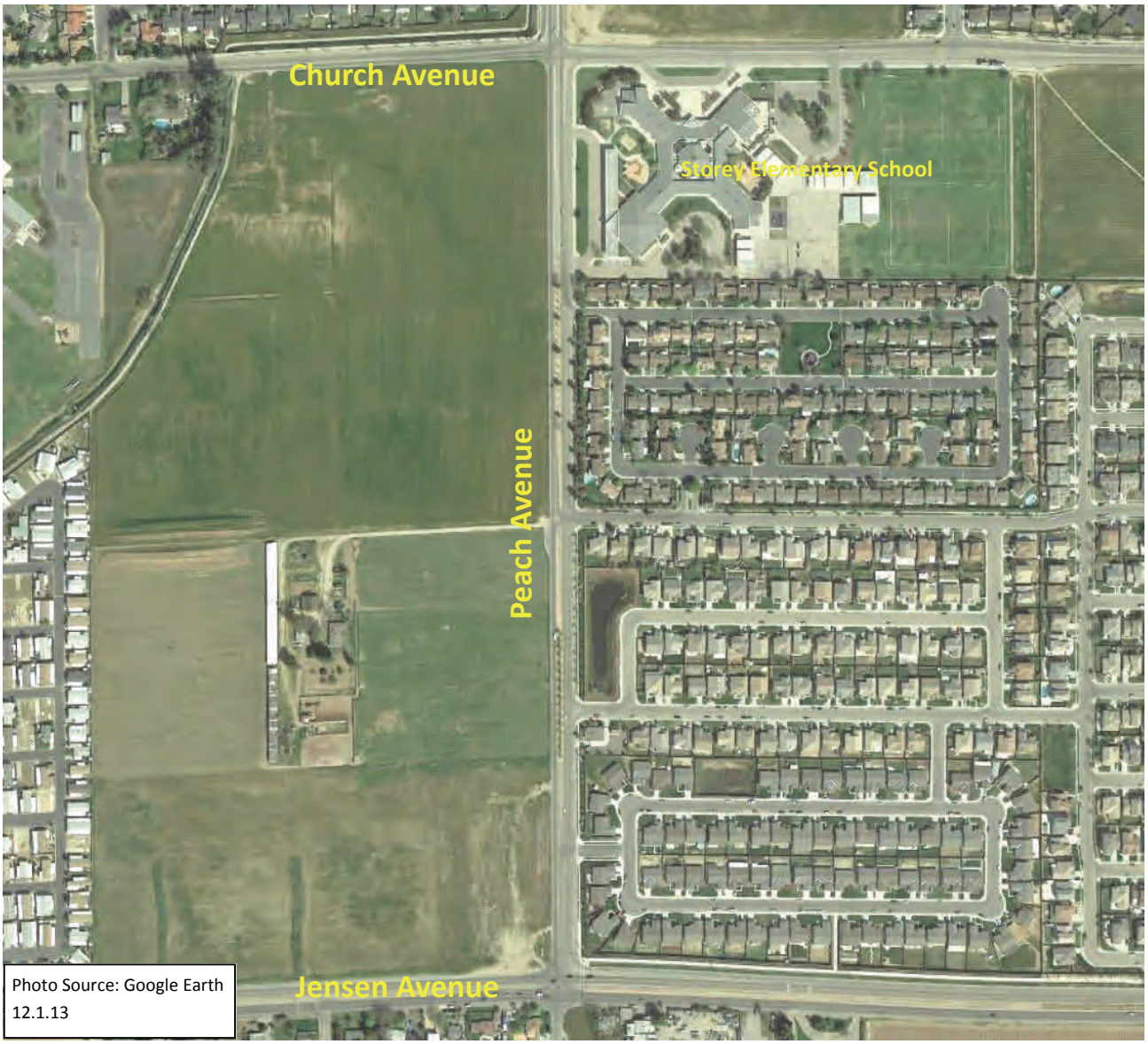
N

FIGURE 4
Peach Avenue South of Jensen Avenue

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

# Peach Avenue from Jensen to Church Avenue




Peach Avenue from Jensen Avenue north to Church Avenue. Storey Elementary School is at the southeast corner of Peach and Church Avenues. The City of Fresno would be required to obtain additional right-of-way along the west side of Peach Avenue in order to develop Peach Avenue to the four-lane arterial street standard.

N

Approx. one-quarter mile

FIGURE 5
Peach Avenue from Jensen to Church Ave.

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

## Peach Avenue from Church Ave. to California Ave. Alignment




Photo Source: Google Earth 12.1.13

In order to develop Peach Avenue to the arterial street standard, additional right-of-way is needed from the undeveloped properties along Peach Avenue from Church Avenue north to the California Avenue alignment (San Joaquin Valley Railroad track)

N

Approx. one-quarter mile

FIGURE 6
Peach Avenue from Church to California Ave. Alignment

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

# Peach Avenue from California Avenue Alignment to Butler Avenue




The Fresno General Plan designates Peach Avenue north of the California Avenue alignment as a scenic arterial street. Additional right-of-way would be needed along the east side of Peach Avenue between Hamilton Avenue and the California Avenue alignment to develop Peach Avenue to the arterial street standard. The additional right-of-way encompasses trees that would have to be removed for the project. The City would replace the trees on a one-to-one basis in the general area where the existing trees are located.

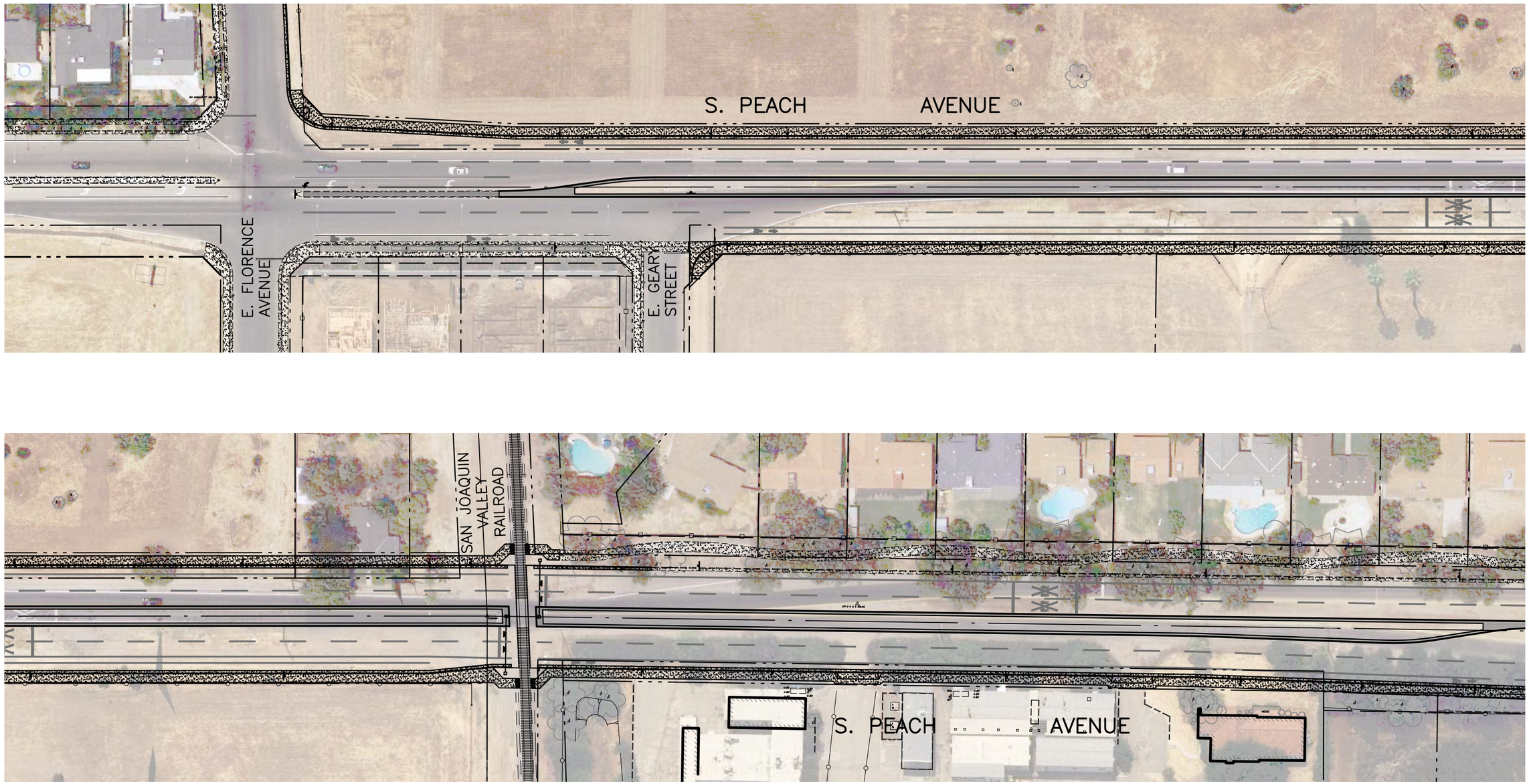
N

Approx. one-quarter mile

FIGURE 7
Peach Ave. from California Ave. to Butler Ave.

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

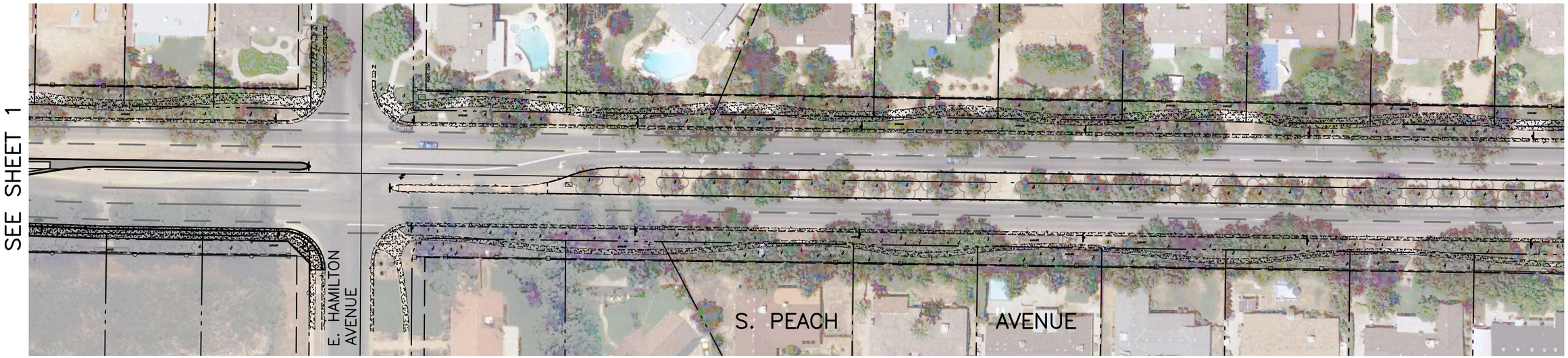


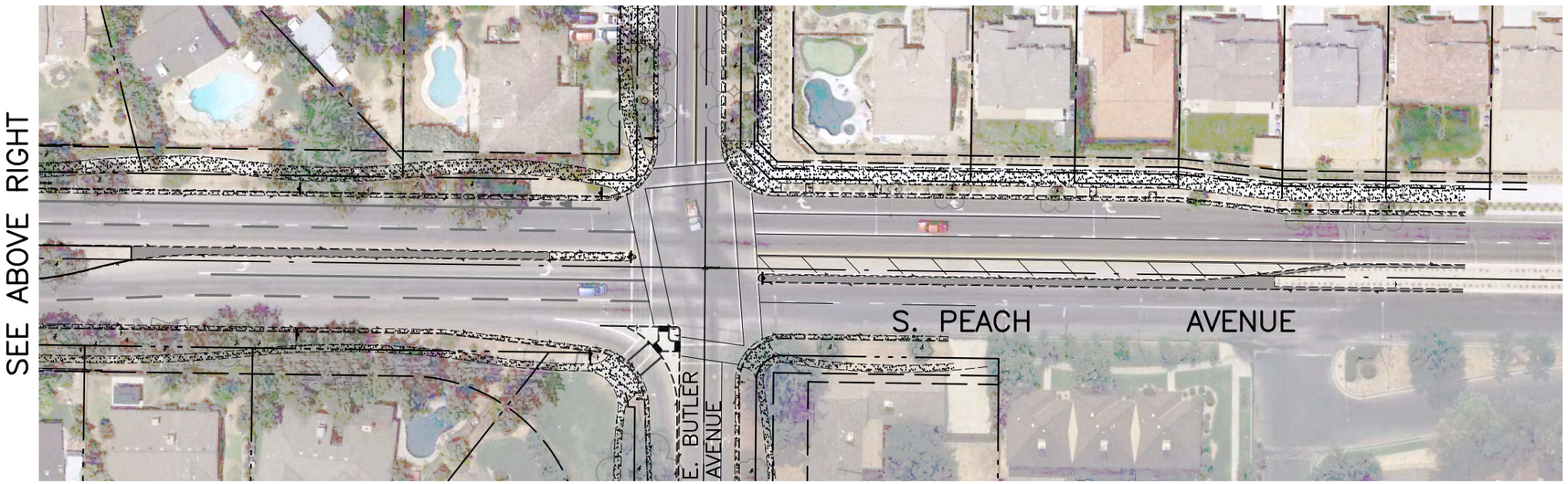

0 20 40 80 120 160
SCALE IN FEET

Figure 8

| | | | | |
|---|---|---|---|---|
| Blair, Church & Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>421 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH NORTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 1<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach North.dwg; Layout1 Plot by: joshua Nov 14, 2018 - 2:50pm



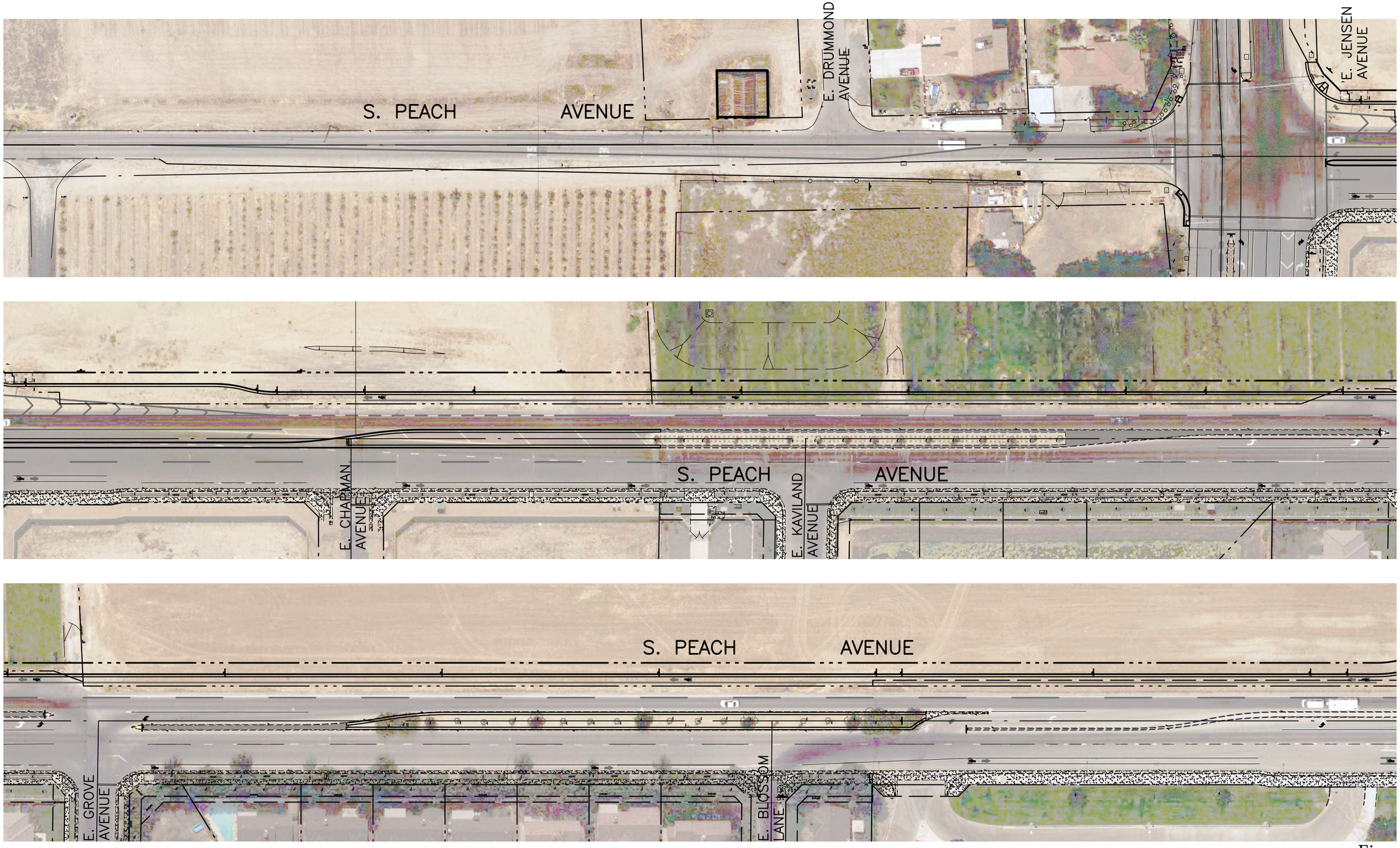




0 20 40 80 120 160
SCALE IN FEET

Figure 9

| | | | | |
|---|---|---|---|---|
| Blair, Church & Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>481 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH NORTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 2<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach North.dwg; Layout2 Plot by: joshua Nov 14, 2018 - 2:50pm




0 20 40 80 120 160
SCALE IN FEET

Figure 10

Blair, Church & Flynn
CONSULTING ENGINEERS

CONSULTANT
Blair, Church & Flynn
Consulting Engineers
481 Clovis Avenue,
Suite 200
Clovis, California 93612
Tel (559) 326-1400
Fax (559) 326-1999

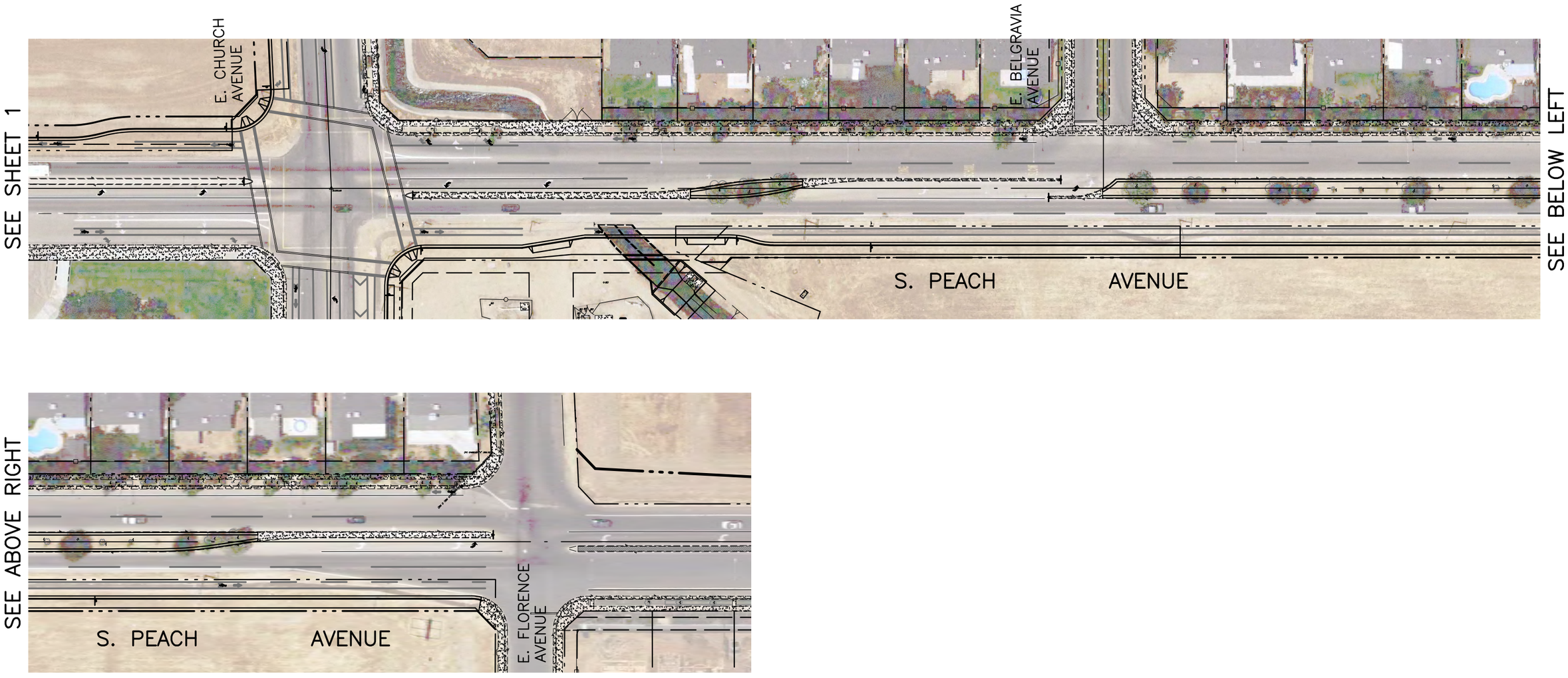
CITY OF FRESNO

PEACH AVENUE WIDENING
PEACH SOUTH
PROJECT LIMITS

DR. BY JCA
CH. BY BRK
DATE 2018-11-14
SCALE: AS NOTED

SHEET NO. 1
OF 2 SHEETS

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach South.dwg; Layout1 Plot by: joshua Nov 14, 2018 - 2:47pm




0 20 40 80 120 160
SCALE IN FEET

Figure 11

| | | | | |
|---|---|---|---|---|
| Blair, Church & Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>421 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1599 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH SOUTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 2<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach South.dwg; Layout2 Plot by: joshua Nov 14, 2018 - 2:47pm




Photo Source: Google Earth 12.1.13

Peach Avenue Scenic Arterial looking south from near Butler Avenue. Existing landscaping would be retained. No trees would be removed.




Photo Source: Google Earth

Incomplete segment of Peach Avenue Scenic Arterial looking south from near Hamilton Avenue. Trees on the left would be removed to allow street widening; replacement trees would be planted.

N

FIGURE **12**
Views of Peach Ave. Scenic Arterial

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*




Photo Source: Google Earth

Peach Avenue Scenic Arterial looking north from California Avenue alignment & railroad crossing. Some of the trees on the right would be removed to allow street widening; replacement trees would be planted.




Photo Source: Google Earth 12.1.13

Peach Avenue looking north from near Grove Avenue. The easterly side of Peach Avenue is developed to the arterial street standard, with two travel lanes, a bike lane, a landscaped median island, and a sidewalk.

N

FIGURE **13**
Views of Peach Avenue

City of Fresno
Peach Avenue Widening Between Jensen and Butler Avenues Project

ODELL *Planning & Research, Inc.*

# Attachment 1
# MEIR Mitigation Monitoring Checklist for Peach Avenue Widening
**July 22, 2019**

**INCORPORATING MEASURES FROM THE MASTER ENVIRONMENTAL IMPACT REPORT (MEIR) CERTIFIED FOR THE CITY OF FRESNO GENERAL PLAN UPDATE (SCH No. 2012111015)**

This mitigation measure monitoring and reporting checklist was prepared pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15097 and Section 21081.6 of the Public Resources Code (PRC). It was certified as part of the Fresno City Council's approval of the MEIR for the Fresno General Plan update (Fresno City Council Resolution 2014-225, adopted December 18, 2014).

Letter designations to the right of each MEIR mitigation measure listed in this Exhibit note how the mitigation measure relates to the environmental assessment of the above-listed project, according to the key found at right and at the bottoms of the following pages:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Progress
**D** - Responsible Agency Contacted
**E** - Part of City-wide Program
**F** - Not Applicable

The timing of implementing each mitigation measure is identified in in the checklist, as well as identifies the entity responsible for verifying that the mitigation measures applied to a project are performed. Project applicants are responsible for providing evidence that mitigation measures are implemented. As lead agency, the City of Fresno is responsible for verifying that mitigation is performed/completed.

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Aesthetics:** | | | | | | | | |
| **AES-1.** Lighting systems for street and parking areas shall include shields to direct light to the roadway surfaces and parking areas. Vertical shields on the light fixtures shall also be used to direct light away from adjacent light sensitive land uses such as residences.<br>**Verification comments:** | During facility design and prior to initiation of construction activities | Public Works Department (PW) | **X** | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Aesthetics** *(continued)*: | | | | | | | | |
| **AES-2:** Lighting systems for public facilities such as active play areas shall provide adequate illumination for the activity; however, low intensity light fixtures and shields shall be used to minimize spillover light onto adjacent properties.<br>**Verification comments:** | Prior to issuance of building permits | DARM | | | | | | **X** |
| **AES-3**: Lighting systems for non-residential uses, not including public facilities, shall provide shields on the light fixtures and orient the lighting system away from adjacent properties. Low intensity light fixtures shall also be used if excessive spillover light onto adjacent properties will occur.<br>**Verification comments:** | Prior to issuance of building permits | DARM | | | | | | **X** |
| **AES-4:** Lighting systems for freestanding signs shall not exceed 100 foot Lamberts (FT-L) when adjacent to streets which have an average light intensity of less than 2.0 horizontal footcandles and shall not exceed 500 FT-L when adjacent to streets which have an average light intensity of 2.0 horizontal footcandles or greater.<br>**Verification comments:** | Prior to issuance of building permits | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Aesthetics** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AES-5:** Materials used on building facades shall be non-reflective.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | **X** |

**Air Quality:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AIR-1:** Projects that include five or more heavy-duty truck deliveries per day with sensitive receptors located within 300 feet of the truck loading area shall provide a screening analysis to determine if the project has the potential to exceed criteria pollutant concentration based standards and thresholds for NO2 and PM2.5. If projects exceed screening criteria, refined dispersion modeling and health risk assessment shall be accomplished and if needed, mitigation measures to reduce impacts shall be included in the project to reduce the impacts to the extent feasible. Mitigation measures include but are not limited to:<br>• Locate loading docks and truck access routes as far from sensitive receptors as reasonably possible considering site design limitations to comply with other City design standards.<br>• Post signs requiring drivers to limit idling to 5 minutes or less. | Prior to development project approval | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Verification comments:** | | | | | | | | |

**Air Quality** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AIR-2:** Projects that result in an increased cancer risk of 10 in a million or exceed criteria pollutant ambient air quality standards shall implement site-specific measures that reduce toxic air contaminant (TAC) exposure to reduce excess cancer risk to less than 10 in a million. Possible control measures include but are not limited to:<br>• Locate loading docks and truck access routes as far from sensitive receptors as reasonably possible considering site design limitations to comply with other City design standards.<br>• Post signs requiring drivers to limit idling to 5 minutes or less<br>• Construct block walls to reduce the flow of emissions toward sensitive receptors<br>• Install a vegetative barrier downwind from the TAC source that can absorb a portion of the diesel PM emissions<br>• For projects proposing to locate a new building containing sensitive receptors near existing sources of TAC emissions, install HEPA filters in HVAC systems to reduce TAC emission levels exceeding risk thresholds.<br>• Install heating and cooling services at truck stops to eliminate the need for idling during overnight stops to run onboard | Prior to development project approval | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| systems.<br>*(continued on next page)* | | | | | | | | |

**Air Quality** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AIR-2** *(continued from previous page)*<br>• For large distribution centers where the owner controls the vehicle fleet, provide facilities to support alternative fueled trucks powered by fuels such as natural gas or bio-diesel<br>• Utilize electric powered material handling equipment where feasible for the weight and volume of material to be moved.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **AIR-3:** Require developers proposing projects on ARB's list of projects in its Air Quality and Land Use Handbook (Handbook) warranting special consideration to prepare a cumulative health risk assessment when sensitive receptors are located within the distance screening criteria of the facility as listed in the ARB Handbook.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Air Quality** *(continued)*: | | | | | | | | |
| **AIR-4:** Require developers of projects containing sensitive receptors to provide a cumulative health risk assessment at project locations exceeding ARB Land Use Handbook distance screening criteria or newer criteria that may be developed by the San Joaquin Valley Air Pollution Control District (SJVAPCD).<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |
| **AIR-5:** Require developers of projects with the potential to generate significant odor impacts as determined through review of SJVAPCD odor complaint history for similar facilities and consultation with the SJVAPCD to prepare an odor impact assessment and to implement odor control measures recommended by the SJVAPCD or the City to the extent needed to reduce the impact to less than significant.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Biological Resources:** | | | | | | | | |
| **BIO-1:** Construction of a proposed project should avoid, where possible, vegetation communities that provide suitable habitat for a special-status species known to occur within the Planning Area. If construction within potentially suitable habitat must occur, the presence/absence of any special-status plant or wildlife species must be determined prior to construction, to determine if the habitat supports any special-status species. If special-status species are determined to occupy any portion of a project site, avoidance and minimization measures shall be incorporated into the construction phase of a project to avoid direct or incidental take of a listed species to the greatest extent feasible.<br>**Verification comments:** | Prior to development project approval | Public Works Department (PW) | X | | | | | |
| **BIO-2:** Direct or incidental take of any state or federally listed | Prior to | Public Works | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| species should be avoided to the greatest extent feasible. If construction of a proposed project will result in the direct or incidental take of a listed species, consultation with the resources agencies and/or additional permitting may be required. Agency consultation through the California Department of Fish and Wildlife (CDFW) 2081 and U.S. Fish and Wildlife Service (USFWS) Section 7 or Section 10 permitting processes must take place prior to any action that<br>*(continued on next page)* | development project approval | Department (PW) | | | | | | |

**Biological Resources** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **BIO-2** *(continued from previous page)*<br>may result in the direct or incidental take of a listed species. Specific mitigation measures for direct or incidental impacts to a listed species will be determined on a case-by-case basis through agency consultation.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-3:** Development within the Planning Area should avoid, | Prior to | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| where possible, special-status natural communities and vegetation communities that provide suitable habitat for special-status species. If a proposed project will result in the loss of a special-status natural community or suitable habitat for special-status species, compensatory habitat-based mitigation is required under CEQA and the California Endangered Species Act (CESA). Mitigation will consist of preserving on-site habitat, restoring similar habitat or purchasing off-site credits from an approved mitigation bank. Compensatory mitigation will be determined through consultation with the City and/or resource agencies. An appropriate mitigation strategy and ratio will be agreed upon by the developer and lead agency to reduce project impacts to special-status natural communities to a less than significant<br>*(continued on next page)* | development project approval | | | | | | | |

**Biological Resources** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **BIO-3** *(continued from previous page)*:<br>level. Agreed-upon mitigation ratios will depend on the quality of the habitat and presence/absence of a special-status species. The specific mitigation for project level impacts will be determined on a case-by-case basis.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-4:** Proposed projects within the Planning Area should | Prior to | Public Works | **X** | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| avoid, if possible, construction within the general nesting season of February through August for avian species protected under Fish and Game Code 3500 and the Migratory Bird Treaty Act (MBTA), if it is determined that suitable nesting habitat occurs on a project site. If construction cannot avoid the nesting season, a pre-construction clearance survey must be conducted to determine if any nesting birds or nesting activity is observed on or within 500-feet of a project site. If an active nest is observed during the survey, a biological monitor must be on site to ensure that no proposed project activities would impact the active nest. A suitable buffer will be established around the active nest until the nestlings have fledged and the nest is no longer active. Project activities<br>*(continued on next page)* | development project approval and during construction activities | Department (PW) | | | | | | |

**Biological Resources** *(continued)*:

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|---|---|---|---|---|---|---|---|---|
| **BIO-4** *(continued from previous page)*:<br>may continue in the vicinity of the nest only at the discretion of the biological monitor.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-5:** If a proposed project will result in the removal or impact | Prior to | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| to any riparian habitat and/or a special-status natural community with potential to occur in the Planning Area, compensatory habitat-based mitigation shall be required to reduce project impacts. Compensatory mitigation must involve the preservation or restoration or the purchase of off-site mitigation credits for impacts to riparian habitat and/or a special-status natural community. Mitigation must be conducted in-kind or within an approved mitigation bank in the region. The specific mitigation ratio for habitat-based mitigation will be determined through consultation with the appropriate agency (*i.e.*, CDFW or USFWS) on a case-by-case basis.<br>**Verification comments:** | development project approval | | | | | | | |

**Biological Resources** *(continued)*:

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|---|---|---|---|---|---|---|---|---|
| **BIO-6:** Project impacts that occur to riparian habitat may also result in significant impacts to streambeds or waterways protected under Section 1600 of Fish and Wildlife Code and Section 404 of the CWA. CDFW and/or USACE consultation, determination of mitigation strategy, and regulatory permitting to reduce impacts, as required for projects that remove riparian habitat and/or alter a streambed or waterway, shall be | Prior to development project approval | DARM | | | | | | **X** |

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**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| implemented.<br>**Verification comments:** | | | | | | | | |
| **BIO-7:** Project-related impacts to riparian habitat or a special-status natural community may result in direct or incidental impacts to special-status species associated with riparian or wetland habitats. Project impacts to special-status species associated with riparian habitat shall be mitigated through agency consultation, development of a mitigation strategy, and/or issuing incidental take permits for the specific special-status species, as determined by the CDFW and/or USFWS.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | **X** |

**Biological Resources** *(continued)*:

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|---|---|---|---|---|---|---|---|---|
| **BIO-8**: If a proposed project will result in the significant alteration or fill of a federally protected wetland, a formal wetland delineation conducted according to U.S. Army Corps of Engineers (USACE) accepted methodology is required for each project to determine the extent of wetlands on a project site. The delineation shall be used to determine if federal | Prior to development project approval | DARM | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| permitting and mitigation strategy are required to reduce project impacts. Acquisition of permits from USACE for the fill of wetlands and USACE approval of a wetland mitigation plan would ensure a "no net loss" of wetland habitat within the Planning Area. Appropriate wetland mitigation/creation shall be implemented in a ratio according to the size of the impacted wetland.<br>**Verification comments:** | | | | | | | | |
| **BIO-9:** In addition to regulatory agency permitting, Best Management Practices (BMPs) identified from a list provided by the USACE shall be incorporated into the design and construction phase of the project to ensure that no pollutants or siltation drain into a federally protected wetland. Project design features such as fencing, appropriate drainage and<br>*(continued on next page)* | Prior to development project approval; but for long-term operational BMPs, prior to issuance of occupancy | DARM | | | | | | **X** |

**Biological Resources** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
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|---|---|---|---|---|---|---|---|---|
| **BIO-9** *(continued from previous page)*:<br>incorporating detention basins shall assist in ensuring project-related impacts to wetland habitat are minimized to the greatest extent feasible.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Cultural Resources:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **CUL-1:** If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.<br>If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | Public Works Department (PW) | **X** | | | | | |

**Cultural Resources** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-1** *(continued from previous page)*<br><br>recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.<br><br>No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-germ preservation to allow future scientific study.<br><br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **CUL-2:** Subsequent to a preliminary City review of the project grading plans, if there is evidence that a project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for prehistoric archaeological resources shall be conducted. The following procedures shall be followed.<br><br>If prehistoric resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that buried prehistoric<br><br>*(continued on next page)* | Prior to commencement of, and during, construction activities | Public Works Department (PW) | **X** | | | | | |

**Cultural Resources** *(continued)***:**

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **CUL-2** *(continued from previous page)*<br><br>archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with CEQA Guidelines Section 15064.5.<br><br>If the resources are determined to be unique prehistoric archaeological resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | | | | | | |

**Cultural Resources** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **CUL-2** *(further continued from previous two pages)*<br><br>to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.<br><br>If prehistoric resources are found during the field survey or literature review, the resources shall be inventoried using appropriate State record forms and submit the forms to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for significance. If the resources are found to be significant, measures shall be identified by the qualified archaeologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.<br><br>In addition, appropriate mitigation for excavation and construction activities in the vicinity of the resources found during the field survey or literature review shall include an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional prehistoric archaeological resources are found during<br><br>*(continued on next page)* | *[see Page 14]* | *[see Page 14]* | | | | | | |

Cultural Resources *(continued)*:

**A** - Incorporated into Project
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**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-2** *(further continued from previous three pages)*<br>excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.<br>**Verification comments:** | *[see Page 14]* | *[see Page 14]* | | | | | | |
| **CUL-3:** Subsequent to a preliminary City review of the project grading plans, if there is evidence that a project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for unique paleontological/geological resources shall be conducted. The following procedures shall be followed:<br>If unique paleontological/geological resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that unique paleontological/geological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified paleontologist shall be consulted to determine whether the resource requires further study. The qualified paleontologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | Public Works Department (PW) | X | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-3** *(continued from previous page)*<br><br>resources, including but not limited to, excavation of the finds and evaluation of the finds. If the resources are determined to be significant, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any paleontological/geological resources recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.<br><br>If unique paleontological/geological resources are found during the field survey or literature review, the resources shall be inventoried and evaluated for significance. If the resources are found to be significant, mitigation measures shall be identified by the qualified paleontologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. In addition, appropriate mitigation for excavation and construction activities in the vicinity of the<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | | | | | | |

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**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Cultural Resources** *(continued)*: | | | | | | | | |
| **CUL-3** *(further continued from previous two pages)*<br>resources found during the field survey or literature review shall include a paleontological monitor. The monitoring period shall be determined by the qualified paleontologist. If additional paleontological/geological resources are found during excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.<br>**Verification comments:** | *[see Page 17]* | *[see Page 17]* | | | | | | |
| **CUL-4:** In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | Public Works Department (PW) | **X** | | | | | |

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**D** - Responsible Agency Contacted
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Cultural Resources** *(continued)*: | | | | | | | | |
| **CUL-4** *(continued from previous page)*<br><br>likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains.<br><br>Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.<br><br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

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**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Hazards and Hazardous Materials** | | | | | | | | |
| **HAZ-1:** Re-designate the existing vacant land proposed for low density residential located northwest of the intersection of East Garland Avenue and North Dearing Avenue and located within Fresno Yosemite International Airport Zone 1-RPZ, to Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-2:** Limit the proposed low density residential (1 to 3 dwelling units per acre) located northwest of the airport, and located within Fresno Yosemite International Airport Zone 3-Inner Turning Area, to 2 dwelling units per acre or less.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-3:** Re-designate the current area within Fresno Yosemite International Airport Zone 5-Sideline located northeast of the airport to Public Facilities-Airport or Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Hazards and Hazardous Materials** *(continued)*: | | | | | | | | |
| **HAZ-4:** Re-designate the current vacant lots at the northeast corner of Kearney Boulevard and South Thorne Avenue to Public Facilities-Airport or Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-5:** Prohibit residential uses within Safety Zone 1 northwest of the Hawes Avenue and South Thorne Avenue intersection.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-6:** Establish an alternative Emergency Operations Center in the event the current Emergency Operations Center is under redevelopment or blocked.<br>**Verification comments:** | Prior to redevelopment of the current Emergency Operations Center | Fresno Fire Department and Mayor/ City Manager's Office | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Hydrology and Water Quality** | | | | | | | | |
| **HYD-1:** The City shall develop and implement water conservation measures to reduce the per capita water use to 215 gallons per capita per day.<br>**Verification comments:** | Prior to water demand exceeding water supply | Department of Public Utilities (DPU) | | | | | | X |
| **HYD-2:** The City shall continue to be an active participant in the Kings Water Authority and the implementation of the Kings Basin IRWMP.<br>**Verification comments:** | Ongoing | DPU | | | | | | X |
| **HYD-5.1:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan collection systems to less than significant.<br>• Implement the existing Storm Drainage Master Plan (SDMP) for collection systems in drainage areas where the amount of imperviousness is unaffected by the change in land uses.<br>*(continued on next page)* | Prior to exceedance of capacity of existing stormwater drainage facilities | Fresno Metropolitan Flood Control District (FMFCD), DARM, and PW | | | | | | X |

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**B** - Mitigated
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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

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|---|---|---|---|
| **HYD-5.1** *(continued from previous page)*<br>• Update the SDMP in those drainage areas where the amount of imperviousness increased due to the change in land uses to determine the changes in the collection systems that would need to occur to provide adequate capacity for the stormwater runoff from the increased imperviousness.<br>• Implement the updated SDMP to provide stormwater collection systems that have sufficient capacity to convey the peak runoff rates from the areas of increased imperviousness.<br>Require developments that increase site imperviousness to install, operate, and maintain FMFCD approved on-site detention systems to reduce the peak runoff rates resulting from the increased imperviousness to the peak runoff rates that will not exceed the capacity of the existing stormwater collection systems.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Hydrology and Water Quality** *(continued)*: | | | | | | | | |
| **HYD-5.2:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan retention basins to less than significant:<br>Consult the SDMP to analyze the impacts to existing and planned retention basins to determine remedial measures required to reduce the impact on retention basin capacity to less than significant. Remedial measures would include:<br>• Increase the size of the retention basin through the purchase of more land or deepening the basin or a combination for planned retention basins.<br>• Increase the size of the emergency relief pump capacity required to pump excess runoff volume out of the basin and into adjacent canal that convey the stormwater to a disposal facility for existing retention basins.<br>• Require developments that increase runoff volume to install, operate, and maintain, Low Impact Development (LID) measures to reduce runoff volume to the runoff volume that will not exceed the capacity of the existing retention basins.<br>**Verification comments:** | Prior to exceedance of capacity of existing retention basin facilities | FMFCD, DARM, and PW | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **Hydrology and Water Quality** *(continued)*: | | | | | | | | |
| **HYD-5.3:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan urban detention (stormwater quality) basins to less than significant.<br><br>Consult the SDMP to determine the impacts to the urban detention basin weir overflow rates and determine remedial measures required to reduce the impact on the detention basin capacity to less than significant. Remedial measures would include:<br><br>• Modify overflow weir to maintain the suspended solids removal rates adopted by the FMFCD Board of Directors.<br><br>• Increase the size of the urban detention basin to increase residence time by purchasing more land. The existing detention basins are already at the adopted design depth.<br><br>• Require developments that increase runoff volume to install, operate, and maintain, Low Impact Development (LID) measures to reduce peak runoff rates and runoff volume to the runoff rates and volumes that will not exceed the weir overflow rates of the existing urban detention basins.<br><br>**Verification comments:** | Prior to exceedance of capacity of existing urban detention basin (stormwater quality) facilities | FMFCD, DARM, and PW | | | | | | **X** |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

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| **HYD-5.4:** The City shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan pump disposal systems to less than significant.<br>• Consult the SDMP to determine the extent and degree to which the capacity of the existing pump system will be exceeded.<br>• Require new developments to install, operate, and maintain FMFCD design standard on-site detention facilities to reduce peak stormwater runoff rates to existing planned peak runoff rates.<br>• Provide additional pump system capacity to maximum allowed by existing permitting to increase the capacity to match or exceed the peak runoff rates determined by the SDMP.<br>**Verification comments:** | Prior to exceedance of capacity of existing pump disposal systems | FMFCD, DARM, and PW | | | | | | X |

**Hydrology and Water Quality** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| • **HYD-5.5:** The City shall work with FMFCD to develop and adopt an update to the SDMP for the Southeast Development Area that would be adequately designed to collect, convey and dispose of runoff at the rates and volumes which would be generated by the planned land uses in that area.<br>**Verification comments:** | Prior to development approvals in the Southeast Development Area | FMFCD, DARM, and PW | | | | | | X |
| **Public Services:** | | | | | | | | |
| **PS-1:** As future fire facilities are planned, the fire department shall evaluate if specific environmental effects would occur. Typical impacts from fire facilities include noise, traffic, and lighting. Typical mitigation to reduce these impacts includes:<br>• *Noise:* Barriers and setbacks on the fire department sites.<br>• *Traffic:* Traffic devices for circulation and a "keep clear zone" during emergency responses.<br>• *Lighting:* Provision of hoods and deflectors on lighting fixtures on the fire department sites.<br>**Verification comments:** | During the planning process for future fire department facilities | DARM | | | | | | X |

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**D** - Responsible Agency Contacted
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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Public Services** *(continued)*: | | | | | | | | |
| **PS-2:** As future police facilities are planned, the police department shall evaluate if specific environmental effects would occur. Typical impacts from police facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from police department facilities includes:<br>• *Noise:* Barriers and setbacks on the police department sites.<br>• *Traffic:* Traffic devices for circulation.<br>• *Lighting:* Provision of hoods and deflectors on lighting fixtures on the police department sites.<br>**Verification comments:** | During the planning process for future Police Department facilities | DARM | | | | | | X |
| **PS-3:** As future public and private school facilities are planned, school districts shall evaluate if specific environmental effects would occur with regard to public schools, and DARM shall evaluate other school facilities. Typical impacts from school facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from school facilities includes:<br>*(continued on next page)* | During the planning process for future school facilities | DARM, local school districts, and the Division of the State Architect | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Public Services** *(continued)*: | | | | | | | | |
| **PS-3** *(continued from previous page)*<br>• *Noise*: Barriers and setbacks placed on school sites.<br>• *Traffic*: Traffic devices for circulation.<br>• *Lighting*: Provision of hoods and deflectors on lighting fixtures for stadium lights.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **PS-4:** As future parks and recreational facilities are planned, the City shall evaluate if specific environmental effects would occur. Typical impacts from school facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from park and recreational facilities includes:<br>• *Noise*: Barriers and setbacks placed on school sites.<br>• *Traffic*: Traffic devices for circulation.<br>• *Lighting*: Provision of hoods and deflectors on lighting fixtures for outdoor play area/field lights.<br>**Verification comments:** | During the planning process for future park and recreation facilities | DARM | | | | | | **X** |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Public Services** *(continued)*: | | | | | | | | |
| **PS-5:** As future detention, court, library, and hospital facilities are planned, the appropriate agencies shall evaluate if specific environmental effects would occur. Typical impacts from court, library, and hospital facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts includes:<br>• *Noise:* Barriers and setbacks placed on school sites.<br>• *Traffic:* Traffic devices for circulation.<br>• *Lighting:* Provision of hoods and deflectors on outdoor lighting fixtures.<br>**Verification comments:** | During the planning process for future detention, court, library, and hospital facilities | DARM, to the extent that agencies constructing these facilities are subject to City of Fresno regulation | | | | | | X |
| **Utilities and Service Systems** | | | | | | | | |
| **USS-1:** The City shall develop and implement a wastewater master plan update.<br>**Verification comments:** | Prior to wastewater conveyance and treatment demand exceeding capacity | DPU | | | | | | X |

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**B** - Mitigated
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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems** *(continued)*: | | | | | | | | |
| **USS-2:** Prior to exceeding existing wastewater treatment capacity, the City shall evaluate the wastewater system and shall not approve additional development that contributes wastewater to the wastewater treatment facility that could exceed capacity until additional capacity is provided. By approximately the year 2025, the City shall construct the following improvements:<br>• Construct an approximately 70 MGD expansion of the Regional Wastewater Treatment and Reclamation Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>• Construct an approximately 0.49 MGD expansion of the North Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>**Verification comments:** | Prior to exceeding existing wastewater treatment capacity | DPU | | | | | | X |
| **USS-3:** Prior to exceeding existing wastewater treatment capacity, the City shall evaluate the wastewater system and shall not approve additional development that contributes wastewater to the wastewater treatment facility that could exceed capacity until additional capacity is provided. After<br>*(continued on next page)* | Prior to exceeding existing wastewater treatment capacity | DPU | | | | | | X |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems** *(continued)*: | | | | | | | | |
| **USS-3** *(continued from previous page)*<br>approximately the year 2025, the City shall construct the following improvements:<br>• Construct an approximately 24 MGD wastewater treatment facility within the Southeast Development Area and obtain revised waste discharge requirements as the generation of wastewater is increased.<br>• Construct an approximately 9.6 MGD expansion of the Regional Wastewater Treatment and Reclamation Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **USS-4:** A Traffic Control/Traffic Management Plan to address traffic impacts during construction of water and sewer facilities shall be prepared and implemented, subject to approval by the City (and Fresno County, when work is being done in unincorporated area roadways). The plan shall identify access and parking restrictions, pavement markings and signage, and hours of construction and for deliveries. It shall include haul routes, the notification plan, and coordination with emergency service providers and schools.<br>**Verification comments:** | Prior to construction of water and sewer facilities | PW for work in the City; PW and Fresno County Public Works and Planning when unincorporated area roadways are involved | **X** | | | | | |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems** *(continued)*: | | | | | | | | |
| **USS-5**: Prior to exceeding capacity within the existing wastewater collection system facilities, the City shall evaluate the wastewater collection system and shall not approve additional development that would generate additional wastewater and exceed the capacity of a facility until additional capacity is provided. By approximately the year 2025, the following capacity improvements shall be provided.<br>• Orange Avenue Trunk Sewer: This facility shall be improved between Dakota and Jensen Avenues. Approximately 37,240 feet of new sewer main shall be installed and approximately 5,760 feet of existing sewer main shall be rehabilitated. The size of the new sewer main shall range from 27 inches to 42 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are RS03A, RL02, C01-REP, C02-REP, C03-REP, C04-REP, C05-REP, C06-REL and C07-REP.<br>• Marks Avenue Trunk Sewer: This facility shall be improved between Clinton Avenue and Kearney Boulevard. Approximately 12,150 feet of new sewer main shall be installed. The size of the new sewer main shall range from 33 inches to 60 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CM1-REP and CM2-REP.<br>*(continued on next page)* | Prior to exceeding capacity within the existing wastewater collection system facilities | DPU | | | | | | **X** |

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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems** *(continued)*:

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| **USS-5** *(continued from previous page)*<br>• North Avenue Trunk Sewer: This facility shall be improved between Polk and Fruit Avenues and also between Orange and Maple Avenues. Approximately 25,700 feet of new sewer main shall be installed. The size of the new sewer main shall range from 48 inches to 66 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CN1-REL1 and CN3-REL1.<br>• Ashlan Avenue Trunk Sewer: This facility shall be improved between Hughes and West Avenues and also between Fruit and Blackstone Avenues. Approximately 9,260 feet of new sewer main shall be installed. The size of the new sewer main shall range from 24 inches to 36 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CA1-REL and CA2-REP.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

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**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems** *(continued)*:

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| **USS-6:** Prior to exceeding capacity within the existing 28 pipeline segments shown in Figures 1 and 2 in Appendix J-1, the City shall evaluate the wastewater collection system and shall not approve additional development that would generate additional wastewater and exceed the capacity of one of the 28 pipeline segments until additional capacity is provided.<br>**Verification comments:** | Prior to exceeding capacity within the existing 28 pipeline segments shown in Figures 1 and 2 in Appendix J-1 of the MEIR | DPU | | | | | | X |
| **USS-7:** Prior to exceeding existing water supply capacity, the City shall evaluate the water supply system and shall not approve additional development that demand additional water until additional capacity is provided. By approximately the year 2025, the following capacity improvements shall be provided.<br>• Construct an approximately 80 million gallon per day (MGD) surface water treatment facility near the intersection of Armstrong and Olive Avenues, in accordance with Chapter 9 and Figure 9-1 of the City of Fresno Metropolitan Water Resources Management Plan Update (2014 Metro Plan Update) Phase 2 Report, dated January 2012.<br>*(continued on next page)* | Prior to exceeding existing water supply capacity | DPU | | | | | | X |

**Utilities and Service Systems** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-7** *(continued from previous page)*<br>• Construct an approximately 30 MGD expansion of the existing northeast surface water treatment facility for a total capacity of 60 MGD, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct an approximately 20 MGD surface water treatment facility in the southwest portion of the City, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **USS-8:** Prior to exceeding capacity within the existing water conveyance facilities, the City shall evaluate the water conveyance system and shall not approve additional development that would demand additional water and exceed the capacity of a facility until additional capacity is provided. The following capacity improvements shall be provided by approximately 2025.<br>• Construct 65 new groundwater wells, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>*(continued on next page)* | Prior to exceeding capacity within the existing water conveyance facilities | DPU | | | | | | X |

**Utilities and Service Systems** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **USS-8** *(continued from previous page)*<br>• Construct a 2.0 million gallon potable water reservoir (Reservoir T2) near the intersection of Clovis and California Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 3.0 million gallon potable water reservoir (Reservoir T3) near the intersection of Temperance and Dakota Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 3.0 million gallon potable water reservoir (Reservoir T4) in the Downtown Planning Area, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 4.0 million gallon potable water reservoir (Reservoir T5) near the intersection of Ashlan and Chestnut Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 4.0 million gallon potable water reservoir (Reservoir T6) near the intersection of Ashlan Avenue and Highway 99, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **USS-8** *(continued from previous two pages)*<br>• Construct 50.3 miles of regional water transmission mains ranging in size from 24-inch to 48-inch diameter, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct 95.9 miles of 16-inch diameter transmission grid mains, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>**Verification comments:** | *[see Page 37]* | *[see Page 37]* | | | | | | |
| **USS-9:** Prior to exceeding capacity within the existing water conveyance facilities, the City shall evaluate the water conveyance system and shall not approve additional development that would demand additional water and exceed the capacity of a facility until additional capacity is provided. The following capacity improvements shall be provided after approximately the year 2025 and additional water conveyance facilities shall be provided prior to exceedance of capacity within the water conveyance facilities to accommodate full buildout of the General Plan Update.<br>*(continued on next page)* | Prior to exceeding capacity within the existing water conveyance facilities | DPU | | | | | | **X** |

**Utilities and Service Systems** *(continued)*:

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-9** *(continued from previous page)*<br>• Construct a 4.0 million gallon potable water reservoir (SEDA Reservoir 1) within the northern part of the Southeast Development Area.<br>• Construct a 4.0 million gallon potable water reservoir (SEDA Reservoir 2) within the southern part of the Southeast Development Area.<br>Additional water conveyance facilities shall be provided prior to exceedance of capacity within the water conveyance facilities to accommodate full buildout of the General Plan Update.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems - *Hydrology and Water Quality***

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| **USS-10:** In order to maintain Fresno Irrigation District canal operability, FMFCD shall maintain operational intermittent flows during the dry season, within defined channel capacity and downstream capture capabilities, for recharge.<br>**Verification comments:** | During the dry season | Fresno Irrigation District (FID) | | | | | | X |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **Utilities and Service Systems - *Biological Resources:*** | | | | | | | | |
| **USS-11:** When FMFCD proposes to provide drainage service outside of urbanized areas:<br>(a) FMFCD shall conduct preliminary investigations on undeveloped lands outside of highly urbanized areas. These investigations shall examine wetland hydrology, vegetation and soil types. These preliminary investigations shall be the basis for making a determination on whether or not more in-depth wetland studies shall be necessary. If the proposed project site does not exhibit wetland hydrology, support a prevalence of wetland vegetation and wetland soil types then no further action is required.<br>(b) Where proposed activities could have an impact on areas verified by the Corps as jurisdictional wetlands or waters of the U.S. (urban and rural streams, seasonal wetlands, and vernal pools), FMFCD shall obtain the necessary Clean Water Act, Section 404 permits for activities where fill material shall be placed in a wetland, obstruct the flow or circulation of waters of the United States, impair or reduce the reach of such waters. As part of FMFCD's Memorandum of Understanding with CDFG, Section 404 and 401 permits would be obtained from the U.S. Army Corps of Engineers and from the<br>*(continued on next page)* | Prior to development approvals outside of highly urbanized areas | California Regional Water Quality Control Board (RWQCB), and USACE | | | | | | X |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)**:***

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| **USS-11** *(continued from previous page)*<br><br>Regional Water Quality Control Board for any activity involving filling of jurisdictional waters). At a minimum, to meet "no net loss policy," the permits shall require replacement of wetland habitat at a 1**:**1 ratio.<br><br>(c) Where proposed activities could have an impact on areas verified by the Corps as jurisdictional wetlands or waters of the U.S. (urban and rural streams, seasonal wetlands, and vernal pools), FMFCD shall submit and implement a wetland mitigation plan based on the wetland acreage verified by the U.S. Army Corps of Engineers. The wetland mitigation plan shall be prepared by a qualified biologist or wetland scientist experienced in wetland creation, and shall include the following or equally effective elements:<br><br>i. Specific location, size, and existing hydrology and soils within the wetland creation area.<br><br>ii. Wetland mitigation techniques, seed source, planting specifications, and required buffer setbacks. In addition, the mitigation plan shall ensure adequate water supply is provided to the created wetlands in order to maintain the proper<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)**:***

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| **USS-11** *(continued from previous two pages)*<br><br>hydrologic regimes required by the different types of wetlands created. Provisions to ensure the wetland water supply is maintained in perpetuity shall be included in the plan.<br><br>iii. A monitoring program for restored, enhanced, created, and preserved wetlands on the project site. A monitoring program is required to meet three objectives; 1) establish a wetland creation success criteria to be met; 2) to specify monitoring methodology; 3) to identify as far as is possible, specific remedial actions that will be required in order to achieve the success criteria; and 4) to document the degree of success achieved in establishing wetland vegetation.<br><br>(d) A monitoring plan shall be developed and implemented by a qualified biologist to monitor results of any on-site wetland restoration and creation for five years. The monitoring plan shall include specific success criteria, frequency and timing of monitoring, and assessment of whether or not maintenance activities are being carried out and how these shall be adjusted if necessary.<br><br>*(continued on next page)* | *[see Page 41]* | *[see Page 41]* | |

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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)**:***

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| **USS-11** *(continued from previous three pages)*<br>If monitoring reveals that success criteria are not being met, remedial habitat creation or restoration should be designed and implemented by a qualified biologist and subject to five years of monitoring as described above.<br>Or<br>(e) In lieu of developing a mitigation plan that outlines the avoidance, purchase, or creation of wetlands, FMFCD could purchase mitigation credits through a Corps approved Mitigation Bank.<br>**Verification comments:** | *[see Page 41]* | *[see Page 41]* | | | | | | |
| **USS-12:** When FMFCD proposes to provide drainage service outside in areas that support seasonal wetlands or vernal pools:<br>(a) During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools, FMFCD shall conduct a preliminary rare plant assessment. The assessment will determine the likelihood on whether or not the project site could support rare plants. If it is determined that the project site would not support rare plants, then no further<br>*(continued on next page)* | During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools | California Department of Fish & Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) | | | | | | **X** |

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**E** - Part of City-Wide Program
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)**:***

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| **USS-12** *(continued from previous page)*<br><br>action is required. However, if the project site has the potential to support rare plants; then a rare plant survey shall be conducted. Rare plant surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted at the time of year when the plants in question are identifiable.<br><br>(b) Based on the results of the survey, prior to design approval, FMFCD shall coordinate with CDFG and/or implement a Section 7 consultation with USFWS, shall determine whether the project facility would result in a significant impact to any special status plant species. Evaluation of project impacts shall consider the following:<br><br>• The status of the species in question (*e.g.*, officially listed by the State or Federal Endangered Species Acts).<br><br>• The relative density and distribution of the on-site occurrence versus typical occurrences of the species in question.<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **Utilities and Service Systems - *Biological Resources*** *(continued)*: | | | | | | | | |
| **USS-12** *(continued from previous two pages)*<br>• The habitat quality of the on-site occurrence relative to historic, current or potential distribution of the population.<br>(c) Prior to design approval, and in consultation with the CDFG and/or the USFWS, FMFCD shall prepare and implement a mitigation plan, in accordance with any applicable State and/or federal statutes or laws, that reduces impacts to a less than significant level.<br>**Verification comments:** | *[see Page 44]* | *[see Page 44]* | | | | | | |
| **USS-13:** When FMFCD proposes to provide drainage service outside in areas that support seasonal wetlands or vernal pools:<br>(a) During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools, FMFCD shall conduct a preliminary survey to determine the presence of listed vernal pool crustaceans.<br>*(continued on next page)* | During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools | CDFW and USFWS | | | | | | X |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)*:

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| **USS-13** *(continued from previous page)*<br>(b) If potential habitat (vernal pools, seasonally inundated areas) or fairy shrimp exist within areas proposed to be disturbed, FMFCD shall complete the first and second phase of fairy shrimp presence or absence surveys. If an absence finding is determined and accepted by the USFWS, then no further mitigation shall be required for fairy shrimp.<br>(c) If fairy shrimp are found to be present within vernal pools or other areas of inundation to be impacted by the implementation of storm drainage facilities, FMFCD shall mitigate impacts on fairy shrimp habitat in accordance with the USFWS requirements of the Programmatic Biological Opinion. This shall include on-site or off-site creation and/or preservation of fairy shrimp habitat at ratios ranging from 3:1 to 5:1 depending on the habitat impacted and the choice of on-site or off-site mitigation. Or mitigation shall be the purchase of mitigation credit through an accredited mitigation bank.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems - *Biological Resources*** *(continued)*: | | | | | | | | |
| **USS-14:** When FMFCD proposes to construct drainage facilities in an area where elderberry bushes may occur:<br>(a) During facility design and prior to initiation of construction activities, FMFCD shall conduct a project-specific survey for all potential Valley Elderberry Longhorn Beetle (VELB) habitats (elderberry shrubs), including a stem count and an assessment of historic or current VELB habitat.<br>(b) FMFCD shall avoid and protect all potential identified VELB habitat where feasible.<br>(c) Where avoidance is infeasible, develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act. The mitigation plan shall include, but might not be limited to, relocation of elderberry shrubs, planting of elderberry shrubs, and monitoring of relocated and planted elderberry shrubs.<br>**Verification comments:** | During facility design and prior to initiation of construction activities | CDFW and USFWS | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **Utilities and Service Systems - *Biological Resources*** *(continued)*: | | | | | | | | |
| **USS-15:** Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat, FMFCD shall conduct a survey of trees. If nests are found during the survey, a qualified biologist shall assess the nesting activity on the project site. If active nests are located, no construction activities shall be allowed within 250 feet of the nest until the young have fledged. If construction activities are planned during the no n-breeding period (August through February), a nest survey is not necessary.<br>**Verification comments:** | Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat | CDFW and USFWS | | | | | | X |
| **USS-16:** When FMFCD proposes to construct drainage facilities in an area that supports bird nesting habitat:<br>(a) FMFCD shall conduct a pre-construction breeding-season survey (approximately February 1 through August 31) of proposed project sites in suitable habitat (levee and canal berms, open grasslands with suitable burrows) during the same calendar year that construction is planned to begin. If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.<br>*(continued on next page)* | Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat | CDFW and USFWS | | | | | | X |

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**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems - *Biological Resources*** *(continued)*:

| | | | |
|---|---|---|---|
| **USS-16** *(continued from previous page)*<br><br>(b) During the construction stage, FMFCD shall avoid all burrowing owl nest sites potentially disturbed by project construction during the breeding season while the nest is occupied with adults and/or young. The occupied nest site shall be monitored by a qualified biologist to determine when the nest is no longer used. Avoidance shall include the establishment of a 160-foot diameter non-disturbance buffer zone around the nest site. Disturbance of any nest sites shall only occur outside of the breeding season and when the nests are unoccupied based on monitoring by a qualified biologist. The buffer zone shall be delineated by highly visible temporary construction fencing.<br><br>Based on approval by CDFG, pre-construction and pre-breeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance. Burrowing owls can be passively excluded from potential nest sites in the construction area, either by closing the burrows or placing one-way doors in the burrows according to current CDFG protocol. Burrows shall be examined not more than 30 days before construction to ensure that no owls have recolonized the area of construction.<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems - *Biological Resources*** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-16** *(continued from previous two pages)*<br>For each burrow destroyed, a new burrow shall be created (by installing artificial burrows at a ratio of 2:1 on protected lands nearby.<br>**Verification comments:** | *[see Page 49]* | *[see Page 49]* | | | | | | |
| **USS-17:** When FMFCD proposes to construct drainage facilities in the San Joaquin River corridor:<br>(a) FMFCD shall not conduct instream activities in the San Joaquin River between October 15 and April 15. If this is not feasible, FMFCD shall consult with the National Marine Fisheries Service and CDFW on the appropriate measures to be implemented in order to protect listed salmonids in the San Joaquin River.<br>(b) Riparian vegetation shading the main–channel that is removed or damaged shall be replaced at a ratio and quantity sufficient to maintain the existing shading of the channel. The location of replacement trees on or within<br>*(continued on next page)* | During instream activities conducted between October 15 and April 15 | National Marine Fisheries Service (NMFS), CDFW, and Central Valley Flood Protection Board (CVFPB) | | | | | | X |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems / *Biological Resources*** *(continued)***:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-17** *(continued from previous page)*<br>FMFCD berms, detention ponds or river channels shall be approved by FMFCD and the Central Valley Flood Protection Board.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems – *Recreation / Trails*:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-18:** When FMFCD updates its District Service Plan:<br>Prior to final design approval of all elements of the District Services Plan, FMFCD shall consult with Fresno County, City of Fresno, and City of Clovis to determine if any element would temporarily disrupt or permanently displace adopted existing or planned trails and associated recreational facilities as a result of the proposed District Services Plan. If the proposed project would not temporarily disrupt or permanently displace adopted existing or planned trails, no further mitigation is necessary. If the proposed project would have an effect on the trails and associated facilities, FMFCD shall implement the following:<br>*(continued on next page)* | Prior to final design approval of all elements of the District Services Plan | DARM, PW, City of Clovis, and County of Fresno | | | | | | **X** |

**A** - Incorporated into Project
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems – *Recreation / Trails* *(continued)*:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-18** *(continued from previous page)*<br>(a) If short-term disruption of adopted existing or planned trails and associated recreational facilities occur, FMFCD shall consult and coordinate with Fresno County, City of Fresno, and City of Clovis to temporarily re-route the trails and associated facilities.<br>(b) If permanent displacement of the adopted existing or planned trails and associated recreational facilities occur, the appropriate design modifications to prevent permanent displacement shall be implemented in the final project design or FMFCD shall replace these facilities.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems – *Air Quality*:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-19:** When District drainage facilities are constructed, FMFCD shall:<br>(a) Minimize idling time of construction equipment vehicles to no more than ten minutes, or require that engines be shut off when not in use.<br>*FF(continued on next page)* | During storm water drainage facility construction activities | Fresno Metropolitan Flood Control District and SJVAPCD | | | | | | X |

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**D** - Responsible Agency Contacted
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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems – *Air Quality* *(continued)*:** | | | | | | | | |
| **USS-19** *(continued from previous page)*<br>(b) Construction shall be curtailed as much as possible when the Air Quality Index (AQI) is above 150. AQI forecasts can be found on the SJVAPCD web site.<br>(c) Off-road trucks should be equipped with on-road engines if possible.<br>(d) Construction equipment should have engines that meet the current off-road engine emission standard (as certified by CARB), or be re-powered with an engine that meets this standard.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **Utilities and Service Systems – *Adequacy of Storm Water Drainage Facilities*:** | | | | | | | | |
| **USS-20:** Prior to exceeding capacity within the existing storm water drainage facilities, the City shall coordinate with FMFCD to evaluate the storm water drainage system and shall not approve additional development that would convey additional storm water to a facility that would experience an exceedance of capacity until the necessary additional capacity is provided.<br>**Verification comments:** | Prior to exceeding capacity within the existing storm water drainage facilities | FMFCD, PW, and DARM | | | | | | **X** |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems – *Adequacy of Water Supply Capacity*:** | | | | | | | | |
| **USS-21:** Prior to exceeding existing water supply capacity, the City shall evaluate the water supply system and shall not approve additional development that demand additional water until additional capacity is provided. By approximately the year 2025, the City shall construct an approximately 25,000 AF/year tertiary recycled water expansion to the Fresno-Clovis Regional Wastewater Reclamation Facility in accordance with the 2013 Recycled Water Master Plan and the 2014 City of Fresno Metropolitan Water Resources Management Plan update.<br>Implementation of Mitigation Measure USS-5 is also required prior to approximately the year 2025.<br>**Verification comments:** | Prior to exceeding existing water supply capacity | DPU and DARM | | | | | | X |
| **Utilities and Service Systems – *Adequacy of Landfill Capacity*:** | | | | | | | | |
| **USS-22:** Prior to exceeding landfill capacity, the City shall evaluate additional landfill locations and shall not approve additional development that could contribute solid waste to a landfill that is at capacity until additional capacity is provided.<br>**Verification comments:** | Prior to exceeding landfill capacity | DPU and DARM | | | | | | X |

**A** - Incorporated into Project
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

**Attachment 2**
**PROJECT SPECIFIC MITIGATION MONITORING CHECKLIST**
**City of Fresno Mitigated Negative Declaration**
**PEACH AVENUE WIDENING BETWEEN JENSEN AND BUTLER AVENUES PROJECT**
**July 22, 2019**

| | Mitigation Measure | Implemented By | When Implemented | Verified By |
|---|---|---|---|---|
| | **Aesthetics** | | | |
| AES-1 | The City shall replace, on a 1:1 basis, trees removed to widen Peach Avenue between Hamilton Avenue and the California Avenue alignment. The City shall plant the replacement trees within or adjacent to the street right-of-way in the same general vicinity as the removed trees. An irrigation system shall be provided for the trees. | Public Works Department | During construction activities | |
| | **Biological Resources** | | | |
| BIO-1 | a. The project shall initiate construction outside of the nesting season. This work shall include the removal of all potential nest trees that must be removed for project construction between September 1st and January 31st (outside of the nesting season), or<br>b. If tree removal, brushing, grading, or construction must occur between the months of February and August, a qualified biologist will conduct pre-construction surveys for active nests within 30 days of the onset of these activities or after a break of more than 30 days. Surveys for burrowing owls will be in conformance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).<br>c. Should active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged. | Public Works Department | Prior to and during construction activities | |
| | **Hydrology and Water Quality** | | | |
| HYD-1 | a. The City shall construct the Storm Drainage and Flood Control Master Plan facilities shown on Exhibit Nos. 1, 2, and 3 in a letter regarding the project from Gary Chapman, Engineering Technician III, FMFCD, to Michael W. Holly, City of Fresno, Capital Management Division (August 26, 2013). The City shall execute a Development Agreement with the FMFCD for any construction reimbursement costs.<br>b. Construction of the Master Plan facilities identified on Exhibit Nos. 1 and 2 as "Master Plan Facilities to be Constructed by Developer", will provide permanent drainage service to the portion of the project located in Drainage Area "BE". The portion of the project located in Drainage Area "BD" will not have permanent service. FMFCD recommends temporary facilities until permanent service is available in Drainage Area "BD". Drainage Areas "BF" and "PP" should not be affected provided the project maintains the conformity to the Master Plan. | Public Works Department and FMFCD | Prior to and during construction activities | |

| | | | | |
|---|---|---|---|---|
| | c. The City of Fresno and the FMFCD's Operations Department shall coordinate the project and identify the FMFCD manhole locations for protection and adjustment to the new surface elevations.<br>d. Should the City desire the FMFCD to fund the Master Plan facilities, the City shall give a minimum of twelve (12) months prior notice of construction of the project. If funding is unavailable, the City shall construct the Master Plan facilities and FMFCD will provide reimbursement from future drainage fees paid within the corresponding drainage area.<br>e. FMFCD shall review and approve the project's final improvement plans for all proposed development (i.e. grading, street improvement, and storm drain) for conformance to the Master Plan prior to project implementation.<br>f. The project area contains a portion of a canal or pipeline used to manage recharge, storm water, and/or flood flows. The City shall preserve the existing capacity as part of project development. Additionally, project development shall not interfere with the ability to operate and maintain the canal or pipeline. | | | |
| Noise | | | | |
| NOI-1 | The following measures shall be implemented to reduce construction-generated noise levels:<br>a. Construction activities (excluding activities that would result in a safety concern to the public or construction workers, would result in an extreme hardship, or instances where the City finds that the greater public interest would be served) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m., in accordance with City of Fresno Municipal Code requirements. Construction activities shall be prohibited on Sundays and legal holidays.<br>b. Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.<br>c. Edith B. Storey Elementary School shall be notified a minimum of one week prior to commencing construction activities within 500 feet of the school. Notification shall be provided so that any necessary precautions (such as rescheduling or relocation of interior noise-sensitive activities) can be implemented. The written notice shall include the name and telephone number of the individual empowered to manage construction noise from the project. In the event that noise complaints are received, the individual empowered to manage construction noise shall respond to the complaint within 12 hours. To the extent feasible, the response shall include identification of measures being taken to reduce construction-related noise. Such measures may include, but are not limited to, rescheduling of construction activities, relocation of equipment, and/or use of equipment noise shields or temporary noise barriers. | Public Works Department | Prior to and during construction activities | |

# APPENDIX A

## *Air Quality & Greenhouse Gas Impact Analysis for Peach Avenue Widening Between E. Jensen and E. Butler Avenues Fresno, CA*

**Prepared by:**

**Ambient Air Quality & Noise Consulting**

**January 2019**

# AIR QUALITY & GREENHOUSE GAS IMPACT ANALYSIS

FOR

## S. PEACH AVENUE WIDENING BETWEEN E. JENSEN AND E. BUTLER AVENUES
FRESNO, CA

JANUARY 2019

**PREPARED FOR:**

ODELL PLANNING & RESEARCH, INC.
49346 Road 426, Suite 2
Oakhurst, CA 93644

**PREPARED BY:**

AMBIENT
AIR QUALITY & NOISE CONSULTING
612 12TH STREET, SUITE 201
PASO ROBLES, CA 93446

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## APPENDICES

Appendix A: RTP/FTIP Project Listing
Appendix B: Emissions Modeling

## LIST OF COMMON TERMS & ACRONYMS

| | |
|---|---|
| AAM | Annual Arithmetic Mean |
| AQAP | Air Quality Attainment Plan |
| CAAQS | California Ambient Air Quality Standards |
| ARB | California Air Resources Board |
| CCAA | California Clean Air Act |
| CCAR | California Climate Action Registry |
| CEQA | California Environmental Quality Act |
| $CH_4$ | Methane |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| $CO_2e$ | Carbon Dioxide Equivalent |
| DPM | Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM |
| FCAA | Federal Clean Air Act |
| GHG | Greenhouse Gases |
| HAP | Hazardous Air Pollutant |
| IPCC | Intergovernmental Panel on Climate Change |
| LOS | Level of Service |
| $N_2O$ | Nitrous Oxide |
| NAAQS | National Ambient Air Quality Standards or National AAQS |
| NESHAPs | National Emission Standards for HAPs |
| $NO_x$ | Oxides of Nitrogen |
| $O_3$ | Ozone |
| PM | Particulate Matter |
| $PM_{10}$ | Particulate Matter (less than 10 µm) |
| $PM_{2.5}$ | Particulate Matter (less than 2.5 µm) |
| ppb | Parts per Billion |
| ppm | Parts per Million |
| ROG | Reactive Organic Gases |
| SIP | State Implementation Plan |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| $SO_2$ | Sulfur Dioxide |
| SJVAB | San Joaquin Valley Air Basin |
| TAC | Toxic Air Contaminant |
| $\mu g/m^3$ | Micrograms per cubic meter |
| U.S. EPA | United State Environmental Protection Agency |

# PROPOSED PROJECT SUMMARY

The proposed project includes the widening of S. Peach Avenue, between E. Butler Avenue and E. Jensen Avenue, and installation of various related improvements. At buildout, the project will widen Peach Avenue from two lanes to a divided four-lane arterial, and would provide improved safety for motorists and pedestrians.

# AIR QUALITY

This section describes the existing air quality environment in the project area and identifies potential air quality impacts associated with the proposed project. Project impacts are evaluated relative to applicable ambient air quality standards and thresholds of significance. Mitigation measures have been identified for significant air quality impacts. Project-generated greenhouse gas emissions are discussed later in this report.

## EXISTING SETTING

The project is located within the City of Fresno, within the San Joaquin Valley Air Basin (SJVAB). The SJVAB is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Air quality in the SJVAB is influenced by a variety of factors, including topography, local and regional meteorology. Factors affecting regional and local air quality are discussed below.

### TOPOGRAPHY, METEOROLOGY, AND POLLUTANT DISPERSION

The dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability conditions and the presence of inversions. The factors affecting the dispersion of air pollution with respect to the SJVAB are discussed below.

#### *Topography*

The SJVAB occupies the southern half of the Central Valley. The SJVAB is open to the north, and is surrounded by mountain ranges on all other sides. The Coast Ranges, which have an average elevation of approximately 3,000 feet, are along on the western boundary of the SJVAB, while the Sierra Nevada Mountains (approximately 8,000 to 14,000 feet in elevation) are along the eastern border. The San Emigdio Mountains, which are part of the Coast Ranges, and the Tehachapi Mountains, which are part of the Sierra Nevada, form the southern boundary, and have an elevation of approximately 6,000 to 8,000 feet. The SJVAB is mostly flat with a downward gradient in terrain to the northwest (SJVAPCD 2015).

#### *Meteorology and Climate*

The SJVAB has an inland Mediterranean climate that is strongly influenced by the presence of mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes producing a partial rain shadow over the valley. In addition, the mountain ranges block the free circulation of air to the east, trapping stable air in the valley for extended periods during the cooler half of the year.

Winter in the SJVAB is characterized as mild and fairly humid, while the summer is typically hot, dry, and cloudless. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer months, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface as a result of the northwesterly flow produces a band of cold water off the California coast. In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms.

The annual temperature, humidity, precipitation, and wind patterns reflect the topography of the SJVAB and the strength and location of the semi-permanent, subtropical high-pressure cell. Summer temperatures that often exceed 100 degrees Fahrenheit (°F) and clear sky conditions are favorable to ozone formation. Most of the precipitation in the valley occurs as rainfall during winter storms. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions, which can result in higher pollutant concentrations. The orientation of the wind flow pattern in the SJVAB is parallel to the valley and mountain ranges. Summer wind conditions promote the transport of ozone and precursors from the San Francisco Bay Area through the Carquinez Strait, a gap in the Coast Ranges, and low mountain passes such as Altamont Pass and Pacheco Pass. During the summer, predominant wind direction is from the northwest. During the winter, the predominant wind direction is from the southeast. Calm conditions are also predominant during the winter (SJVAPCD 2015).

The climate is semi-arid, with an annual normal precipitation of approximately 11 inches. Temperatures in the project area range from an average minimum of approximately 38°F, in January, to an average maximum of 98°F, in July (WRCC 2018).

#### *Atmospheric Stability and Inversions*

Stability describes the resistance of the atmosphere to vertical motion. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. Stability categories range from “Extremely Unstable” (Class A), through Neutral (Class D), to “Stable” (Class F). Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers sufficiently. Under Class A stability conditions, large fluctuations in horizontal wind direction occur coupled with large vertical mixing depths. Under Class B stability conditions, wind direction fluctuations and the vertical mixing depth are less pronounced because of a decrease in the amount of solar heating. Under Class C stability conditions, solar heating is weak along with horizontal and vertical fluctuations because of a combination of thermal and mechanical turbulence. Under Class D stability conditions, vertical motions are primarily generated by mechanical turbulence. Under Class E and Class F stability conditions, air pollution emitted into the atmosphere travels downwind with poor dispersion. The dispersive power of the atmosphere decreases with progression through the categories from A to F.

With respect to the SJVAB, Classes D through F are predominant during the late fall and winter because of cool temperatures and entrapment of cold air near the surface. March and August are transition months with equally occurring percentages of Class F and Class A. During the spring months of April and May and the summer months of June and July, Class A is predominant. The fall months of September, October, and November have comparable percentages of Class A and Class F.

An inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available for diluting air pollution near the ground, thus significantly affecting air quality conditions. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions are present in the morning but are often broken by daytime heating of the air layers near the ground. The deep elevated inversions occur less frequently than the surface-based inversions but generally result in more severe stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during December and January (SJVAPCD 2015).

### CRITERIA AIR POLLUTANTS

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that

can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

***Human Health & Welfare Effects***

Common air pollutants and associated adverse health and welfare effects are summarized in Table 1. Within the SJVAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM) and carbon monoxide (CO). As depicted in Table 1, exposure to increased pollutant concentrations of ozone, PM and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

**Table 1. Common Pollutants & Adverse Effects**

| Pollutant | Human Health & Welfare Effects |
|---|---|
| Particulate Matter ($PM_{10}$ & $PM_{2.5}$) | Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze). |
| Ozone ($O_3$) | Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes. |
| Sulfur Dioxide ($SO_2$) | Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain. |
| Carbon Monoxide (CO) | Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death. |
| Nitrogen Dioxide ($NO_2$) | Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere. |
| Lead | Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems. |

*Source: CAPCOA 2010*

## ODORS

Typically odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SJVAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be applicable to SJVAPCD's *Rule 4102, Nuisance*. Any actions related to odors would be based on citizen complaints to local governments and the SJVAPCD. The SJVAPCD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine if the Project results in excessive nuisance odors, as defined under the California Code of Regulations, Health & Safety Code Section 41700, air quality public nuisance.

### TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. Instead, the U.S. EPA and the California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the ARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, Diesel-exhaust particulate matter (DPM) was added to the ARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The ARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2005).

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the SJVAPCD are evaluated for TAC emissions. The SJVAPCD limits emissions and public exposure to TACs through a number of programs. The SJVAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SJVAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588. No major existing sources of TACs have been identified in the project area.

### ASBESTOS

The term "asbestos" describes naturally occurring fibrous minerals found in certain types of rock formations. It is a mineral compound of silicon, oxygen, hydrogen, and various metal cations. When mined and processed, asbestos

is typically separated into very thin fibers. When these fibers are present in the air, they are normally invisible to the naked eye. Once airborne, asbestos fibers can cause serious health problems. If inhaled, asbestos fibers can impair normal lung functions, and increase the risk of developing lung cancer, mesothelioma, or asbestosis.

Naturally-occurring asbestos, which was identified as a TAC in 1986 by ARB, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located in an area of known or suspected naturally-occurring asbestos.

### AMBIENT AIR QUALITY

Air pollutant concentrations are measured at several monitoring stations in Fresno County. The "Fresno-Drummond Street Monitoring Station" is the closest representative monitoring site to the proposed project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. This monitoring station monitors ambient concentrations of ozone, nitrogen dioxide, and carbon monoxide, nitrogen dioxide, and airborne particulates. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2015 through 2017) and are summarized in Table 2. As depicted, the state and federal ozone standards, and the state $PM_{10}$ standards were exceeded on numerous occasions during the past 3 years. The state standards for $PM_{10}$ have also been exceeded on various occasions during the past 3 years.

**Table 2. Summary of Ambient Air Quality Monitoring Data[1]**

| | 2015 | 2016 | 2017 |
|---|---|---|---|
| **Ozone** | | | |
| Maximum concentration (1-hour/8-hour average) | 0.135/0.110 | 0. 117/0.093 | 0. 125/0.103 |
| Number of days state/national 1-hour standard exceeded | 12/1 | 13/0 | 8/1 |
| Number of days state/national 8-hour standard exceeded | 41/39 | 60/57 | 31/29 |
| **Nitrogen Dioxide ($NO_2$)** | | | |
| Maximum concentration (1-hour average) | 56.0 | 58.6 | 64.7 |
| Annual average | 11 | NA | NA |
| Number of days state standard exceeded | 0 | 0 | 0 |
| **Suspended Particulate Matter ($PM_{10}$)** | | | |
| Maximum concentration (state/national) | 116.7/120.7 | 86.3/88.3 | 120.5/115.6 |
| Number of days state standard exceeded (measured/calculated[2]) | 13/80.3 | 17/98.9 | 17/111.6 |
| Number of days national standard exceeded (measured/calculated[2]) | 0/0 | 0/0 | 0/0 |

*ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available*

*[1] Based on ambient concentrations obtained from the Fresno-Drummond Street Monitoring Station.*

*[2] Measured days are those days that an actual measurement was greater than the standard. Calculated days are the estimated number of days that a measurement would have exceeded the standard had measurements been collected every day.*

*NA = Not Available*

*Source: ARB 2019a*

### SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

Sensitive land uses located in the project area consist predominantly of residential land uses. In addition, Edith B. Storey Elementary School is located at the southeast corner of the Peach Avenue and E. Church Avenue intersection.

## REGULATORY FRAMEWORK

Air quality within the SJVAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

### FEDERAL

#### *U.S. Environmental Protection Agency*

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

#### *Federal Clean Air Act*

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 3.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

### STATE

#### *California Air Resources Board*

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing the CAAQS, which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 3. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

**Table 3. Summary of Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | National Standards (Primary) |
|---|---|---|---|
| Ozone ($O_3$) | 1-hour | 0.09 ppm | – |
| | 8-hour | 0.070 ppm | 0.070 ppm |
| Particulate Matter ($PM_{10}$) | AAM | 20 µg/m³ | – |
| | 24-hour | 50 µg/m³ | 150 µg/m³ |
| Fine Particulate Matter ($PM_{2.5}$) | AAM | 12 µg/m³ | 12 µg/m³ |
| | 24-hour | No Standard | 35 µg/m³ |
| Carbon Monoxide (CO) | 1-hour | 20 ppm | 35 ppm |
| | 8-hour | 9 ppm | 9 ppm |
| | 8-hour (Lake Tahoe) | 6 ppm | – |
| Nitrogen Dioxide ($NO_2$) | AAM | 0.030 ppm | 53 ppb |
| | 1-hour | 0.18 ppm | 100 ppb |
| Sulfur Dioxide ($SO_2$) | AAM | – | 0.03 ppm |
| | 24-hour | 0.04 ppm | 0.14 ppm |
| | 3-hour | – | 0.5 ppm (1300 µg/m³) |
| | 1-hour | 0.25 ppm | 75 ppb |
| Lead | 30-day Average | 1.5 µg/m³ | – |
| | Calendar Quarter | – | 1.5 µg/m³ |
| | Rolling 3-Month Average | – | 0.15 µg/m³ |
| Sulfates | 24-hour | 25 µg/m³ | No Federal Standards |
| Hydrogen Sulfide | 1-hour | 0.03 ppm (42 µg/m³) | |
| Vinyl Chloride | 24-hour | 0.01 ppm (26 µg/m³) | |
| Visibility-Reducing Particle Matter | 8-hour | Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%. | |

*For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
*Source: ARB 2018*

***California Clean Air Act***

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, $SO_2$, and $NO_2$ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

***California Assembly Bill 170***

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

***Assembly Bills 1807 & 2588 - Toxic Air Contaminants***

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The SJVAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- *Regulation VIII (Fugitive Dust Prohibitions). Regulation VIII (Rules 8011-8081).* This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. Regulation VIII requires the preparation of a Dust Control Plan (DCP) for residential projects that would result in the disturbance of 10 acres, or more, non-residential projects that would disturb 5 acres, or more, or for projects that would include the transport of 2,500 cubic yards of bulk materials on at least three days. Construction activities shall not commence until the air district has approved or conditionally approved the DCP.
- *Rule 4102 (Nuisance).* Applies to any source operation that emits or may emit air contaminants or other materials.
- *Rule 4103 (Open Burning).* This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.1 of this rule prohibits the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes.
- *Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).* This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- *Rule 9510 (Indirect Source Review - ISR).* Requires developers of larger residential, commercial, recreational, and industrial projects to reduce smog-forming and particulate emissions from their projects' baselines. This rule also applies to road improvement projects. If project emissions still exceed the minimum baseline reductions, a project's developer will be required to mitigate the difference by paying an off-site fee to the District, which would then be used to fund clean-air projects. For projects subject to this rule, the ISR rule requires emissions to be mitigated and/or offset sufficient to achieve: (1) 20-percent reduction of construction equipment exhaust NOx; (2) 45-percent reduction of construction equipment exhaust $PM_{10}$; (3) 33-percent reduction of operational NOx over 10 years; and (4) 50-percent reduction of operational $PM_{10}$

over 10 years. SJVAPCD ISR applications must be filed "no later than applying for a final discretionary approval with a public agency."

## CITY OF FRESNO

### *Fresno General Plan*

The Resource Conservation Element of the *Fresno General Plan* includes the objective to cooperate with other jurisdictions and agencies in the San Joaquin Valley Air Basin and to take necessary actions to achieve and maintain compliance with state and federal air quality standards for criteria air pollutants. The *Fresno General Plan* includes numerous policies related to air quality that are intended to reduce emissions of criteria air pollutants from area, stationary and mobile sources associated with City operations and future development within the City. These policies also address global climate change through the adoption of a *Greenhouse Gas Reduction Plan* (City of Fresno 2014).

### *Fresno Green*

The City of Fresno adopted the Fresno Green: The City of Fresno's Strategy for Achieving Sustainability on April 23, 2007 and it was updated in May 2008. Fresno Green seeks to combine cutting-edge technology with the best common sense practices of the past to develop and implement green and sustainable programs. Fresno Green includes 23 strategies to reduce consumption of non-renewable resources, improve air quality, position Fresno as a leader in solar energy and other green enterprises, reduce waste generation, and honor the City's agricultural heritage as the City develops into the future. Measures incorporated to reduce construction-related emissions include the collection and recycling of construction waste materials, and the use of best management practices to reduce erosion from construction sites. Various other measures are also incorporated to reduce long-term impacts, including the installation of drought resistant/water efficient landscaping, the planting/retention of trees to reduce reflective heat from hardscapes.

## REGULATORY ATTAINMENT DESIGNATIONS

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and $NO_2$ as "does not meet the primary standards," "cannot be classified," or "better than national standards." For $SO_2$, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for $PM_{10}$ based on the likelihood that they would violate national $PM_{10}$ standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the SJVAB are summarized in Table 4. The SJVAB is currently designated as a nonattainment area with respect to the state $PM_{10}$ standard, ozone, and $PM_{2.5}$ standards. The SJVAB is designated nonattainment for the national 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the U.S. EPA redesignated the San Joaquin Valley to attainment for the $PM_{10}$ NAAQS and approved the $PM_{10}$ Maintenance Plan (SJVAPCD 2018).

**Table 4. SJVAB Attainment Status Designations**

| Pollutant | National Designation | State Designation |
|---|---|---|
| Ozone, 1 hour | No Standard | Nonattainment/Severe |
| Ozone, 8 hour | Nonattainment/Extreme | Nonattainment |
| $PM_{10}$ | Attainment | Nonattainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Carbon Monoxide | Attainment | Unclassified/Attainment |
| Nitrogen dioxide | Unclassified/Attainment | Attainment |
| Sulfur dioxide | Unclassified/Attainment | Attainment |
| Lead (particulate) | No Designation/Classification | Attainment |
| Hydrogen sulfide | No Federal Standard | Unclassified |
| Sulfates | No Federal Standard | Attainment |
| Visibility-reducing particulates | No Federal Standard | Unclassified |
| Vinyl Chloride | No Federal Standard | Attainment |
| *Source: SJVAPCD 2018* | | |

## IMPACTS & MITIGATION MEASURES

### METHODOLOGY

#### *Short-term Impacts*

Short-term construction emissions associated with the proposed project were calculated using the *California Emissions Estimator Model* (CalEEMod), version 2016.3.2. Construction activity schedules, off-road equipment assumptions, and construction-related vehicle trips were derived from the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) *Road Construction Emissions Model*, version 9.0.0. Emissions modeling was conducted assuming a total project length of 1.2 miles, a total project area of 5.3 acres, a maximum area of daily distance of 3.0 acres, and a total of approximately 35,000 cubic yards of material to be imported/exported based on project information provided. All remaining assumptions were based on the default assumptions contained in the model. Modeling assumptions and output files are included in **Appendix B** of this report.

#### *Long-term Impacts*

Implementation of the proposed project would not result in a change in traffic volumes or vehicle travel speeds within the project area. As a result, the proposed project is not anticipated to result in a significant change in long-term regional mobile-source emissions. Long-term regional air quality impacts were, therefore, qualitatively assessed.

Localized air quality impacts associated with the proposed project would be primarily associated with mobile-source emissions of CO. Localized concentrations of CO were qualitatively assessed utilizing SJVAPCD screening criteria. According, the proposed project's contribution to localized CO concentrations would be considered less-than-significant impact if: (1) the proposed project would not result in a deterioration of one or more streets or intersections to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to one or

more streets or intersections that would substantially worsen an already existing LOS F (SJVAPCD 2015). Localized concentrations of TACs and odors were also qualitatively assessed.

### THRESHOLDS OF SIGNIFICANCE

Criteria for determining the significance of air quality impacts were developed based on information contained in the California Environmental Quality Act Guidelines (CEQA Guidelines, Appendix G). According to those guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

1. Conflict with or obstruct implementation of any applicable air quality plan.
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors to substantial pollutant concentrations.
5. Create objectionable odors affecting a substantial number of people.

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD has published the *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015). This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the SJVAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed project would result in a significant air quality impact. The thresholds of significance are summarized below.

- Short-term Emissions—Construction impacts associated with the proposed project would be considered significant if project-generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or $NO_X$, 27 TPY of $SO_X$, or 15 TPY of $PM_{10}$ or $PM_{2.5}$.
- Long-term Emissions—Operational impacts associated with the proposed project would be considered significant if project generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or $NO_X$, 27 TPY of $SO_X$, or 15 TPY of $PM_{10}$ or $PM_{2.5}$.

Conflict with or Obstruct Implementation of Applicable Air Quality Plan—Due to the region's non-attainment status for ozone, $PM_{2.5}$, and $PM_{10}$, if project-generated emissions of ozone precursor pollutants (i.e., ROG and $NO_X$) or PM would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans.

- Local Mobile-Source CO Concentrations—Local mobile source impacts associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).
- Exposure to toxic air contaminants (TAC) would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 20 in 1 million or would result in a Hazard Index greater than 1.
- Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.

In addition to the above thresholds, the SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of project impacts on localized ambient air quality. Accordingly, the proposed project would also be considered to result in a significant contribution to localized ambient air quality if onsite emissions or ROG, $NO_X$, $PM_{10}$, $PM_{2.5}$, CO, or $SO_2$ associated with either short-term construction or long-term operational activities would exceed a daily average of 100 pounds per day (lbs/day) for each of the pollutants evaluated (SJVAPCD 2015).

PROJECT IMPACTS

***IMPACT AQ-1. Would the project conflict with or obstruct implementation of the applicable air quality plan?***

As noted in Impact AQ-2, implementation of the proposed project would not result in long-term increases of mobile-source emissions, nor would short-term construction-generated emissions exceed applicable thresholds of significance. Furthermore, it is important to note that the proposed project is identified as Project ID #FRE111316 and was included in the regional emissions analysis conducted by the Fresno Council of Governments (FCOG) for the conforming *2018 Regional Transportation Plan (RTP)* and the *2019 Federal Transportation Improvement Program (FTIP)* (refer to Appendix A). The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP/FTIP. The conformity determination found that the RTP/FTIP and, therefore, the individual projects contained in the RTP/FTIP, are conforming projects, and would not interfere with air quality planning efforts, including implementation of the State Implementation Plan. For these reasons, implementation of the proposed project would not conflict with nor obstruct implementation of applicable air quality plans. This impact would be considered less than significant.

***IMPACT AQ-2. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?***

***Short-term Construction Emissions***

Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with site grading, excavation, paving, motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment on unpaved surfaces.

Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., ROG and $NO_X$) and emissions of PM. Emissions of ozone-precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne PM are largely dependent on the amount of ground disturbance associated with site preparation activities and can result in increased concentrations of PM that can adversely affect nearby sensitive land uses. Construction-generated emissions are discussed in more detail, as follows:

Annual Construction Emissions

As noted in Table 5, the proposed project would generate maximum annual emissions of approximately 0.34 tons/year of ROG, 3.74 tons/year of $NO_X$, 2.40 tons/year of CO, 0.20 tons/year of $PM_{10}$, and 0.16 tons/year of $PM_{2.5}$. Emissions of $SO_2$ would be negligible. Estimated construction-generated emissions would not exceed the SJVAPCD's significance thresholds. It is also important to note that the proposed project would be required to comply with SJVAPCD rules and regulations, including Regulation VIII and Rule 9510.[1] Furthermore, because the proposed project would result in the potential disturbance of more than 5 acres and given the amount of material to be transported, the proposed project would be required to prepare a dust control plan, per Regulation VIII, Rule 8021. Compliance with applicable rules and regulations would result in additional reductions in emissions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. As a result, regional air quality impacts would be considered less than significant.

[1] *SJVAPCD Regulation VIII, Fugitive Dust Prohibitions and Rule 9510, Indirect Source Review are available at Website url: http://www.valleyair.org/rules/1ruleslist.htm.*

## Table 5. Annual Construction-Generated Emissions

| Construction Activity | Emissions (Tons/Year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Grubbing/Land Clearing | 0.01 | 0.17 | 0.08 | 0.01 | 0.01 |
| Grading/Excavation | 0.20 | 2.40 | 1.48 | 0.13 | 0.10 |
| Drainage/Utilities/Sub-Grade | 0.10 | 1.00 | 0.66 | 0.06 | 0.05 |
| Paving | 0.03 | 0.18 | 0.18 | 0.01 | 0.01 |
| *Total:* | *0.34* | *3.74* | *2.40* | *0.20* | *0.16* |
| *SJVAPCD Significance Thresholds:* | *10* | *10* | *100* | *15* | *15* |
| *Annual Emissions Exceed SJVAPCD Thresholds/Significant Impact?:* | *No* | *No* | *No* | *No* | *No* |

*Emissions were quantified using the CalEEMod, version 2016.3.2. Represents uncontrolled emissions. Compliance with SJVAPCD Regulation VIII and Rule 9510 would result in additional reductions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. Refer to Appendix B for modeling results and assumptions.*

Daily Construction Emissions

On-site construction emissions are summarized in Table 6. As indicated, the widening of S. Peach Avenue would generate average-daily emissions of up to approximately 7.05 lbs/day of ROG, 81.69 lbs/day of $NO_x$, 52.2 lbs/day of CO, 3.80 lbs/day of $PM_{10}$, and 3.30 lbs/day of $PM_{2.5}$. Emissions of $SO_2$ would be negligible (i.e., less than 0.1 lbs/day). Construction-generated emissions would not exceed the SJVAPCD's significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated. As noted above, the proposed project would be required to comply with SJVAPCD rules and regulations, including Rule 9510 and Regulation VIII. Compliance with applicable rules and regulations would result in additional reductions in estimated daily on-site emissions. For these reasons, localized air quality impacts associated with project construction would be considered less than significant.

## Table 6. Daily On-Site Construction-Generated Emissions

| Construction Activity | Number of Days | Average-Daily Emissions (lbs/day)[1] | | | | |
|---|---|---|---|---|---|---|
| | | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Grubbing/Land Clearing | 13 | 1.41 | 15.63 | 10.85 | 0.75 | 0.62 |
| Grading/Excavation | 59 | 7.05 | 81.69 | 52.20 | 3.80 | 3.30 |
| Drainage/Utilities/Sub-Grade | 40 | 5.00 | 49.43 | 34.66 | 2.64 | 2.49 |
| Paving | 20 | 2.80 | 19.94 | 18.94 | 1.19 | 1.10 |
| Highest Average-Daily Emissions: | | 7.05 | 81.69 | 52.20 | 3.80 | 3.30 |
| *SJVAPCD Significance Thresholds:* | | *100* | *100* | *100* | *100* | *100* |
| *Daily Emissions Exceed SJVAPCD Thresholds/Significant Impact?:* | | *No* | *No* | *No* | *No* | *No* |

*Emissions were quantified using the CalEEMod, version 2016.3.2. Represents uncontrolled emissions. Compliance with SJVAPCD Regulation VIII and Rule 9510 would result in additional reductions, including an estimated 20% reduction in $NO_X$ emissions and an approximate 50% reduction in fugitive $PM_{10}$ emissions. Refer to Appendix B for modeling results and assumptions.*

*1. Average daily onsite emissions are based on total onsite emissions divided by the total number of construction days.*

***Long-term Increases of Operational Emissions***

The purpose of the proposed widening project is to provide improved traffic capacity and increased safety for motorists and pedestrians along the S. Peach Avenue corridor. Based on the traffic analysis prepared for the proposed project, implementation of the proposed project would not result in an increase in vehicle traffic volumes along Peach Avenue, nor would the project result in changes in vehicle traffic speeds along Peach Avenue (VRPA 2018). As a result, implementation of the proposed project would not be anticipated to result in long-term increases of mobile-source emissions.

In addition, it is important to note that the proposed project was included in the regional emissions analysis conducted by FCOG for the conforming *2018 RTP* and the *2019 FTIP* (refer to Appendix A). The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP and FTIP. The conformity determination found that the RTP/FTIP and, therefore, the individual projects contained in the RTP/FTIP, are conforming projects, and would not interfere with air quality planning efforts, including implementation of the State Implementation Plan. For these reasons, implementation of the proposed project would not be projected to result in or contribute substantially to an existing or projected air quality violation for which the project area or the SJVAB is designated non-attainment. This impact would be considered less than significant.

***IMPACT AQ-3. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?***

The SJVAB is currently designated non-attainment for the state and federal ozone and $PM_{2.5}$ ambient air quality standards and the state $PM_{10}$ standard. As discussed in *Impact AQ-B*, short-term construction-generated emissions of ozone-precursor pollutants (e.g., ROG and $NO_X$) and PM would not exceed SJVAPCD's significance thresholds. In addition, implementation of the proposed project would not be anticipated to result in long-term increases of mobile-source emissions. This impact is considered less than significant.

***IMPACT AQ-4. Would the project expose sensitive receptors to substantial pollutant concentrations?***

Potential increases in localized pollutant concentrations attributable to the proposed project would be primarily associated with emissions of TACs and PM during construction. Potential long-term localized impacts would be primarily associated with potential increases in localized mobile-source CO concentrations. The proposed projects contribution to short-term and long-term localized air quality impacts are discussed, as follows:

***Toxic Air Contaminants***

Implementation of the proposed project would not result in the long-term operation of any major onsite stationary sources of TACs, nor would project implementation result in an increase in vehicle trips along area roadways. For these reasons, implementation of the proposed project would not be anticipated to result in long-term increases in exposure of sensitive receptors to TACs. However, short-term construction activities may result in temporary increases of TACs. Short-term increases of TACs potentially associated with construction of the proposed improvements are discussed, as follows:

Naturally-Occurring Asbestos

Naturally-occurring asbestos, which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near any areas that are likely to contain ultramafic rock (DOC 2000). As a result, risk of exposure to asbestos during the construction process would be considered less than significant.

Diesel-Exhaust Emissions

Construction of the proposed project would result in the generation of DPM emissions associated with the use of off-road diesel equipment for site grading and excavation, paving and other construction activities. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The calculation of cancer risk associated with exposure of to TACs are typically calculated based on a 25- to 30-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Assuming that construction activities involving the use of diesel-fueled equipment would occur over an approximate six-month period, project-related construction activities would constitute less than two percent of the typical exposure period. In addition, construction of the proposed facilities would not be anticipated to require extensive site grading or other more intensive site preparation activities that would involve extensive use of diesel-fueled off-road equipment or on-road vehicles. Furthermore, as noted in Impact AQ-2 (refer to Table 6), construction-generated emissions of PM would not exceed the SJVAPCD's localized significance thresholds. As a result, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 20 in one million). As a result, this impact would be considered less than significant.

***Localized PM Concentrations***

Construction of the proposed project may contribute to localized PM concentrations, including emissions from onsite construction equipment and fugitive dust. Fugitive dust emissions would be primarily associated with earth-moving, and material handling activities, as well as, vehicle travel on unpaved and paved surfaces. As noted in Impact AQ-2 (refer to Table 6), construction-generated emissions of PM would not exceed the SJVAPCD's localized significance thresholds. It is also important to note that the proposed project would be required to comply with SJVAPCD's Regulation VIII and Rule 9510. As discussed in Impact AQ-2, compliance with these regulatory requirements would result in additional reductions of construction-related emissions. For these reasons, this impact would be considered less than significant.

***Carbon Monoxide***

Carbon monoxide is the primary criteria air pollutant of local concern associated with the proposed project. Under specific meteorological and operational conditions, such as near areas of heavily congested vehicle traffic, CO concentrations may reach unhealthy levels. If inhaled, CO can be adsorbed easily by the blood stream and can inhibit oxygen delivery to the body, which can cause significant health effects ranging from slight headaches to death. The most serious effects are felt by individuals susceptible to oxygen deficiencies, including people with anemia and those suffering from chronic lung or heart disease.

Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically recommended for sensitive land uses located near congested roadways that are projected to operate at an unacceptable LOS E or F. In accordance with SJVAPCD screening criteria, localized CO concentrations associated with the proposed project would be considered less-than-significant impact if: (1) the proposed project would not result in a deterioration of one or more streets or intersections to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to one or more streets or intersections that would substantially worsen an already existing LOS E or F (SJVAPCD 2015).

As previously discussed, the purpose of the proposed project is to provide improved traffic capacity. With project implementation, all roadway intersections and segments located within the project area are projected to operate at LOS D, or better, under near-term and future cumulative conditions (VRPA 2018). As a result, implementation of the proposed project would not contribute to an unacceptable LOS (i.e., LOS E or F) at primarily-affected roadways or intersections. This impact would be considered less than significant.

***IMPACT AQ-5. Would the project create objectionable odors affecting a substantial number of people?***

Implementation of the proposed project would not result in long-term emissions of odors. However, construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition pavement coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. For these reasons, potential short-term exposure of sensitive receptors to odorous emissions would be considered less than significant.

# GREENHOUSE GASES AND CLIMATE CHANGE

This section describes the existing setting related to climate change, including a summary of the regulatory framework and the local greenhouse gas (GHG) emissions inventory. Potential GHG impacts associated with the proposed project are evaluated and mitigation measures have been identified for significant impacts. Emissions modeling assumptions and output files are included in Appendix B.

## EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide**. Carbon dioxide ($CO_2$) is a colorless, odorless gas. $CO_2$ is emitted in a number of ways, both naturally and through human activities. The largest source of $CO_2$ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to $CO_2$ emissions. The atmospheric lifetime of $CO_2$ is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2018a).

- **Methane**. Methane ($CH_4$) is a colorless, odorless gas that is not flammable under most circumstances. $CH_4$ is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2018a).

- **Nitrous Oxide**. Nitrous oxide ($N_2O$) is a clear, colorless gas with a slightly sweet odor. $N_2O$ is produced by both natural and human-related sources. Primary human-related sources of $N_2O$ are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. $N_2O$ is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of $N_2O$ is approximately 114 years (U.S. EPA 2018a).

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 270 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2018a).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane ($CF_4$), perfluoroethane ($C_2F_6$), perfluoropropane ($C_3F_8$), perfluorobutane ($C_4F_{10}$), perfluorocyclobutane ($C_4F_8$), perfluoropentane ($C_5F_{12}$), and perfluorohexane ($C_6F1_4$). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases $CF_4$ and $C_2F_6$ as byproducts. The estimated atmospheric lifetimes for PFCs ranges from 2,600 to 50,000 years (U.S. EPA 2018a).

- **Nitrogen Trifluoride**. Nitrogen trifluoride ($NF_3$) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalents ($CO_2e$). While $NF_3$ may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, $NF_3$ was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride**. Sulfur hexafluoride ($SF_6$) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. $SF_6$ is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all $SF_6$ produced worldwide. Leaks of $SF_6$ occur from aging equipment and during equipment maintenance and servicing. $SF_6$ has an atmospheric life of 3,200 years (U.S. EPA 2018a).

- **Black Carbon**. Black carbon is the strongest light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands) (CCAC 2018, U.S. EPA 2018a).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in $CO_2e$, which weight each gas by its global warming potential (GWP). Expressing GHG emissions in $CO_2e$ takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only $CO_2$ were being emitted. Table 7 provides a summary of the GWP for GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, Methane traps over 25 times more heat per molecule than $CO_2$, and $N_2O$ absorbs roughly 298 times more heat per molecule than $CO_2$. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

**Table 7. Global Warming Potential for Greenhouse Gases**

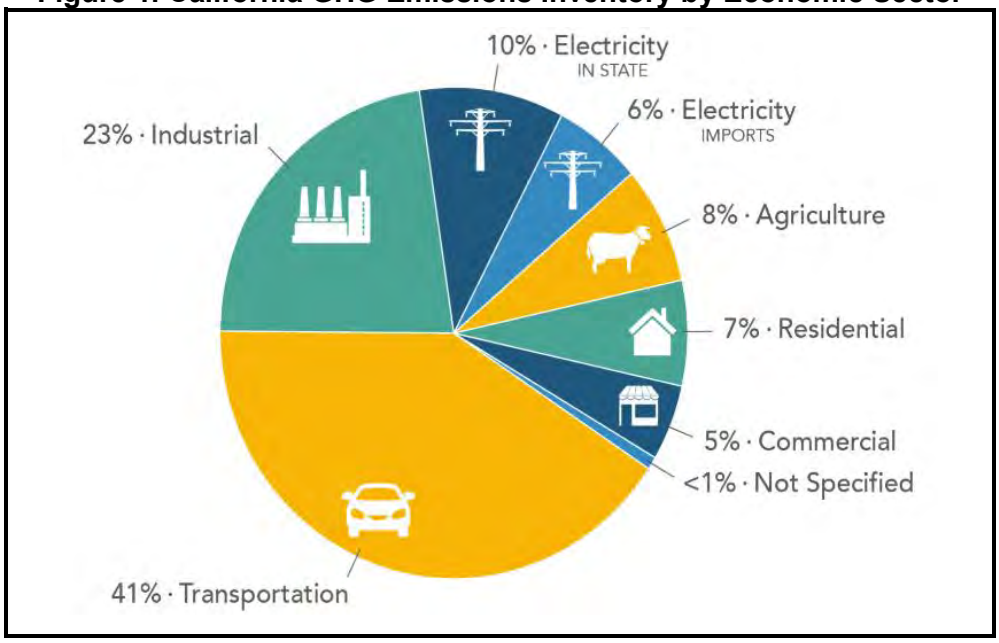
| Greenhouse Gas | Global Warming Potential (100-year) |
|---|---|
| Carbon Dioxide ($CO_2$) | 1 |
| Methane ($CH_4$) | 25 |
| Nitrous Dioxide ($N_2O$) | 298 |
| **Based on IPCC GWP values for 100-year time horizon*<br>*Source: IPCC 2007* | |

## SOURCES OF GHG EMISSIONS

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions (U.S. EPA 2018b).

In 2016, GHG emissions within California totaled 429.4 million metric tons (MMT) of $CO_2e$. GHG emissions, by economic sector, are summarized in Figure 1. Within California, the transportation sector is the largest contributor, accounting for approximately 41 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 16 percent. The remaining GHG emissions are predominantly associated with agriculture, residential, and commercial uses (ARB 2019b).

**Figure 1. California GHG Emissions Inventory by Economic Sector**



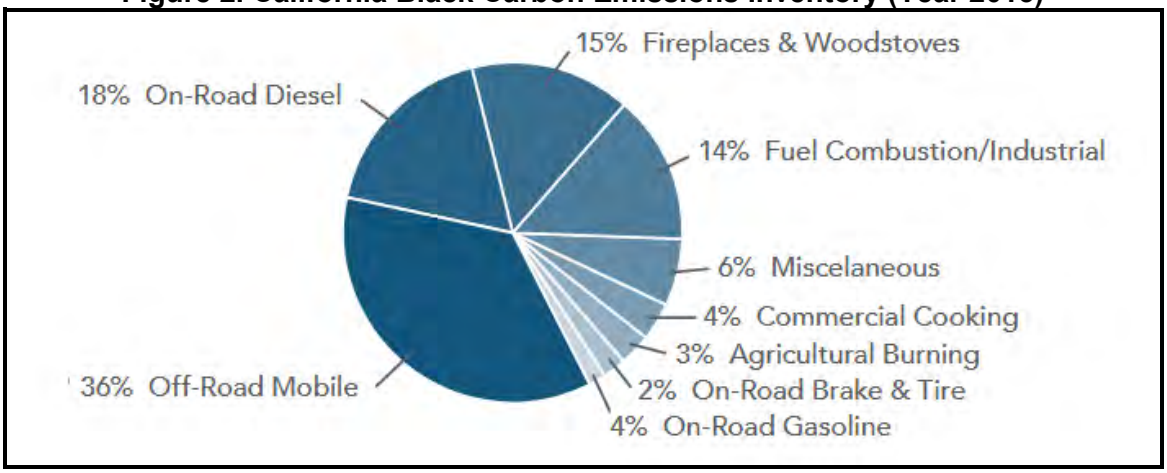

*Source: ARB 2019b*

***Short-Lived Climate Pollutants***

Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and methane also have a dramatic effect on climate change. Though short lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

As part of the ARB's efforts to address SLCPs, the ARB has developed a statewide emission inventory for black carbon. The black carbon inventory will help support implementation of the SLCP Strategy, but it is not part of the State's GHG Inventory that tracks progress towards the State's climate targets. The most recent inventory for year 2013 conditions is depicted in Figure 2. As depicted, off-road mobile sources account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes (ARB 2019c).

**Figure 2. California Black Carbon Emissions Inventory (Year 2013)**




*Source: ARB 2019c*

### EFFECTS OF GLOBAL CLIMATE CHANGE

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snow pack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (PCL 2018).

## REGULATORY FRAMEWORK

### FEDERAL

#### *Executive Order 13514*

Executive Order 13514 is focused on reducing GHGs internally in federal agency missions, programs, and operations. In addition, the executive order directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in Massachusetts v. U.S. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the FCAA and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed GHGs ($CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$) in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of $CO_2$ per mile (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this $CO_2$ level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On August 28, 2012, U.S. EPA and NHTSA issued their joint rule to extend this national program of coordinated GHG and fuel economy standards to model years 2017 through 2025 passenger vehicles.

### STATE

#### *Assembly Bill 1493*

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply; an increase in air pollution caused by higher temperatures; harm to agriculture; an increase in wildfires; damage to the coastline; and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the FCAA, to allow the State to require reduced tailpipe emissions of $CO_2$. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

In 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

***Executive Order No. S-3-05***

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

***Assembly Bill 32 - California Global Warming Solutions Act of 2006***

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, $NF_3$, and $SF_6$. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

***Climate Change Scoping Plan***

In October 2008, ARB published its *Climate Change Proposed Scoping Plan*, which is the State's plan to achieve GHG reductions in California required by AB 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32. The Scoping Plan included ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementation of energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT $CO_2e$ will be achieved associated with implementation of Senate Bill 375, which is discussed further below.

The initial Scoping Plan was first approved by ARB on December 11, 2008 and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals., The most recent update released by ARB is the *2017 Climate Change Scoping Plan*, which was released In November 2017. The *2017 Climate Change Scoping Plan* incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and EO B-30-15.

***Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)***

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. Statute SB X1-2 superseded this Executive Order in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The California Energy Commissions and California Public Utilities Commission serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

***Mandatory Reporting of GHG Emissions***

The California Global Warming Solutions Act (AB 32, 2006) requires the reporting of GHGs by major sources to the ARB. Major sources required to report GHG emissions include industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

***Cap-and-Trade Regulation***

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total GHG emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80 percent reduction from 1990 levels by 2050.

***Senate Bill 32***

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG-reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target.

***Senate Bill 375***

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable community's strategy (SCS) or alternative planning strategy (APS) that will address land use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld.

***California Building Code***

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

*Green Building Standards*

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

AB 32, which mandates the reduction of GHG emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25

percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 MMT of $CO_2e$ by 2020. The green buildings standards were most recently updated in 2016.

***Senate Bill 97***

Senate Bill 97 (SB 97) was enacted in 2007. SB 97 required OPR to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply and ways to reduce energy demand, including through the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

***Short-Lived Climate Pollutant Reduction Strategy***

In March 2017, the ARB adopted the *Short-Lived Climate Pollutant Reduction Strategy* (*SLCP Strategy*) establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities, and manure methane at dairies, and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The *SLCP Strategy* also identifies steps to reduce natural gas leaks from oil and gas wells, pipelines, valves, and pumps to improve safety, avoid energy losses, and reduce methane emissions associated with natural gas use. Lastly, the *SLCP Strategy* also identifies measures that can reduce hydrofluorocarbon (HFC) emissions at national and international levels, in addition to State-level action that includes an incentive program to encourage the use of low-Global Warming Potential (GWP) refrigerants, and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment (ARB 2017).

## SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

***SJVAPCD Climate Change Action Plan***

On August 21, 2008, the SJVAPCD Governing Board approved the SJVAPCD's *Climate Change Action Plan* with the following goals and actions:

Goals:

- Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.

Ensure that climate protection measures do not cause increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

- Authorize the Air Pollution Control Officer to develop GHG significance threshold(s) or other mechanisms to address CEQA projects with GHG emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.
- Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary GHG reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
- Authorize the Air Pollution Control Officer to enhance the SJVAPCD's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB32 emission reporting requirements to submit simultaneous streamlined reports to the SJVAPCD and the state of California with minimal duplication.
- Authorize the Air Pollution Control Officer to develop and administer voluntary GHG emission reduction agreements to mitigate proposed GHG increases from new projects.
- Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted area.

***SJVAPCD CEQA Greenhouse Gas Guidance.***

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy, "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific greenhouse gas emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their greenhouse gas emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific greenhouse gas emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document.

Best performance standards (BPS) would be established according to performance-based determinations. Projects complying with BPS would not require specific quantification of greenhouse gas emissions and would be determined to have a less than significant cumulative impact for greenhouse gas emissions. Projects not complying with BPS would require quantification of greenhouse gas emissions and demonstration that greenhouse gas emissions have been reduced or mitigated by 29 percent, as targeted by ARB's AB 32 Scoping Plan. Furthermore, quantification of greenhouse gas emissions would be required for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates Best Performance Standards.

For stationary source permitting projects, best performance standards are "the most stringent of the identified alternatives for control of greenhouse gas emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." For development projects, best performance standards are "any combination of identified greenhouse gas emission reduction measures, including project design elements and land use decisions that reduce project specific greenhouse gas emission reductions by at least 29 percent compared with business as usual." The SJVAPCD proposes to create a list of all approved Best Performance Standards to help in the determination as to whether a proposed project has reduced its GHG emissions by 29 percent.

### CITY OF FRESNO

#### *Fresno General Plan*

The Resource Conservation Element of the *Fresno General Plan* includes the objective to cooperate with other jurisdictions and agencies in the San Joaquin Valley Air Basin and to take necessary actions to achieve and maintain compliance with state and federal air quality standards for criteria air pollutants. The *Fresno General Plan* includes numerous policies related to air quality that are intended to reduce emissions of criteria air pollutants from area, stationary and mobile sources associated with City operations and future development within the City. These policies also address global climate change through the adoption of a *Greenhouse Gas Reduction Plan* (City of Fresno 2014).

#### *Fresno Green*

The City of Fresno adopted the Fresno Green: The City of Fresno's Strategy for Achieving Sustainability on April 23, 2007 and it was updated in May 2008. Fresno Green seeks to combine cutting-edge technology with the best common sense practices of the past to develop and implement green and sustainable programs. Fresno Green includes 23 strategies to reduce consumption of non-renewable resources, improve air quality, position Fresno as a leader in solar energy and other green enterprises, reduce waste generation, and honor the City's agricultural heritage as the City develops into the future. Measures incorporated to reduce construction-related emissions include the collection and recycling of construction waste materials, and the use of best management practices to reduce erosion from construction sites. Various other measures are also incorporated to reduce long-term impacts, including the installation of drought resistant/water efficient landscaping, the planting/retention of trees to reduce reflective heat from hardscapes.

## IMPACTS & MITIGATION MEASURES

### METHODOLOGY

Implementation of the proposed project is not projected to result in a change in average-daily traffic volumes or average vehicle travel speeds within the project area. As a result, the proposed project is not anticipated to result in long-term increases of GHG emissions. Construction of the proposed project would, however, result in short-term increases of GHG emissions. Short-term construction emissions associated with the proposed project were calculated using CalEEMod, version 2016.3.2. Construction activity schedules, off-road equipment assumptions, and construction-related vehicle trips were derived from the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) *Road Construction Emissions Model*, version 9.0.0. Emissions modeling was conducted assuming a total project length of 1.2 miles, a total project area of 5.3 acres, a maximum area of daily distance of 3.0 acres, and a total of approximately 35,000 cubic yards of material to be imported/exported based on project information provided. All remaining assumptions were based on the default assumptions contained in the model. Modeling assumptions and output files are included in Appendix B of this report.

### THRESHOLDS OF SIGNIFICANCE

CEQA Guidelines Amendments became effective March 18, 2010. Included in the Amendments are revisions to the Appendix G Initial Study Checklist. In accordance with these Amendments, a project would be considered to have a significant impact to climate change if it would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

### PROJECT IMPACTS

***IMPACT GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and***

***Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?***

The SJVAPCD has not adopted a recommended significance threshold for construction-related GHG emissions. However, other air districts in the State have adopted recommended GHG significance thresholds that address short-term construction GHG emissions. For instance, the Sacramento Metropolitan Air Quality Management District has adopted a recommended annual significance threshold for construction activities of 1,100 $MTCO_2e$ (SMAQMD 2015). In addition, the San Luis Obispo County Air Pollution Control District (SLOAPCD) recommends that construction emissions be amortized over the life of the project and included with the project's estimated annual operation emissions for comparison to the recommended annual GHG significance threshold. The SLOAPCD currently recommends an annual GHG significance threshold of 1,150 $MTCO_2e$ (SLOAPCD 2012). On December 5, 2008 the South Coast Air Quality Management District (SCAQMD) adopted *Interim CEQA GHG Significance Thresholds for Stationary Sources, Rules and Plans*. This document also addressed interim GHG significance thresholds for construction activities, including those associated with industrial and residential/commercial uses. Similar to the SLOAPCD's recommended guidance, the SCAQMD also recommends that construction-generated GHG emissions be amortized over the life of the project and included with the estimated annual operational emissions when comparing to the interim significance thresholds. The SCAQMD's interim thresholds range from a screening threshold of 3,000 $MTCO_2e$/year for residential and commercial uses to 10,000 $MTCO_2e$/year for industrial uses (SCAQMD 2008).

Implementation of the proposed project is not projected to result in a change in average-daily traffic volumes or average vehicle travel speeds within the project area. As a result, the proposed project would not result in long-term increases of GHG emissions. Construction of the proposed project would, however, result in short-term increases of GHG emissions. Construction-generated GHG emissions are summarized in Table 8.

Based on the modeling conducted, annual emissions of greenhouse gases associated with construction of the proposed project would total approximately 482.8 $MTCO_2e$. When amortized over an assumed 30-year project life, annual emissions would total approximately 16.1 $MTCO_2e$/year. Construction-generated GHG emissions would not exceed commonly applied significance thresholds, which generally range from 1,100 to 3,000 $MTCO_2e$/year for non-industrial uses, as noted above. A majority of the emission generated during the construction process would be associated primarily with the use of off-road equipment. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Actual emissions will likely vary, depending on the final construction schedules, equipment required, and activities conducted.

**Table 8. Short-term Construction-Generated GHG Emissions**

| Construction Year | Annual Emissions ($MTCO_2e$) |
|---|---|
| Grubbing/Land Clearing | 31.6 |
| Grading/Excavation | 304.5 |
| Drainage/Utilities/Sub-Grade | 122.4 |
| Paving | 24.3 |
| *Total Annual Emissions:* | *482.8* |
| *Amortized Annual Emissions:* | *16.1* |
| *Emissions were quantified using CalEEMod, version 2016.3.2. Amortized emissions based on a project life of 30 years. Refer to Appendix B for modeling results and assumptions.* | |

As previously discussed, implementation of the proposed project is not projected to result in a change in average-daily traffic volumes or average vehicle travel speeds within the project area. As a result, the proposed project would not result in long-term increases of GHG emissions. Given that emissions would be short-term, occurring over an approximate six-month construction period, increases in GHG emissions attributable to the proposed project would not result in a significant impact on the environment. Furthermore, it is important to note that the proposed project is consistent with regional transportation plans and, as such, would not conflict with planning efforts for the reduction of mobile-source GHG emissions. For these reasons, this impact would be considered less than significant.

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# APPENDIX A

# RTP/FTIP PROJECT LISTING

# 2018 RTP/2019 FTIP PROJECT LISTING

**Regionally Significant Project Listing**

| Description | | | | | | | Conformity Analysis Year (project open to traffic) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agency | TIP/RTP Project ID | CTIPs Project ID | Facility Name/Route | Type of Improvement | Project Limits | Estimated Cost | 2018 | 2019 | 2020 | 2021 | 2023 | 2024 | 2027 | 2030 | 2031 | 2035 | 2037 | 2042 |
| Fresno | FRES00491 | | On/Off Ramps | Reconfigure for SB dual rights; and EB dual lefts on Divisadero at NB on ramp | Intersection From SR 41 To Divisadero Dist: N/A | $0 | | | | | | | | X | X | X | X | X |
| Fresno | FRES00427 | | Parkway Drive | 2 LU to 4 LD with bike lanes and sidewalks | From Shaw To Barstow Dist: 5 | $1,550,000 | | | | | | | | X | X | X | X | X |
| Fresno | FRES01773 | | Parkway Drive | 3 LU to 4 LD with bike lanes, sidewalks, curb, gutter | From Hemdon To 99 Dist:0.15 | $465,000 | | | | | | | X | X | X | X | X | X |
| Clovis | FRES00428 | | Peach | 2LU to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics, Utility Relocation, Traffic Signal at Sierra and Peach | From Sierra To Magill Couplet Dist: .25 | $3,000,000 | | | | | | | X | X | X | X | X | X |
| Clovis | FRES00429 | | Peach | 2LU to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics, Signals at Perrin and Behymer | From Shepherd To Behymer Dist:0.5 | $1,000,000 | | | X | X | X | X | X | X | X | X | X | X |
| Clovis | FRES00430 | | Peach | 2LU to 4LD, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics, Bridge at Enterprise Canal, Signals at Copper and International | From Behymer To Copper Dist:1 | $12,000,000 | | | | | | | X | X | X | X | X | X |
| Fresno | FRES00431 | | Peach | 2 LU to 4 LD | From Kings Canyon To Belmont Dist: 1 | $4,100,000 | | | | X | X | X | X | X | X | X | X | X |
| Fresno | FRES00432 | | Peach | 2 LD to 4 LD with bike lanes, gutter, curb and sidewalks | From North To Jensen Dist: 1 | $3,100,000 | | | | | | | | X | X | X | X | X |
| Fresno | FRE111316 | 20300000729 | Peach Ave | Widen Peach, Jensen to Butler to 4 Lanes (Measure C Project I2A, I2B, I2C in the Urban Regional Program) | Jensen to Butler | $9,470,000 | | | | | | | | X | X | X | X | X |
| Clovis | FRES00433 | | Perrin | Unconstructed to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | From Peach To Minnewawa Dist: 5 | $3,000,000 | | | X | X | X | X | X | X | X | X | X | X |
| Clovis | FRES00434 | | Perrin | Unconstructed to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | From Willow To Peach Dist: 5 | $3,000,000 | | | X | X | X | X | X | X | X | X | X | X |
| Clovis | FRES00435 | | Perrin | Unconstructed to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | From Minnewawa To Clovis Dist: 5 | $3,000,000 | | | X | X | X | X | X | X | X | X | X | X |
| Clovis | FRES01726 | | Perrin | Unconstructed to 4LU, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | From Clovis to Sunnyside Dist: 5 | $4,000,000 | | | X | X | X | X | X | X | X | X | X | X |
| Coalinga | FRES01737 | | Phelps Avenue | Demolition of existing roadway, complete roadway reconstruction, curb and gutter, sidewalk, curb ramps, street lights, class I multi-trail, traffic striping and traffic signage | From Polk Charles Blvd to City Limits | $1,200 | | | | X | X | X | X | X | X | X | X | X |
| Clovis | FRES01727 | | PLYMOUTH | Unconstructed to 2LU, w/ 2WLTL, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | FROM WILLOW TO PEACH DIST:0.25 | $1,500,000 | | | | | X | X | X | X | X | X | X | X |
| Clovis | FRES01728 | | PLYMOUTH | Unconstructed to 2LU, w/ 2WLTL, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | FROM PEACH TO MINNEWAWA DIST:0.25 | $1,500,000 | | | | | X | X | X | X | X | X | X | X |
| Fresno | FRES00436 | | Polk | 2 LU to 4 LU with bike lanes, sidewalks, curb, gutter | From Bullard To Herndon Dist: 1 | $2,900,000 | | | | | | | | X | X | X | X | X |
| Fresno | FRES00437 | | Polk | Widen from 2 LD to 4 LD with bike lanes, sidewalks, curb, gutter | From Olive To McKinley Dist: 5 | $1,550,000 | | | | | | | | X | X | X | X | X |
| Fresno | FRES00438 | | Polk | Unconstructed to 4 LD with bike lanes, sidewalks, curb, gutter | From Olive To Belmont Dist: 5 | $1,550,000 | | | | | | | | | | X | X | X |
| Fresno | FRES00439 | | Polk | 2 LU to 4 LD with bike lanes and sidewalks, curb, gutter | From Gettysburg To Shaw Dist: 5 | $1,550,000 | | | | | | | | X | X | X | X | X |
| Fresno | FRES00440 | | Polk | 2 LU to 4 LD with bike lanes, sidewalks, curb, gutter | From McKinley To Shields Dist:1 | $3,100,000 | | | | | | | | | | X | X | X |
| Fresno | FRES00441 | | Polk | 2 LU to 4 LD with bike lanes, sidewalks, curb, gutter | From Shields To Gettysburg Dist:1.5 | $4,650,000 | | | | | | | | | | X | X | X |
| Clovis | FRES01729 | | PRIOR | Unconstructed to 2LU, w/ 2WLTL, Sidewalks, Bike Lanes, Street Lights, Curb and Gutter, Fiber Optics | FROM PEACH TO MINNEWAWA DIST:0.5 | $3,000,000 | | | | | X | X | X | X | X | X | X | X |
| Clovis | FRES01730 | | PRIOR | Unconstructed to 2LU, w/ 2WLTL, Sidewalks, Bike | | | | | | | | | | | | | | |
| Fresno | FRES00642 | | Rivet | | | | | | | | | | | | | | | |
| Fresno | FRES00472 | | Rivet Dugg | | | | | | | | | | | | | | | |
| Fresno | FRES00640 | | Rivet Dugg | | | | | | | | | | | | | | | |

Fresno | FRE111316 | 20300000729 | Peach Ave | Widen Peach, Jensen to Butler to 4 Lanes (Measure C Project I2A, I2B, I2C in the Urban Regional Program)



*Source: Fresno County Council of Governments. 2018. Website url: https://www.fresnocog.org/wp-content/uploads/2017/02/Fresno-COG-2018-RTP-2019-FTIP-Conformity-FINAL.pdf*

# APPENDIX B

# EMISSIONS MODELING

**SUMMARY OF CONSTRUCTION-GENERATED EMISSIONS**

| ACTIVITY | NUMBER OF DAYS | ANNUAL EMISSIONS (UNCONTROLLED, TONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PM10 | | | PM2.5 | | |
| | | ROG | NOX | CO | SO2 | FUG | EXH | TOT | FUG | EXH | TOT |
| SITE PREPARATION | | | | | | | | | | | |
| ON-SITE | | 0.008 | 0.094 | 0.065 | 0.000 | 0.001 | 0.004 | 0.004 | 0.000 | 0.004 | 0.004 |
| OFF-SITE | | 0.003 | 0.076 | 0.013 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 | 0.000 | 0.002 |
| TOTAL | 12 | 0.011 | 0.170 | 0.078 | 0.000 | 0.006 | 0.004 | 0.010 | 0.001 | 0.004 | 0.005 |
| GRADING/EXCAVATION | | | | | | | | | | | |
| ON-SITE | | 0.190 | 2.206 | 1.409 | 0.003 | 0.007 | 0.096 | 0.103 | 0.001 | 0.088 | 0.089 |
| OFF-SITE | | 0.012 | 0.193 | 0.067 | 0.001 | 0.022 | 0.001 | 0.022 | 0.006 | 0.001 | 0.007 |
| TOTAL | 54 | 0.202 | 2.398 | 1.477 | 0.003 | 0.028 | 0.097 | 0.125 | 0.007 | 0.089 | 0.096 |
| DRAINAGE/UTILITIES/SUBGRADE | | | | | | | | | | | |
| ON-SITE | | 0.090 | 0.890 | 0.624 | 0.001 | 0.000 | 0.048 | 0.048 | 0.000 | 0.045 | 0.045 |
| OFF-SITE | | 0.007 | 0.105 | 0.039 | 0.000 | 0.011 | 0.001 | 0.011 | 0.003 | 0.001 | 0.004 |
| TOTAL | 36 | 0.096 | 0.995 | 0.663 | 0.001 | 0.011 | 0.048 | 0.059 | 0.003 | 0.046 | 0.048 |
| PAVING | | | | | | | | | | | |
| ON-SITE | | 0.025 | 0.180 | 0.171 | 0.000 | 0.000 | 0.011 | 0.011 | 0.000 | 0.010 | 0.010 |
| OFF-SITE | | 0.001 | 0.001 | 0.008 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 | 0.000 | 0.001 |
| TOTAL | 18 | 0.026 | 0.180 | 0.179 | 0.000 | 0.002 | 0.011 | 0.013 | 0.001 | 0.010 | 0.010 |
| TOTAL ALL ACTIVITIES | | 0.336 | 3.743 | 2.396 | 0.005 | 0.046 | 0.160 | 0.206 | 0.012 | 0.148 | 0.160 |

| ACTIVITY | NUMBER OF DAYS | ANNUAL EMISSIONS (CONTROLLED*, TONS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PM10 | | | PM2.5 | | |
| | | ROG | NOX | CO | SO2 | FUG | EXH | TOT | FUG | EXH | TOT |
| SITE PREPARATION | | | | | | | | | | | |
| ON-SITE | | 0.003 | 0.056 | 0.078 | 0.000 | 0.000 | 0.002 | 0.003 | 0.000 | 0.002 | 0.002 |
| OFF-SITE | | 0.003 | 0.076 | 0.013 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 | 0.000 | 0.002 |
| TOTAL | 12 | 0.006 | 0.132 | 0.091 | 0.000 | 0.005 | 0.003 | 0.008 | 0.001 | 0.003 | 0.004 |
| GRADING/EXCAVATION | | | | | | | | | | | |
| ON-SITE | | 0.066 | 1.317 | 1.646 | 0.003 | 0.003 | 0.062 | 0.064 | 0.000 | 0.062 | 0.062 |
| OFF-SITE | | 0.012 | 0.193 | 0.067 | 0.001 | 0.022 | 0.001 | 0.022 | 0.006 | 0.001 | 0.007 |
| TOTAL | 54 | 0.078 | 1.510 | 1.714 | 0.003 | 0.024 | 0.062 | 0.087 | 0.006 | 0.062 | 0.068 |
| DRAINAGE/UTILITIES/SUBGRADE | | | | | | | | | | | |
| ON-SITE | | 0.024 | 0.515 | 0.648 | 0.001 | 0.000 | 0.029 | 0.029 | 0.000 | 0.029 | 0.029 |
| OFF-SITE | | 0.007 | 0.105 | 0.039 | 0.000 | 0.011 | 0.001 | 0.011 | 0.003 | 0.001 | 0.004 |
| TOTAL | 36 | 0.031 | 0.620 | 0.687 | 0.001 | 0.011 | 0.030 | 0.041 | 0.003 | 0.030 | 0.033 |
| PAVING | | | | | | | | | | | |
| ON-SITE | | 0.013 | 0.123 | 0.177 | 0.000 | 0.000 | 0.008 | 0.008 | 0.000 | 0.008 | 0.008 |
| OFF-SITE | | 0.001 | 0.001 | 0.008 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 | 0.000 | 0.001 |
| TOTAL | 18 | 0.014 | 0.124 | 0.185 | 0.000 | 0.002 | 0.008 | 0.010 | 0.001 | 0.008 | 0.008 |
| TOTAL ALL ACTIVITIES | | 0.128 | 2.386 | 2.677 | 0.005 | 0.042 | 0.103 | 0.145 | 0.011 | 0.103 | 0.114 |

**INCLUDES USE OF TIER 3 OFF-ROAD EQUIPMENT AND FUGITIVE DUST CONTROL*

| | | |
|---|---|---|
| NOX EXCEEDS 2.0 TONS? | YES | (Refer to SJVAPCD Rule 9510, Section 2.4) |
| PM10 EXCEEDS 2.0 TONS? | NO | (Refer to SJVAPCD Rule 9510, Section 2.4) |
| AREA OF POTENTIAL DISTURBANCE? | 5.3 | Acres |
| AMOUNT OF MATERIAL TRANSPORTED? | 35,000 | CY |
| RULE 9510 APPLIES? | YES | (Refer to SJVAPCD Rule 9510, Section 2.4) |
| REG VIII APPLIES? | YES | (Refer to SJVAPCD Regulation VIII) |
| DUST CONTROL PLAN REQUIRED? | YES | (Refer to SJVAPCD Regulation VIII, Rule 8021) |

SUMMARY OF EMISSIONS REDUCTIONS WITH CONTROL MEASURES

| | NOX | EXH PM10 |
|---|---|---|
| WITHOUT T3 OFFROAD EQUIPMENT | 3.743 | 0.160 |
| WITH T3 OFFROAD EQUIPMENT | 2.386 | 0.103 |
| REDUCTIONS | 36% | 35% |

| ACTIVITY | AVG DAILY ON-SITE EMISSIONS (UNCONTROLLED, LBS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PM10 | | | PM2.5 | | |
| | ROG | NOX | CO | SO2 | FUG | EXH | TOT | FUG | EXH | TOT |
| SITE PREPARATION | 1.412 | 15.633 | 10.850 | 0.022 | 0.095 | 0.652 | 0.747 | 0.015 | 0.603 | 0.618 |
| GRADING/EXCAVATION | 7.048 | 81.685 | 52.200 | 0.101 | 0.249 | 3.548 | 3.797 | 0.029 | 3.267 | 3.296 |
| DRAINAGE/UTILITIES/SUBGRADE | 4.978 | 49.428 | 34.656 | 0.061 | 0.000 | 2.639 | 2.639 | 0.000 | 2.489 | 2.489 |
| PAVING | 2.800 | 19.944 | 18.944 | 0.028 | 0.000 | 1.189 | 1.189 | 0.000 | 1.097 | 1.097 |
| MAX DAILY | 7.048 | 81.685 | 52.200 | 0.101 | 0.249 | 3.548 | 3.797 | 0.029 | 3.267 | 3.296 |

| ACTIVITY | AVG DAILY ON-SITE EMISSIONS (CONTROLLED*, LBS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PM10 | | | PM2.5 | | |
| | ROG | NOX | CO | SO2 | FUG | EXH | TOT | FUG | EXH | TOT |
| SITE PREPARATION | 0.485 | 9.367 | 13.017 | 0.022 | 0.037 | 0.410 | 0.447 | 0.005 | 0.410 | 0.415 |
| GRADING/EXCAVATION | 2.437 | 48.793 | 60.978 | 0.101 | 0.097 | 2.281 | 2.378 | 0.011 | 2.281 | 2.293 |
| DRAINAGE/UTILITIES/SUBGRADE | 1.344 | 28.611 | 35.994 | 0.061 | 0.000 | 1.633 | 1.633 | 0.000 | 1.633 | 1.633 |
| PAVING | 1.411 | 13.689 | 19.622 | 0.028 | 0.000 | 0.858 | 0.858 | 0.000 | 0.858 | 0.858 |
| MAX DAILY | 2.437 | 48.793 | 60.978 | 0.101 | 0.097 | 2.281 | 2.378 | 0.011 | 2.281 | 2.293 |

**INCLUDES USE OF TIER 3 OFF-ROAD EQUIPMENT AND FUGITIVE DUST CONTROL*

## CALEEMOD MODEL INPUT ASSUMPTIONS DERIVED FROM SMAQMD'S ROAD CONSTRUCTION EMISSIONS MODEL

**Road Construction Emissions Model** Version 9.0.0

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

### Input Type

| | | |
|---|---|---|
| Project Name | Peach Ave Widening | |
| Construction Start Year | 2019 | Enter a Year between 2014 and 2040 (inclusive) |
| Project Type | 2 | 1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway<br>2) Road Widening : Project to add a new lane to an existing roadway<br>3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane<br>4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction |
| Project Construction Time | 6.00 | months |
| Working Days per Month | 22.00 | days (assume 22 if unknown) |
| Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22) | 2 | 1) Sand Gravel : Use for quaternary deposits (Delta/West County)<br>2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta)<br>3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta) |
| Project Length | 1.20 | miles |
| Total Project Area | 5.30 | acres |
| Maximum Area Disturbed/Day | 3.00 | acres |
| Water Trucks Used? | 1 | 1. Yes<br>2. No |

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

### Material Hauling Quantity Input

| Material Type | Phase | Haul Truck Capacity (yd³) (assume 20 if unknown) | Import Volume (yd³/day) | Export Volume (yd³/day) |
|---|---|---|---|---|
| Soil | Grubbing/Land Clearing | | | |
| | Grading/Excavation | | | |
| | Drainage/Utilities/Sub-Grade | | | |
| | Paving | | | |
| Asphalt | Grubbing/Land Clearing | | | |
| | Grading/Excavation | 20.00 | | 10000.00 |
| | Drainage/Utilities/Sub-Grade | 20.00 | | 25000.00 |
| | Paving | | | |

### Mitigation Options

| | | |
|---|---|---|
| On-road Fleet Emissions Mitigation | | Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer |
| Off-road Equipment Emissions Mitigation | No Mitigation | Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).<br>Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard |

## MODEL DEFAULT CONSTRUCTION PHASING

| Construction Periods | User Override of Construction Months | Program Calculated Months | User Override of Phase Starting Date | Program Default Phase Starting Date | DAYS |
|---|---|---|---|---|---|
| Grubbing/Land Clearing | | 0.60 | | 1/1/2019 | 13 |
| Grading/Excavation | | 2.70 | | 1/20/2019 | 59 |
| Drainage/Utilities/Sub-Grade | | 1.80 | | 4/13/2019 | 40 |
| Paving | | 0.90 | | 6/7/2019 | 20 |
| **Totals (Months)** | 6 | | | | |

## MODEL DEFAULT WORKER TRIPS

| Worker Commute Emissions User Input | User Override of Worker Commute Default Values | Default Values | |
|---|---|---|---|
| Miles/ one-way trip | | 20 | Calculated Daily Trips |
| One-way trips/day | | 2 | |
| No. of employees: Grubbing/Land Clearing | | 8 | 16 |
| No. of employees: Grading/Excavation | | 23 | 46 |
| No. of employees: Drainage/Utilities/Sub-Grade | | 17 | 34 |
| No. of employees: Paving | | 13 | 26 |

# Peach Ave Widening

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Other Asphalt Surfaces | 5.30 | Acre | 5.30 | 230,868.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **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 - Total project area: 5.3 acres.

Construction Phase - Construction phasing and equipment usage derived from SMAQMD's Road Construction Emissions Model (v9.0) for road widening project, 1.2 mile project length.

Off-road Equipment - Drainage/Util/Subgrade: 1 gen set, 1 air compressor, 1 grader, 1 plate compactor, 1 pump, 1 RT forklift, 1 scraper, 3 signal boards, 3 trenchers operating 8 hours/day

Off-road Equipment - Grading: 1 crawler tractor, 3 excavators, 2 graders, 2 rollers, 1 rubber tired loader, 2 scrapers, 3 signal boards, 4 tractor/loader/backhoe operating 8 hours/day

Off-road Equipment - Paving: 1 paver, 1 paving equipment, 2 rollers, 3 signal boards, 3 tractor/loader/backhoes operating 8 hours/day.

Off-road Equipment - Site Prep: 1 crawler tractor, 2 excavators, 3 signal boards operating 8 hours/day.

Trips and VMT - Hauling assuming 20cy/haul trip. Worker trips are based on SMAQMD's road const model defaults.

On-road Fugitive Dust - Based on model defaults.

Grading - Assumes 10k cy material exported during site prep and 25k cy material imported during grading. Remaining assumptions based on model defaults.

Vehicle Trips - Operational not included.

Construction Off-road Equipment Mitigation - Mitigation includes 61%CE for watering exposed areas, 50%CE for watering unpaved travel ways, 15mph onsite speed limit. Use of T3 offroad equipment included.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 7.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 10.00 | 13.00 |
| tblGrading | AcresOfGrading | 189.00 | 10.00 |
| tblGrading | AcresOfGrading | 6.00 | 0.00 |
| tblGrading | MaterialExported | 0.00 | 10,000.00 |
| tblGrading | MaterialImported | 0.00 | 25,000.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 3.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| 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 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblTripsAndVMT | HaulingTripNumber | 1,250.00 | 500.00 |
| tblTripsAndVMT | HaulingTripNumber | 3,125.00 | 1,250.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 16.00 |
| tblTripsAndVMT | WorkerTripNumber | 45.00 | 46.00 |
| tblTripsAndVMT | WorkerTripNumber | 97.00 | 34.00 |
| tblTripsAndVMT | WorkerTripNumber | 25.00 | 26.00 |

## 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 | 0.3360 | 3.7425 | 2.3962 | 5.3400e-003 | 0.0465 | 0.1598 | 0.2063 | 0.0115 | 0.1483 | 0.1599 | | | | | | 482.8785 |
| **Maximum** | **0.3360** | **3.7425** | **2.3962** | **5.3400e-003** | **0.0465** | **0.1598** | **0.2063** | **0.0115** | **0.1483** | **0.1599** | | | | | | **482.8785** |

### 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 | 0.1280 | 2.3857 | 2.6764 | 5.3400e-003 | 0.0420 | 0.1031 | 0.1451 | 0.0110 | 0.1030 | 0.1140 | | | | | | 482.8781 |
| **Maximum** | **0.1280** | **2.3857** | **2.6764** | **5.3400e-003** | **0.0420** | **0.1031** | **0.1451** | **0.0110** | **0.1030** | **0.1140** | | | | | | **482.8781** |

| | ROG | NOx | 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** | **61.90** | **36.25** | **-11.69** | **0.00** | **9.57** | **35.47** | **29.63** | **4.59** | **30.54** | **28.68** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 5-1-2019 | 7-31-2019 | 1.6442 | 1.0277 |
| 2 | 8-1-2019 | 9-30-2019 | 1.6179 | 0.9801 |
| | | Highest | 1.6442 | 1.0277 |

## 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 | 0.0197 | 0.0000 | 5.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 1.0000e-004 |
| Energy | 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 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| **Total** | **0.0197** | **0.0000** | **5.0000e-005** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | | | | | **1.0000e-004** |

## 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 | 0.0197 | 0.0000 | 5.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 1.0000e-004 |
| Energy | 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 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| **Total** | **0.0197** | **0.0000** | **5.0000e-005** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | | | | | **1.0000e-004** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/29/2019 | 6/14/2019 | 5 | 13 | Site Preparation |
| 2 | Grading/Excavation | Grading | 6/15/2019 | 9/5/2019 | 5 | 59 | Grading/Excavation |
| 3 | Drainage/Utilities/Subgrade | Building Construction | 9/6/2019 | 10/31/2019 | 5 | 40 | Drainage/Utilities/Subgrade |
| 4 | Paving | Paving | 11/1/2019 | 11/28/2019 | 5 | 20 | Paving |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Site Preparation | Excavators | 2 | 8.00 | 158 | 0.38 |
| Site Preparation | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Site Preparation | Signal Boards | 3 | 8.00 | 6 | 0.82 |
| Site Preparation | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Grading/Excavation | Crawler Tractors | 1 | 8.00 | 212 | 0.43 |
| Grading/Excavation | Excavators | 3 | 8.00 | 158 | 0.38 |
| Grading/Excavation | Graders | 2 | 8.00 | 187 | 0.41 |
| Grading/Excavation | Rollers | 2 | 8.00 | 80 | 0.38 |
| Grading/Excavation | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Grading/Excavation | Rubber Tired Loaders | 1 | 8.00 | 203 | 0.36 |
| Grading/Excavation | Scrapers | 2 | 8.00 | 367 | 0.48 |

| | | | | | |
|---|---|---|---|---|---|
| Grading/Excavation | Signal Boards | 3 | 8.00 | 6 | 0.82 |
| Grading/Excavation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Drainage/Utilities/Subgrade | Air Compressors | 1 | 8.00 | 78 | 0.48 |
| Drainage/Utilities/Subgrade | Cranes | 0 | 7.00 | 231 | 0.29 |
| Drainage/Utilities/Subgrade | Forklifts | 0 | 8.00 | 89 | 0.20 |
| Drainage/Utilities/Subgrade | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Drainage/Utilities/Subgrade | Graders | 1 | 8.00 | 187 | 0.41 |
| Drainage/Utilities/Subgrade | Plate Compactors | 1 | 8.00 | 8 | 0.43 |
| Drainage/Utilities/Subgrade | Pumps | 1 | 8.00 | 84 | 0.74 |
| Drainage/Utilities/Subgrade | Rough Terrain Forklifts | 1 | 8.00 | 100 | 0.40 |
| Drainage/Utilities/Subgrade | Scrapers | 1 | 8.00 | 367 | 0.48 |
| Drainage/Utilities/Subgrade | Signal Boards | 3 | 8.00 | 6 | 0.82 |
| Drainage/Utilities/Subgrade | Tractors/Loaders/Backhoes | 0 | 7.00 | 97 | 0.37 |
| Drainage/Utilities/Subgrade | Trenchers | 3 | 8.00 | 78 | 0.50 |
| Drainage/Utilities/Subgrade | Welders | 0 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 1 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Signal Boards | 3 | 8.00 | 6 | 0.82 |
| Paving | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 6 | 16.00 | 0.00 | 500.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading/Excavation | 18 | 46.00 | 0.00 | 1,250.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Drainage/Utilities/Subgrade | 13 | 34.00 | 38.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 10 | 26.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 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 | | | | | 5.7000e-004 | 0.0000 | 5.7000e-004 | 9.0000e-005 | 0.0000 | 9.0000e-005 | | | | | | 0.0000 |
| Off-Road | 8.4700e-003 | 0.0938 | 0.0651 | 1.3000e-004 | | 3.9100e-003 | 3.9100e-003 | | 3.6200e-003 | 3.6200e-003 | | | | | | 11.5699 |
| **Total** | **8.4700e-003** | **0.0938** | **0.0651** | **1.3000e-004** | **5.7000e-004** | **3.9100e-003** | **4.4800e-003** | **9.0000e-005** | **3.6200e-003** | **3.7100e-003** | | | | | | **11.5699** |

## 3.2 Site Preparation - 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 | 2.1600e-003 | 0.0754 | 0.0101 | 2.0000e-004 | 4.2700e-003 | 2.9000e-004 | 4.5700e-003 | 1.1800e-003 | 2.8000e-004 | 1.4600e-003 | | | | | | 19.3078 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 4.9000e-004 | 3.2000e-004 | 3.2400e-003 | 1.0000e-005 | 8.3000e-004 | 1.0000e-005 | 8.4000e-004 | 2.2000e-004 | 1.0000e-005 | 2.3000e-004 | | | | | | 0.7433 |
| **Total** | **2.6500e-003** | **0.0757** | **0.0133** | **2.1000e-004** | **5.1000e-003** | **3.0000e-004** | **5.4100e-003** | **1.4000e-003** | **2.9000e-004** | **1.6900e-003** | | | | | | **20.0510** |

### 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 | | | | | 2.2000e-004 | 0.0000 | 2.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | | | | | | 0.0000 |
| Off-Road | 2.9100e-003 | 0.0562 | 0.0781 | 1.3000e-004 | | 2.4600e-003 | 2.4600e-003 | | 2.4600e-003 | 2.4600e-003 | | | | | | 11.5699 |
| **Total** | **2.9100e-003** | **0.0562** | **0.0781** | **1.3000e-004** | **2.2000e-004** | **2.4600e-003** | **2.6800e-003** | **3.0000e-005** | **2.4600e-003** | **2.4900e-003** | | | | | | **11.5699** |

## 3.2 Site Preparation - 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 | 2.1600e-003 | 0.0754 | 0.0101 | 2.0000e-004 | 4.2700e-003 | 2.9000e-004 | 4.5700e-003 | 1.1800e-003 | 2.8000e-004 | 1.4600e-003 | | | | | | 19.3078 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 4.9000e-004 | 3.2000e-004 | 3.2400e-003 | 1.0000e-005 | 8.3000e-004 | 1.0000e-005 | 8.4000e-004 | 2.2000e-004 | 1.0000e-005 | 2.3000e-004 | | | | | | 0.7433 |
| **Total** | **2.6500e-003** | **0.0757** | **0.0133** | **2.1000e-004** | **5.1000e-003** | **3.0000e-004** | **5.4100e-003** | **1.4000e-003** | **2.9000e-004** | **1.6900e-003** | | | | | | **20.0510** |

## 3.3 Grading/Excavation - 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 | | | | | 6.7200e-003 | 0.0000 | 6.7200e-003 | 7.9000e-004 | 0.0000 | 7.9000e-004 | | | | | | 0.0000 |
| Off-Road | 0.1903 | 2.2055 | 1.4094 | 2.7400e-003 | | 0.0958 | 0.0958 | | 0.0882 | 0.0882 | | | | | | 246.5671 |
| **Total** | **0.1903** | **2.2055** | **1.4094** | **2.7400e-003** | **6.7200e-003** | **0.0958** | **0.1025** | **7.9000e-004** | **0.0882** | **0.0890** | | | | | | **246.5671** |

## 3.3 Grading/Excavation - 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 | 5.4100e-003 | 0.1884 | 0.0251 | 5.1000e-004 | 0.0107 | 7.3000e-004 | 0.0114 | 2.9400e-003 | 7.0000e-004 | 3.6400e-003 | | | | | | 48.2695 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 6.4100e-003 | 4.2200e-003 | 0.0423 | 1.1000e-004 | 0.0109 | 7.0000e-005 | 0.0109 | 2.8800e-003 | 7.0000e-005 | 2.9500e-003 | | | | | | 9.6980 |
| **Total** | **0.0118** | **0.1926** | **0.0674** | **6.2000e-004** | **0.0215** | **8.0000e-004** | **0.0223** | **5.8200e-003** | **7.7000e-004** | **6.5900e-003** | | | | | | **57.9675** |

### 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 | | | | | 2.6200e-003 | 0.0000 | 2.6200e-003 | 3.1000e-004 | 0.0000 | 3.1000e-004 | | | | | | 0.0000 |
| Off-Road | 0.0658 | 1.3174 | 1.6464 | 2.7400e-003 | | 0.0616 | 0.0616 | | 0.0616 | 0.0616 | | | | | | 246.5669 |
| **Total** | **0.0658** | **1.3174** | **1.6464** | **2.7400e-003** | **2.6200e-003** | **0.0616** | **0.0642** | **3.1000e-004** | **0.0616** | **0.0619** | | | | | | **246.5669** |

## 3.3 Grading/Excavation - 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 | 5.4100e-003 | 0.1884 | 0.0251 | 5.1000e-004 | 0.0107 | 7.3000e-004 | 0.0114 | 2.9400e-003 | 7.0000e-004 | 3.6400e-003 | | | | | | 48.2695 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 6.4100e-003 | 4.2200e-003 | 0.0423 | 1.1000e-004 | 0.0109 | 7.0000e-005 | 0.0109 | 2.8800e-003 | 7.0000e-005 | 2.9500e-003 | | | | | | 9.6980 |
| **Total** | **0.0118** | **0.1926** | **0.0674** | **6.2000e-004** | **0.0215** | **8.0000e-004** | **0.0223** | **5.8200e-003** | **7.7000e-004** | **6.5900e-003** | | | | | | **57.9675** |

## 3.4 Drainage/Utilities/Subgrade - 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 | 0.0896 | 0.8897 | 0.6238 | 1.1000e-003 | | 0.0475 | 0.0475 | | 0.0448 | 0.0448 | | | | | | 96.7912 |
| **Total** | **0.0896** | **0.8897** | **0.6238** | **1.1000e-003** | | **0.0475** | **0.0475** | | **0.0448** | **0.0448** | | | | | | **96.7912** |

## 3.4 Drainage/Utilities/Subgrade - 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 |
| Vendor | 3.5000e-003 | 0.1028 | 0.0175 | 2.2000e-004 | 5.0400e-003 | 7.5000e-004 | 5.7800e-003 | 1.4500e-003 | 7.1000e-004 | 2.1700e-003 | | | | | | 20.7394 |
| Worker | 3.2100e-003 | 2.1100e-003 | 0.0212 | 5.0000e-005 | 5.4400e-003 | 4.0000e-005 | 5.4700e-003 | 1.4400e-003 | 3.0000e-005 | 1.4800e-003 | | | | | | 4.8597 |
| **Total** | **6.7100e-003** | **0.1049** | **0.0387** | **2.7000e-004** | **0.0105** | **7.9000e-004** | **0.0113** | **2.8900e-003** | **7.4000e-004** | **3.6500e-003** | | | | | | **25.5991** |

### 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 | 0.0242 | 0.5150 | 0.6479 | 1.1000e-003 | | 0.0294 | 0.0294 | | 0.0294 | 0.0294 | | | | | | 96.7910 |
| **Total** | **0.0242** | **0.5150** | **0.6479** | **1.1000e-003** | | **0.0294** | **0.0294** | | **0.0294** | **0.0294** | | | | | | **96.7910** |

## 3.4 Drainage/Utilities/Subgrade - 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 |
| Vendor | 3.5000e-003 | 0.1028 | 0.0175 | 2.2000e-004 | 5.0400e-003 | 7.5000e-004 | 5.7800e-003 | 1.4500e-003 | 7.1000e-004 | 2.1700e-003 | | | | | | 20.7394 |
| Worker | 3.2100e-003 | 2.1100e-003 | 0.0212 | 5.0000e-005 | 5.4400e-003 | 4.0000e-005 | 5.4700e-003 | 1.4400e-003 | 3.0000e-005 | 1.4800e-003 | | | | | | 4.8597 |
| **Total** | **6.7100e-003** | **0.1049** | **0.0387** | **2.7000e-004** | **0.0105** | **7.9000e-004** | **0.0113** | **2.8900e-003** | **7.4000e-004** | **3.6500e-003** | | | | | | **25.5991** |

## 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 | 0.0182 | 0.1795 | 0.1705 | 2.5000e-004 | | 0.0107 | 0.0107 | | 9.8700e-003 | 9.8700e-003 | | | | | | 22.4747 |
| Paving | 6.9400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| **Total** | **0.0252** | **0.1795** | **0.1705** | **2.5000e-004** | | **0.0107** | **0.0107** | | **9.8700e-003** | **9.8700e-003** | | | | | | **22.4747** |

## 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 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 1.2300e-003 | 8.1000e-004 | 8.1000e-003 | 2.0000e-005 | 2.0800e-003 | 1.0000e-005 | 2.0900e-003 | 5.5000e-004 | 1.0000e-005 | 5.7000e-004 | | | | | | 1.8581 |
| **Total** | **1.2300e-003** | **8.1000e-004** | **8.1000e-003** | **2.0000e-005** | **2.0800e-003** | **1.0000e-005** | **2.0900e-003** | **5.5000e-004** | **1.0000e-005** | **5.7000e-004** | | | | | | **1.8581** |

### 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 | 5.7300e-003 | 0.1232 | 0.1766 | 2.5000e-004 | | 7.7200e-003 | 7.7200e-003 | | 7.7200e-003 | 7.7200e-003 | | | | | | 22.4747 |
| Paving | 6.9400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| **Total** | **0.0127** | **0.1232** | **0.1766** | **2.5000e-004** | | **7.7200e-003** | **7.7200e-003** | | **7.7200e-003** | **7.7200e-003** | | | | | | **22.4747** |

### 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 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Worker | 1.2300e-003 | 8.1000e-004 | 8.1000e-003 | 2.0000e-005 | 2.0800e-003 | 1.0000e-005 | 2.0900e-003 | 5.5000e-004 | 1.0000e-005 | 5.7000e-004 | | | | | | 1.8581 |
| **Total** | **1.2300e-003** | **8.1000e-004** | **8.1000e-003** | **2.0000e-005** | **2.0800e-003** | **1.0000e-005** | **2.0900e-003** | **5.5000e-004** | **1.0000e-005** | **5.7000e-004** | | | | | | **1.8581** |

## 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 |
| Unmitigated | 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 |
| Other Asphalt Surfaces | 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 |
| Other Asphalt Surfaces | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other Asphalt Surfaces | 0.481390 | 0.032808 | 0.168621 | 0.127212 | 0.018382 | 0.004997 | 0.032622 | 0.122881 | 0.002369 | 0.001675 | 0.005261 | 0.001115 | 0.000667 |

# 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 |
| Electricity Unmitigated | | | | | | 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 |
| NaturalGas Unmitigated | 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 | | | | | |
| Other Asphalt Surfaces | 0 | 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** |

## 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 | | | | | |
| Other Asphalt Surfaces | 0 | 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** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | | | | 0.0000 |
| **Total** | | | | | **0.0000** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | | | | 0.0000 |
| **Total** | | | | | **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 | 0.0197 | 0.0000 | 5.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 1.0000e-004 |
| Unmitigated | 0.0197 | 0.0000 | 5.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 1.0000e-004 |

## 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 | 4.8200e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Consumer Products | 0.0149 | | | | | 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 | | | | | | 1.0000e-004 |
| **Total** | **0.0197** | **0.0000** | **5.0000e-005** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | | | | | **1.0000e-004** |

**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 | 4.8200e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | | | | 0.0000 |
| Consumer Products | 0.0149 | | | | | 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 | | | | | | 1.0000e-004 |
| **Total** | **0.0197** | **0.0000** | **5.0000e-005** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | | | | | **1.0000e-004** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | | | | 0.0000 |
| Unmitigated | | | | 0.0000 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | | | | 0.0000 |
| **Total** | | | | | **0.0000** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | | | | 0.0000 |
| **Total** | | | | | **0.0000** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

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

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | | | | 0.0000 |
| **Total** | | | | | **0.0000** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | | | | 0.0000 |
| **Total** | | | | | **0.0000** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

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

### Boilers

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

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# APPENDIX B

## *Biotic Evaluation: Peach Avenue Widening Project City of Fresno, California*

**Prepared by:**
**Live Oak Associates, Inc.**
**May 14, 2014**

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

# BIOTIC EVALUATION
# PEACH AVENUE WIDENING PROJECT
# CITY OF FRESNO, CALIFORNIA

By:

**LIVE OAK ASSOCIATES, INC.**

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Geoffrey D. Cline (Senior Project Manager)

For:

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Fresno, CA 93711

May 14, 2014 Project No. 1750-01

## EXECUTIVE SUMMARY

The City of Fresno proposes to widen Peach Avenue from its intersection with East Drummond Avenue in the south to Butler Avenue in the north. Proposed widening will result in the creation of landscaped medians, protected turn lanes, sidewalks, gutters, bike lane, etc.

Live Oak Associates, Inc. surveyed the site for land uses and biotic habitats, and the plants and animals associated with both, during the summer of 2013. The primary land use was urban, which consisted of paved roadways, roadway medians, and residences with associated landscaped yards. Other land use/habitat types included ruderal fields, an irrigated pasture, and the concrete-lined channel of the Central Canal. The vegetation associated with the project site consisted of non-native landscaping (i.e. horticultural varieties of trees and shrubs) and non-native annual weeds. Terrestrial vertebrates within the project site are generally those associated with urban environments, although horticultural trees and shrubs no doubt provide cover for many native migratory birds during the spring and fall migration. The project site does not provide habitat for most special status plants and animals such as those listed as threatened or endangered per provisions of the state and federal endangered species acts. Two species, the western burrowing owl and the loggerhead shrike (California species of special concern) could nest on the site, although neither species was observed during a field survey conducted on July 5, 2013.

The road widening project will require modification of the Central Canal (extension of the existing box culverts) where it passes under Peach Avenue. The Central Canal is an engineered channel designed for the conveyance of irrigation water to agricultural fields. The sides are concrete-lined at the location of the project site. This maintained canal is kept clear of most vegetation and is of minor value to most native terrestrial vertebrates. It is not connected to downstream navigable waters that might be considered waters of the U.S., so the canal itself would not likely be considered a water of the U.S. The existing box culverts under Peach Avenue provide a suitable platform for cliff swallows to construct their nests, although evidence of recent nesting was not observed during the July 5 survey.

Project construction during the nesting season could result in the mortality of resident and migratory birds either nesting in mature horticultural trees occurring along the alignment, in ruderal fields, or within the aforementioned box culverts under Peach Avenue. Project construction leading to mortality of nesting birds would be considered a significant adverse environmental effect of the project, and would also constitute a likely violation of the federal Migratory Bird Treaty Act and California Fish and Game Code. To mitigate possible impact to nesting birds, the project must be constructed outside the nesting season (early February through late August), or should that not be possible, a nesting bird survey must be conducted within 30 days of the onset of project construction, and disturbance-free buffers established and maintained around all nests until the young have fledged.

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# 1.0 INTRODUCTION

The technical report that follows describes the biotic resources associated with the Peach Avenue Widening Project proposed for a 1.5 mile portion of Peach Avenue's alignment in the City of Fresno, California. This information is used to evaluate possible impact to those resources resulting from the project. The project site is located along that portion of Peach Avenue between its intersection with East Drummond Avenue on the south and Butler Avenue on the north (Figure 1). The project site can be found on the Malaga, California United States Geological Survey (USGS) quadrangle, along the east side of Sections 7 and 18 and the west side of Sections 8 and 17, in Township 14 South, Range 21 East (Mt. Diablo Base Meridian).

## 1.1 PROJECT DESCRIPTION

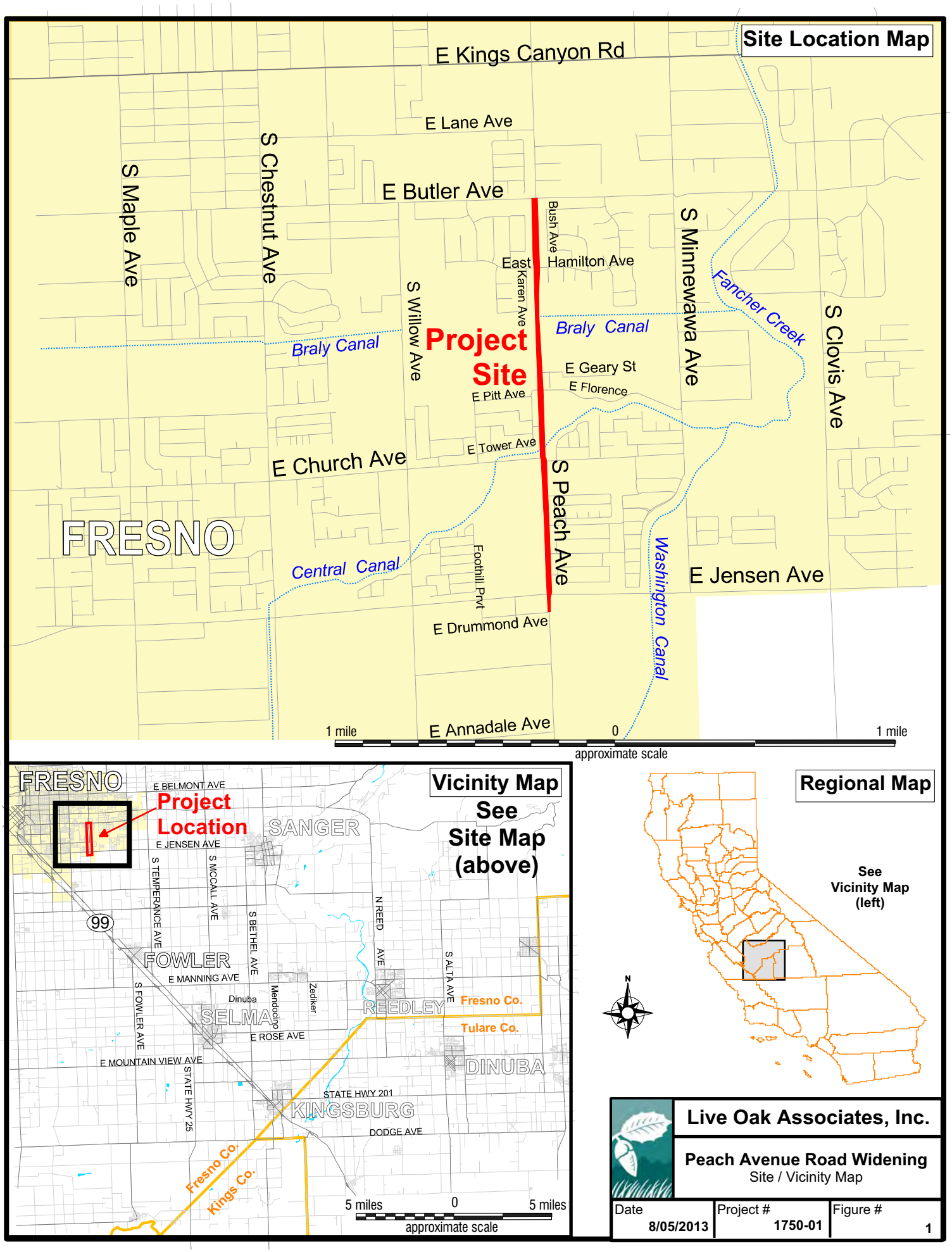
The City of Fresno proposes to widen Peach Avenue within the project site by approximately 20 feet on both sides of the road, creating a four-lane road with the following improvements:

- landscaped median islands;
- protected left-turn lanes;
- bike lanes;
- curbs and gutters;
- sidewalks;
- landscaping and irrigation;
- street lighting;
- modifications to existing traffic signal facilities;
- widening of the existing irrigation canal where it passes under Peach Avenue;
- upgrading of the existing railroad crossing at the California Avenue alignment;

The project is expected to improve traffic capacity and safety for motorists and pedestrians on Peach Avenue. Subject to funding, the City of Fresno proposes to initiate the project in the next two to four years.

## 1.2 REPORT OBJECTIVES

Linear road projects that encroach on vacant or undeveloped lands (i.e., fallow fields, pastures, grasslands, woodlands, etc.) or even urban landscaping that includes mature trees may result in


Site Location Map
E Kings Canyon Rd
E Lane Ave
E Butler Ave
S Maple Ave
S Chestnut Ave
S Willow Ave
Bush Ave
East Hamilton Ave
Karen Ave
S Minnewawa Ave
S Clovis Ave
Fancher Creek
Braly Canal
Braly Canal
Project Site
E Pitt Ave
E Geary St
E Florence
E Tower Ave
E Church Ave
S Peach Ave
FRESNO
Central Canal
Foothill Prvt
Washington Canal
E Jensen Ave
E Drummond Ave
E Annadale Ave
1 mile
0
1 mile
approximate scale
Vicinity Map
See Site Map (above)
FRESNO
E BELMONT AVE
Project Location
SANGER
E JENSEN AVE
S TEMPERANCE AVE
S MCCALL AVE
S BETHEL AVE
N REED AVE
S ALTA AVE
99
FOWLER
E MANNING AVE
S FOWLER AVE
Dinuba
Merdocino
Zediker
SELMA
REEDLEY
Fresno Co.
Tulare Co.
E ROSE AVE
E MOUNTAIN VIEW AVE
STATE HWY 25
DINUBA
STATE HWY 201
KINGSBURG
DODGE AVE
Fresno Co.
Kings Co.
5 miles
0
5 miles
approximate scale
Regional Map
See Vicinity Map (left)
N
Live Oak Associates, Inc.
Peach Avenue Road Widening
Site / Vicinity Map
Date
8/05/2013
Project #
1750-01
Figure #
1

the loss of sensitive habitats, impacts to wetlands and natural waterways, elimination of populations of rare plant species, or mortality of native wildlife species (collectively sensitive biotic resources). In such cases, site development may be regulated by state or federal agencies or subject to provisions of the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). This report addresses issues related to: 1) sensitive biotic resources occurring or potentially occurring on the project site; 2) the federal, state, and local laws regulating projects that may adversely affect such resources; and 3) mitigation measures which may be required to reduce the magnitude of anticipated project impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all information related to existing biological resources of the project site and immediate vicinity;
- Make reasonable inferences about the biological resources that may occur on the project site based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any state or federal laws;
- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

## 1.3 STUDY METHODOLOGY

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: the *California Natural Diversity Data Base* (CNDDB) (CDFW[1] 2013a); the California Native Plant Society (CNPS) *Online Inventory of Rare and Endangered Vascular Plants of California 8th Edition* (CNPS 2013); *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW 2013b), *State and Federally Listed Endangered and Threatened Animals of California* (CDFG 2013c), *Special*

[1] California Department of Fish and Wildlife changed their name from California Department of Fish and Game effective January 1, 2013.

*Animals* (CDFG 2011); *California's Wildlife, Volumes I, II, and III* (Zeiner et al. 1988-1990); numerous planning documents and biological studies for projects in the area, many of which have been prepared by LOA; and manuals and references related to plants and animals of California.

A reconnaissance-level field survey of the project site was completed on July 5, 2013 by LOA biologist David Hartesveldt. The survey consisted of driving and walking through the project site and surveying for special-status species habitats and hydrologic features that may be considered waters of the U.S. While on site, Mr. Hartesveldt noted prominent characteristics of all onsite habitats, identified all plant and animal species observed, and collected data regarding potential special-status species habitats, and jurisdictional waters. Information gathered in the field was also used to identify the plant communities of the site, identify regionally-occurring plants and animals that are present and/or could be present in those communities, characterize regional wildlife movement patterns and the role the site plays in those movements, and map biologically sensitive areas that may be subject to the regulations of state and federal resource agencies.

## 2.0 EXISTING CONDITIONS

The project site is located in the city of Fresno, the largest urban area of the San Joaquin Valley. At the time of the survey the project site consisted of a mix of urban development, vacant lands consisting of disced fields, an irrigated pasture, and a small segment of an irrigation canal passing under Peach Avenue. The project site is nearly level, having a low elevation of 298 feet National Geodetic Vertical Datum (NGVD) at its southern terminus and a maximum elevation of approximately 305 feet NGVD at the intersection of Peach and Butler Avenues. Natural drainage features such as creeks, ponds, vernal pools, etc. were not present on the project site, although the Central Canal passes under Peach Avenue just north of its intersection with Church Avenue.

Historically, the majority of the site was used for agriculture. As recently as 1998, much of the project alignment south of the Southern Pacific railroad tracks was being farmed. The lands being farmed at that time have largely been converted to residential development, or are now disced fallow fields. The only vestige of farming remaining along the alignment is an irrigated pasture west of Peach and north of Jensen Avenues.

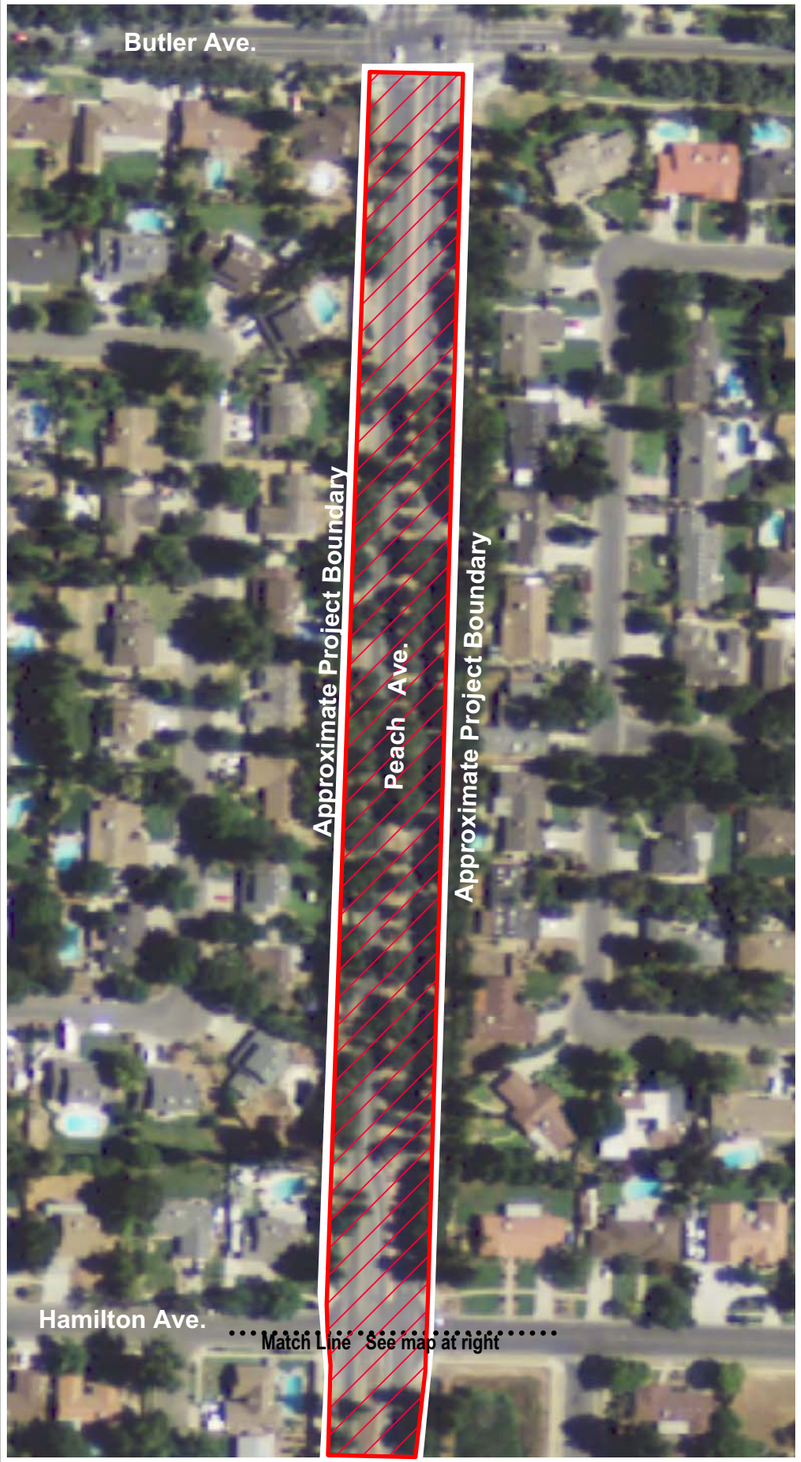
Six soils have been identified on the site by the Natural Resources Conservation Service (NRCS) and can be found below, in Table 1. All soils of the site likely developed in the granitic alluvium of terraces associated with the San Joaquin and Kings River. A strongly cemented silica-iron hardpan formed below the subsoil of the soils as they developed, thus restricting its permeability to water. Because under natural conditions these soils have a hummocky microrelief, seasonal pools would form in any topographic depressions that might be present, thus leading to the formation of seasonal wetlands during the winter and spring of every year. The soils of the project site, like the soils of the surrounding lands, have all been dip-ripped and leveled. The subsurface hardpan is no longer intact and the hummocky microrelief has been eliminated. Thus, seasonal wetlands that may have at one time been present are no longer.

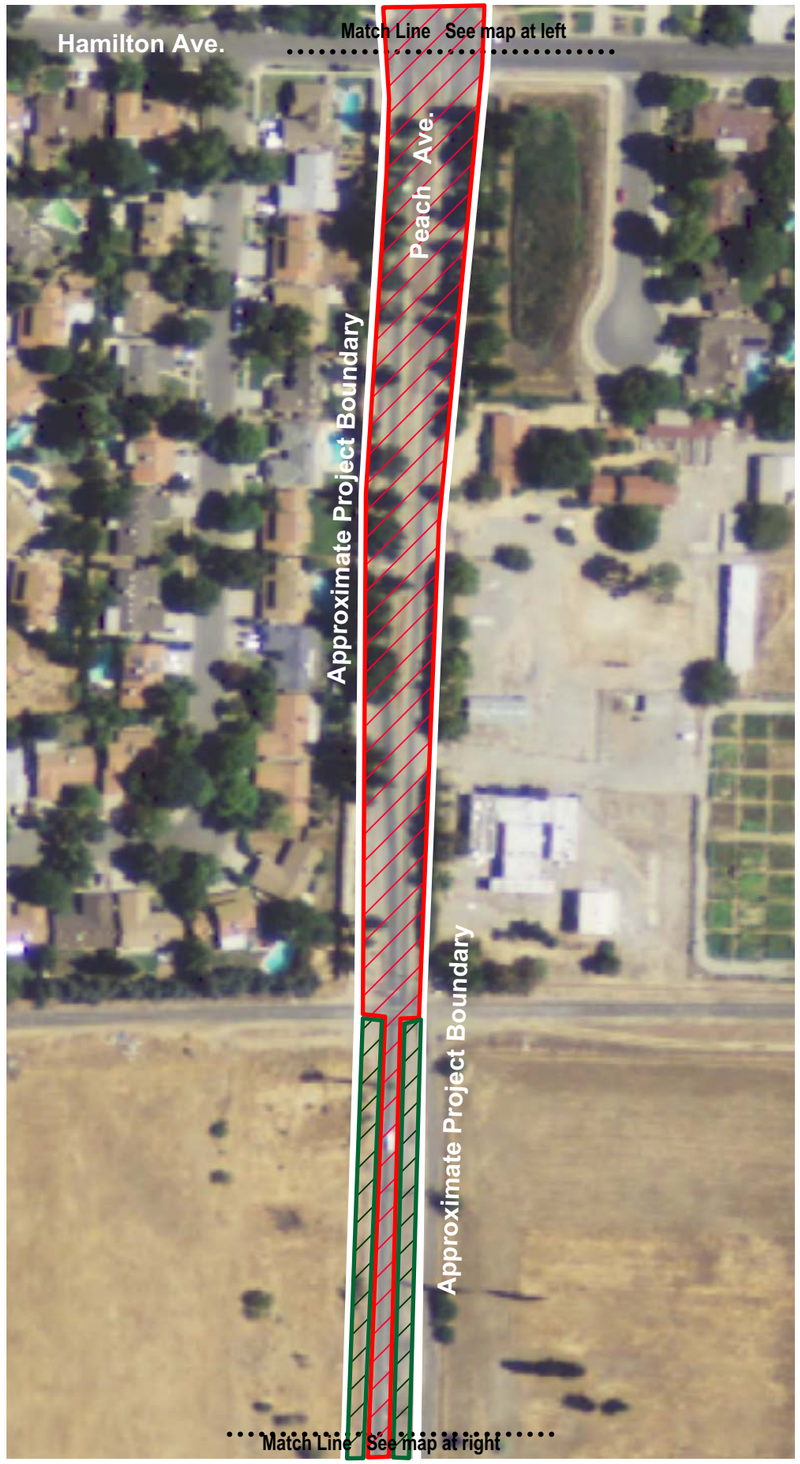
| TABLE 1. SOILS OF THE PROJECT SITE (from NRCS 1971, 1992, and Web Soil Survey accessed August, 2013). | | | | |
|---|---|---|---|---|
| **Soil Series/Soil** | **Map Symbol** | **Parent Material** | **Drainage Class** | **Hydric** |
| **Exeter Series** Exeter sandy loam | Es | Granitic Alluvium | Well Drained | No |
| **Hanford Series** Hanford sandy loam | Hc | Granitic Alluvium | Well Drained | No |
| **Hesperia Series** Hesperia fine sandy loam, moderately deep | Hst | Granitic Alluvium | Well Drained | No |
| **Ramona Series** Ramona sandy loam, hard substratum | Rb | Granitic Alluvium | Well Drained | No |
| **Ramona Series** Ramona loam, hard substratum | Re | Granitic Alluvium | Well Drained | No |
| **Ramona Series** Ramona loam | Rc | Granitic Alluvium | Well Drained | No |

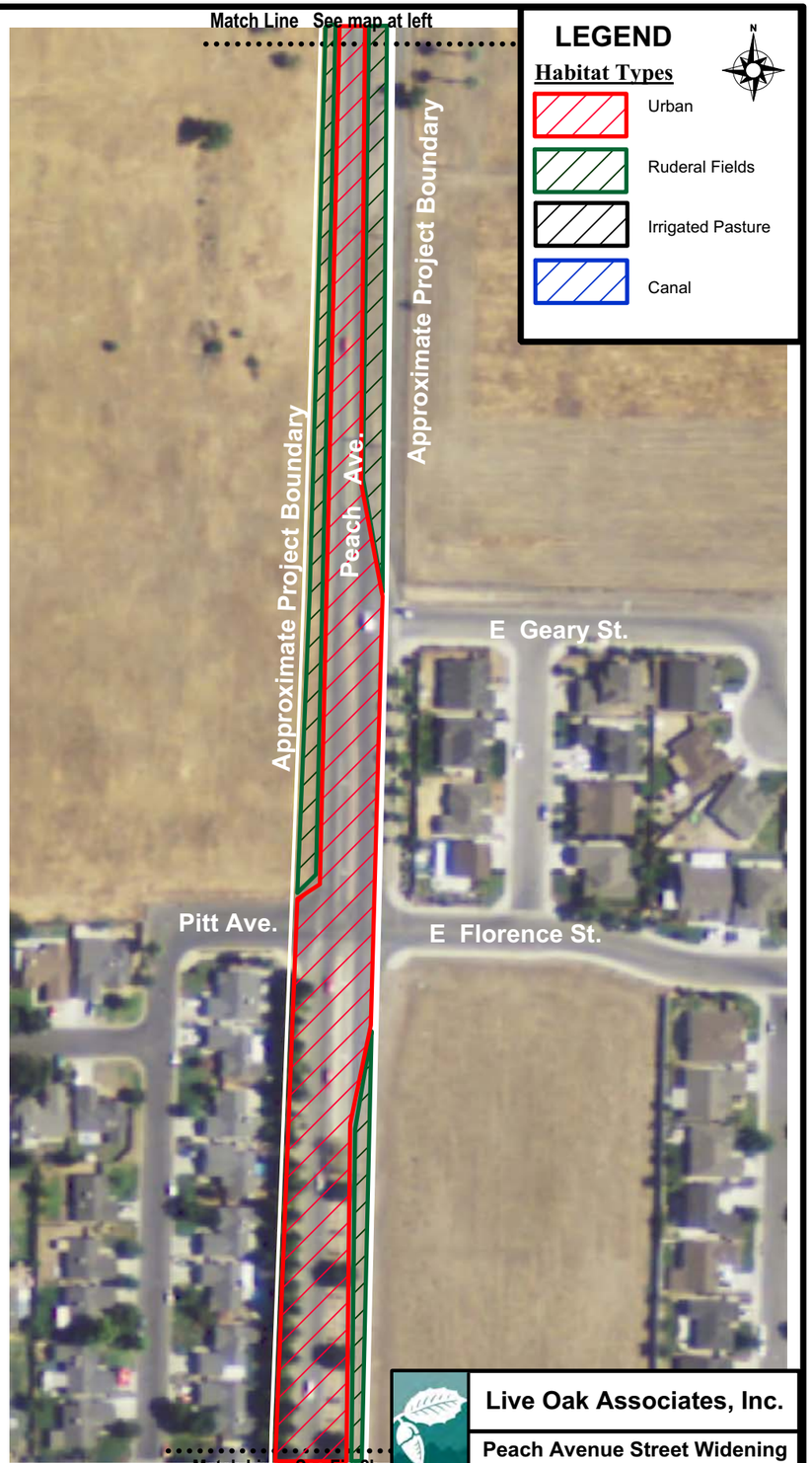
The project site is located in a region of California having a Mediterranean climate. Summers are dry and typically quite warm with daytime temperatures commonly exceeding 100$^{o}$ Fahrenheit. Winters are rainy and cool with daytime temperatures rarely exceeding 65$^{o}$ Fahrenheit. Annual precipitation in the general vicinity of the project site is highly variable from year to year with a mean annual rainfall of approximately 12 inches, most of which falls between the months of October and March. Virtually all precipitation falls in the form of rain. Stormwater infiltrates the site's soils and leaves the site as sheet flow whenever soil field capacity has been reached, since natural drainage features were absent.

## 2.1 BIOTIC HABITATS

During the July 2013 survey four land uses/biotic habitats were observed within the project site and included urban, ruderal fields, irrigated pasture, and an engineered canal (Figures 2a and b). The list of vascular plants observed on the site has been provided in Appendix A and the list of terrestrial vertebrates using, or potentially using, the site has been provided in Appendix B.




**LEGEND**

**Habitat Types**

- Urban
- Ruderal Fields
- Irrigated Pasture
- Canal

N

250 feet 0 250 feet

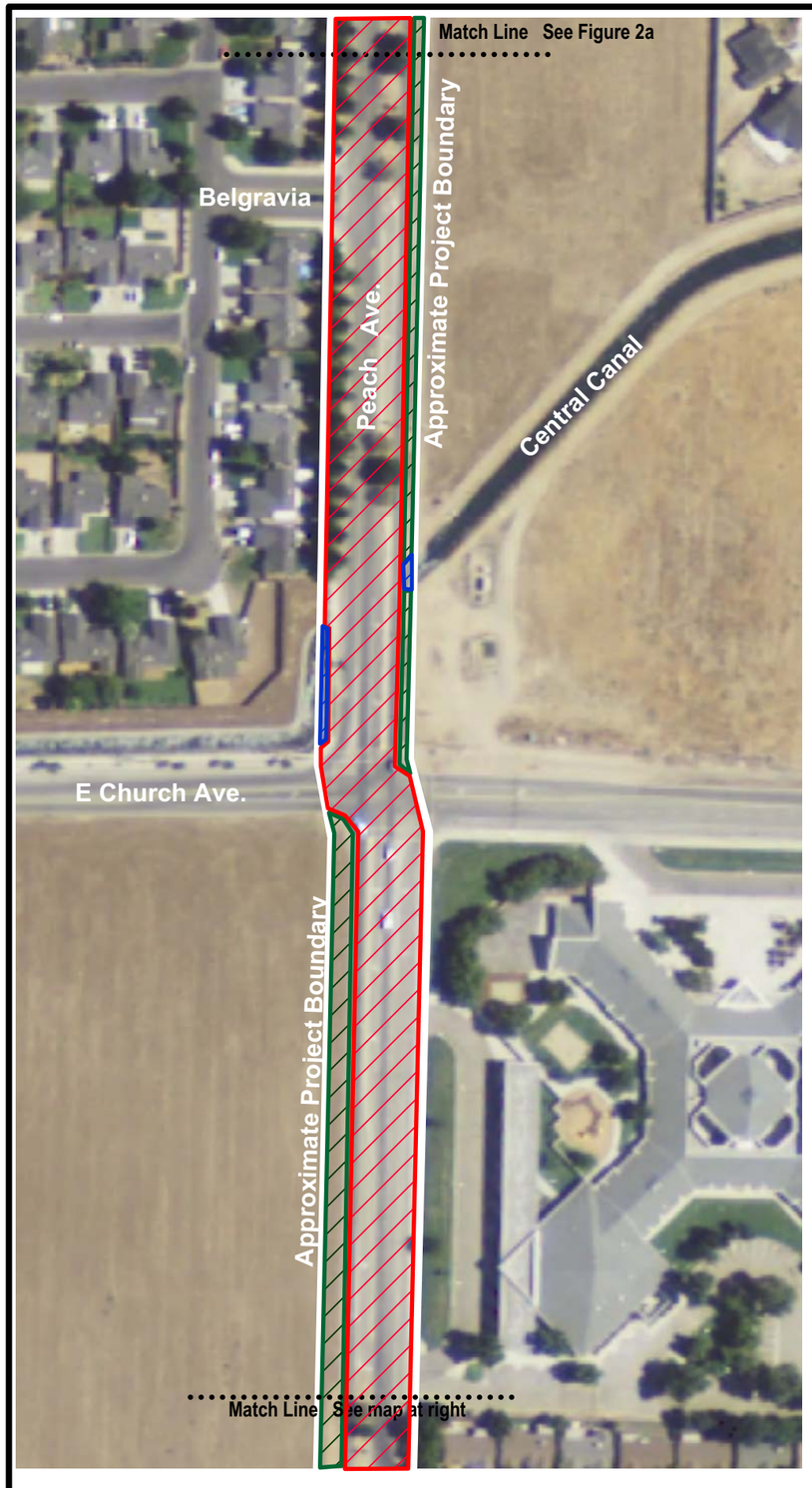
Approximate Scale

Aerial Photo courtesy of
USDA-FSA Aerial Photography Field Office
NAIP Photo 8/16/2012

**Live Oak Associates, Inc.**

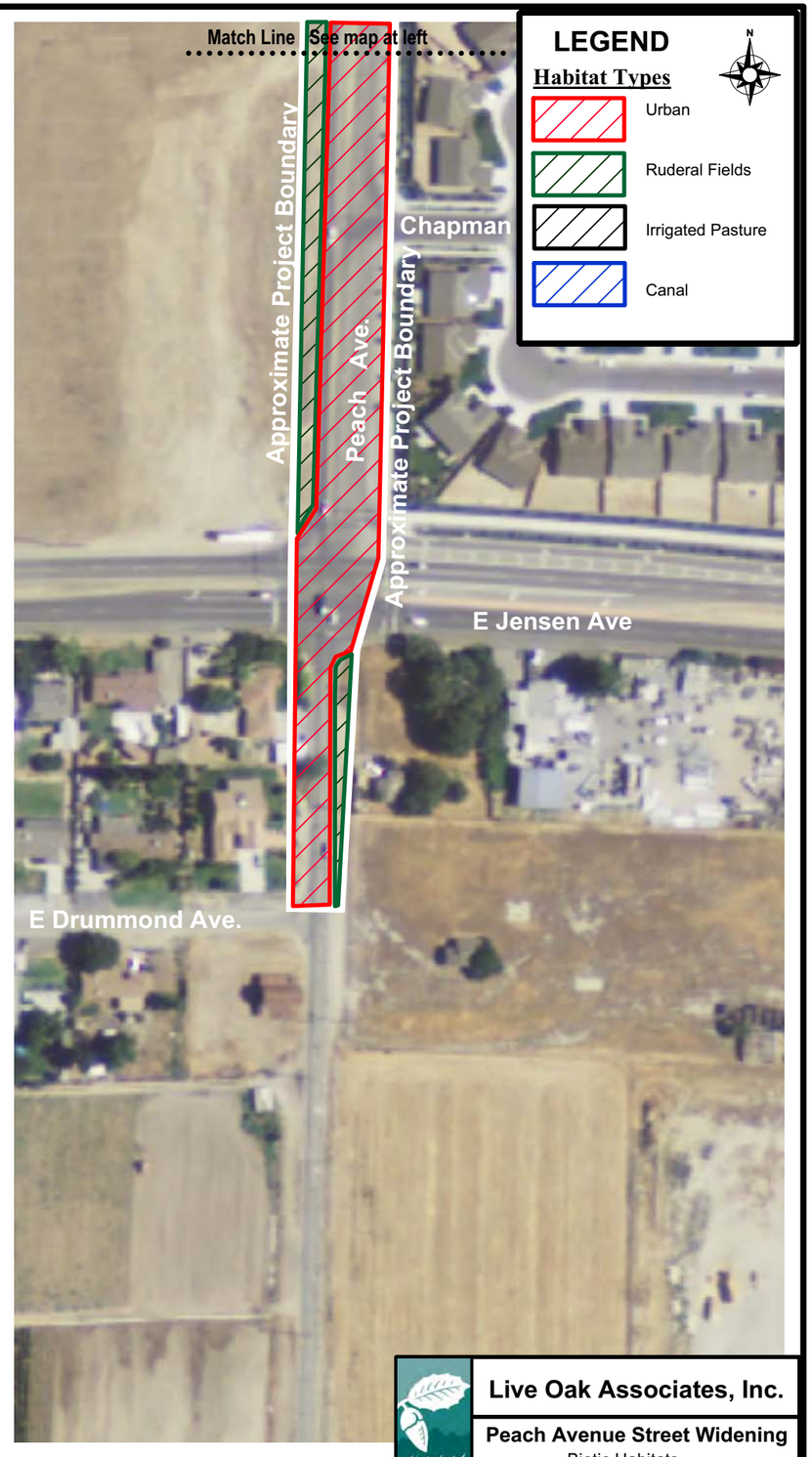
**Peach Avenue Street Widening**
Biotic Habitats

| Date | Project # | Figure # |
|---|---|---|
| 8/07/2013 | 1750-01 | 2a |













Aerial Photo courtesy of
USDA-FSA Aerial Photography Field Office
NAIP Photo 8/16/2012

250 feet 0 250 feet
Approximate Scale

**Live Oak Associates, Inc.**

**Peach Avenue Street Widening**
Biotic Habitats

| Date | Project # | Figure # |
|---|---|---|
| 8/07/2013 | 1750-01 | 2b |

### 2.1.1 Urban

Urban lands consist of residential development and associated infrastructure (primarily streets). This land use type included the entire length of the paved surface street of Peach Avenue. It also included residential lands on both sides of Peach Avenue between East Drummond and Jensen Avenues and the Southern Pacific Railroad tracks and Butler Avenue, as well as lands immediately to the east between East Geary Street and East Florence Avenue and lands immediately to the west between East Florence Avenue and the Central Canal (see Figure 2).

Urban development is of relatively low value for native plant and animal species, since undisturbed native habitats are entirely absent from this land use type. Residential landscaping consists almost exclusively of horticultural plant species that are not native to the San Joaquin Valley, or for that matter, the United States. Common tree species observed along the Peach Avenue alignment included Canary Island pine (*Pinus caneriensis*), Chinese pistachio (*Pistachia chinensis*), Bradford pears (*Pyrus calleryana*), European olive (*Olea europea*), and desert willow (*Chilopsis linearis*), to name a few. Shrubs included oleanders (*Nerium oleander*) and one or more species of juniper (*Juniperus* sp.)

This human-created habitat limits opportunities for native terrestrial vertebrates, but is used by native species to some extent. Landscaping within the project site provides limited habitat for western fence lizards (*Sceloporus occidentalis*) and gopher snakes (*Pituophis cantenifer catenifer*). Resident birds observed and expected in this habitat include western scrub jays (*Aphelocoma californica*), northern mockingbirds (*Mimus polyglottus*), house finches (*Carpodacus mexicanus*), and house sparrows (*Passer domesticus*). Horticultural trees and shrubs often provide nesting habitat for such species, as well as seasonal cover to a large number of native birds passing through the area during migration. Mammal diversity in such areas is very limited with eastern fox squirrels (*Sciurus niger*), house mice (*Mus musculus*), and black rats (*Rattus rattus*) potentially present.

### 3.1.2 Ruderal Fields

Ruderal (disturbed) fields also bordered the Peach Avenue alignment in several places, including a large area on both sides of Peach Avenue south of the Southern Pacific Railroad tracks. Other

areas included the east side of Peach Avenue between East Florence and East Church Avenues and the west side of Peach Avenue between Church and Jensen Avenues. These ruderal fields were once in agricultural production but currently are disced fallow fields. These fields are maintained annually as disced fields so as to eliminate standing dried grasses and forbs that are highly flammable and thus of potential danger to nearby residences. Thus, the vegetation is disced every year such that habitat values sometimes associated with grassland habitats can never fully develop.

Annual discing favors vegetation composed of non-native annual grasses and forbs and ensures that few native plant species can become re-established in these areas of the Peach Avenue project site. The chopped dried remains of ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), and barnyard barley (*Hordeum leporinum* ssp. *murinum*) were partially covered by soil in these fields during a July 5, 2013 survey. Since the time the fields had last been disced (presumably late spring of 2013), weedy species such as Canada horseweed (*Conyza Canadensis*), puncture vine (*Tribulus terrestris*), Russian thistle (*Salsola tragus*), and yellow star thistle (*Centaurea solstitialis*) had become established as scattered individuals. The only native species observed along the entire alignment was a single western jimsonweed (*Datura wrightii*). Also occurring at scattered locations within the ruderal fields of the project alignment (or immediately adjacent to it) were scattered Chinaberry trees (*Melia azedarach*), Italian cypress (*Cupressus sempervirens*), and pecans (*Carya illinoinensis*).

Although these ruderal fields were highly disturbed such that they provided little vegetative cover for native terrestrial vertebrates, a number of vertebrate species were observed, and others would be expected. Amphibians would not be expected to occur within these fields, but gopher snakes would likely be present. The only avian species observed were a number of mourning doves (*Zenaida macroura*) that were foraging in the disced field. Other species likely to use these fields would include resident species such as Brewer's blackbirds (*Euphagus cyanocephalus*) and European starlings (*Sturnus vulgaris*), summer migrants such as the western kingbird (*Tyrannus verticalis*), and winter migrants such as white-crowned sparrows (*Zonotrichia leucophrys*) and savannah sparrows (*Passerculus sandwichensis*). Red-tailed hawks (*Buteo jamaicensis*) occasionally forage over ruderal fields such as these, notwithstanding their proximity to residential development. They forage for small mammals such as California voles

(*Microtus californicus*), deer mice (*Peromyscus maniculatus*), and house mice, none of which were observed during the site visit. Although their burrows were not observed, Botta's pocket gophers (*Thomomys bottae*) are generally present in such fields. California ground squirrels (*Otospermophilus beecheyi*) were relatively numerous in the field east of Peach Avenue and south of the Southern Pacific railroad tracks. They were also observed in a ruderal field west of Peach Avenue and immediately north of Jensen Avenue.

### 3.1.3 Irrigated Pasture

A small area of border-strip irrigated pasture was located immediately west of Peach Avenue and north of Jensen Avenue. The dominant plant in the pasture closest to the public road right-of-way was Bermuda grass (*Cynodon dactylon*). Native plants would be absent from the pasture. Weedy vegetation was present between Peach Avenue and the pasture. This vegetation consisted of black mustard (*Brassica nigra*), ripgut, and Canada horseweed.

The same terrestrial vertebrates using ruderal fields, which were located adjacent to this pasture, would be expected to use the pasture itself.

### 3.1.4 Irrigation Canal

The Central Canal passes under Peach Avenue just north of Church Avenue. This canal carries water primarily during the spring and summer. Significant stormwater flows in the winter are not expected. The canal is an engineered channel with a trapezoidal cross-section constructed to convey flows of irrigation water, and there is no evidence that it coincides with a historic natural creek. At the location where it passes under Peach Avenue, concrete-lined channel banks extend 22 to 41 feet up channel and much further down channel. The channel banks are concrete-lined within the entirety of the Peach Avenue project site. The channel bed consists of broken concrete and earthen material. The bed and bank of the channel supported little vegetation.

That portion of the Central Canal within the project site has little value for biological resources. Due to the concrete-lined canal banks, there is no vegetation providing cover for terrestrial vertebrates using aquatic habitat. While the presence within the canal of Pacific chorus frogs (*Pseudacris regilla*), western toads (*Anaxyrus boreas*), and occasional predators, such as valley garter snakes (*Thamnophis sirtalis*), great blue herons (*Ardea Herodias*), and great egrets (*Ardea*

*alba*) cannot be entirely discounted, the canal at the location of the Peach Avenue project provides inconsequential habitat for such species. The existing box culvert provides a structure suitable for nesting cliff swallows (*Petrochelidon pyrrhonota*), although no cliff swallows were using the box culvert at the time of the field survey, nor were mud nests observed. Cliff swallows could presumably use the box culvert for nesting in future years.

## 2.2 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or the combination of the two. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2 state and federal laws have provided the CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2013). Collectively, these plants and animals are referred to as "special status species".

No special status plant or animal species have been documented within five miles of the project site. Nonetheless, the likelihood of special status species known to occur regionally occurring within the project site itself is evaluated in Table 2. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et al. 1988-1990), *California Natural Diversity Data Base* (CDFW 2013a), *Special Animals* (CDFG 2011), *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW 2013b), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2013c), *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998), *Amphibian and Reptile Species of Special Concern in California* (CDFG 1994), *The Jepson Manual: Vascular Plants of California* (2012), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2013). The CNDDB

was used to search nine USGS 7.5 minute quadrangles in the vicinity of the project site for special status species and natural communities of special concern. These quads included *Malaga, Fresno North, Clovis, Round Mountain, Fresno South, Sanger, Caruthers, Conejo,* and *Selma*.

## TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE VICINITY OF THE PEACH AVENUE WIDENING PROJECT.

**PLANTS (adapted from CDFW 2013a, CDFW 2013b, and CNPS 2013)**

**Species Listed as Threatened or Endangered**

| Species | Status | Habitat | Occurrence in the Project Site* |
|---|---|---|---|
| Succulent Owl's Clover (Castilleja campestris ssp. succulenta) | FT, CE, CNPS 1B.2 | Vernal pools of California's Central Valley. Blooms April-May. | **Absent.** Suitable habitats in the form of vernal pools are absent from the site. |
| California Jewel-Flower (*Caulanthus californicus*) | FE, CE, CNPS 1B.1 | Non-native grassland, upper Sonoran subshrub scrub, and cismontane juniper woodland and scrub. Blooms February-May. | **Absent.** The project site is well outside of the known range (foothills along west side of San Joaquin Valley floor) for this plant. Even if once present, lands along the project site are too disturbed to support this species. |
| San Joaquin Orcutt Grass (Orcuttia inaequalis) | FT, CE, CNPS 1B.1 | Vernal pools in California's Central Valley. Requires deep pools with prolonged periods of inundation. Blooms April-September. | **Absent.** Vernal pools are absent from the project site. |
| Hairy Orcutt Grass (Orcuttia pilosa) | FE, CE, CNPS 1B.1 | Occurs in vernal pools. Endemic to the Sacramento Valley. Blooms May-September. | **Absent.** Suitable habitats in the form of vernal pools are absent from the site. |
| Greene's Tuctoria (*Tuctoria greenei*) | FT, CR, CNPS 1B.1 | Vernal pools of California's Central Valley. Requires deep pools with prolonged periods of inundation. Blooms May-September. | **Absent.** Vernal pools are not present in the project site. This species was once observed near the intersection of Belmont Ave. and Academy. This population is presumed extirpated (CDFW 2013). |
| Hartweg's Golden Sunburst (*Pseudobahia bahiifolia*) | FE, CE, CNPS 1B.1 | Occurs in grasslands of the western foothills of the Sierra Nevada in pumice soils of the Rocklin series. Blooms March-April | **Absent.** The soils in which this species occurs are absent from the project site. |
| San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*) | FT, CE, CNPS 1B.1 | Occurs in grasslands of the western foothills of the Sierra Nevada in heavy clay soils of the Porterville, Cibo, Mt. Olive and Centerville series. Blooms March-April | **Absent.** Clay soils suitable for this species are absent from the project site. |

**CNPS LISTED PLANTS**

| | | | |
|---|---|---|---|
| Spiny-sepaled Button Celery (Eryngium spinosepalum) | CNPS 1B.2 | Vernal pools of California's Central Valley. Blooms April-May | **Absent.** Vernal pools are absent from the project site. |
| Forked Hare-Leaf (*Lagophylla dichotoma*) | CNPS 1B.1 | Valley grassland and foothill woodland. Blooms April-June. | **Absent.** Suitable habitats in the form of non-native grassland and oak savannah are absent from the site. |
| Madera Leptosiphon (*Leptosiphon serrulatus*) | CNPS 1B.2 | Occurs in non-native grasslands and oak savannah of California's Central Valley. Blooms April-May. | **Absent.** Suitable habitats in the form of non-native grassland and oak savannah are absent from the site. |
| Sanford's Arrowhead (*Sagittaria sanfordii*) | CNPS 1B.2 | Occurs in marshes and swamps. Blooms May-October. | **Absent.** Suitable habitat for this species does not occur on-site. |

## TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE VICINITY OF THE PEACH AVENUE WIDENING PROJECT.

**ANIMALS (adapted from CDFW 2013a, CDFW 2013c, CDFG 2011, and Zeiner et al. 1988-1990)**

**Species Listed as State or Federally Threatened or Endangered**

| Species | Status | Habitat | Occurrence in the Project Site* |
|---|---|---|---|
| Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) | FT | Found in vernal pools of California's Central Valley. | **Absent.** Vernal pools required by this species are absent from the project site. |
| Vernal Pool Tadpole Shrimp (*Lepidurus packardi*) | FE | Found in deep vernal pools of California. | **Absent.** Vernal pools required by this species are absent from the project site. |
| Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) | FT | Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills. | **Absent.** Elderberry plants do not occur within or adjacent to the project site. |
| California Tiger Salamander (*Ambystoma californiense*) | FT, CT | Requires vernal pools for breeding and rodent burrows in annual grasslands for refuge. | **Absent.** Breeding habitat was absent within the project site and adjacent lands. Aestivation habitat in the form of rodent burrows was very limited. |
| California Red-legged Frog (*Rana aurora draytonii*) | FT, CSC | Perennial rivers, creeks and stock ponds of the Coast Range and northern Sierra foothills with overhanging vegetation. | **Absent.** Habitat for this species is absent. In addition, the site is outside of the current known range of the red-legged frog. |
| Swainson's Hawk (*Buteo swainsoni*) | CT | Uncommon resident and migrant in the Central Valley. Forages in grasslands and fields close to riparian areas. | **Unlikely.** Nesting opportunities are generally limited to trees within residential habitat of the site with a few trees within ruderal fields. Riparian areas are absent from the project site and vicinity. |
| Peregrine Falcon - nesting (*Falco peregrinus*) | CP | Individuals breed on cliffs in the Sierra Nevada or in coastal habitats; occurs in many habitats of the state during migration and winter. | **Absent.** Suitable foraging and breeding habitat are absent. Transients and migrants could pass over the site during migration. |
| Willow Flycatcher - nesting (*Empidonax traillii*) | CE | Breeds in willow thickets found in montane meadows of the Sierra Nevada. | **Absent.** This species would at most pass through the region during migration. The site provides limited vegetative cover for birds moving through the area. |
| Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) | FC, CE | Frequents valley foothill and desert riparian habitats in scattered locations in California | **Absent.** The project site provides no breeding or foraging habitat for this species. This species appears to have been extirpated from the project vicinity. |
| Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*) | FE, CE | Frequents alkali scrub and herbaceous habitats with scattered shrubs in the southwestern San Joaquin Valley. | **Absent.** Suitable breeding and foraging habitat is absent from the project site. Habitats of the project site are highly disturbed and entirely isolated from the current range of this species. |
| San Joaquin Kit Fox (*Vulpes macrotis mutica*) | FE, CT | Frequents desert alkali scrub, annual grasslands and may forage in adjacent agricultural habitats. | **Absent.** The project site provides no suitable breeding or foraging habitat for this species. The site is isolated from any potentially suitable habitat by urban development in all directions. |

## TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE VICINITY OF THE PEACH AVENUE WIDENING PROJECT.

**ANIMALS (adapted from CDFW 2013a, CDFG 2011, and Zeiner et al. 1988-1990)**

**State and Federal Species of Special Concern**

| Species | Status | Habitat | Occurrence in the Project Site* |
|---|---|---|---|
| Foothill Yellow-legged Frog (*Rana boylii*) | CSC | Frequents partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. | **Absent.** The project site and adjacent habitats provide no breeding or foraging habitat for this species. |
| Western Spadefoot Toad (*Scaphoipus hammondii*) | CSC | Frequents annual grasslands and foothill hardwood woodlands; requires vernal pools or other temporary wetlands for breeding. | **Absent.** No vernal pools or temporary wetlands were present in the project site and adjacent habitats. |
| Western Pond Turtle (*Emmys marmorata*) | CSC | Frequents suitable aquatic habitats throughout California. | **Absent.** The Central Canal that passes through the site has steep banks and limited vegetation, thus providing unsuitable habitat for this species. |
| Coast Horned Lizard (*Phrynosoma blainvillii*) | CSC | Frequents sandy washes with scattered shrubs, grasslands, scrublands, and oak woodlands of Central California. | **Absent.** The project site provides unsuitable habitat for this species due to the effects of annual disking and surrounding development. |
| Golden Eagle – nesting and wintering (*Aquila chrysaetos*) | CP | Frequents rolling foothills, mountain areas, sage-juniper flats and desert habitats; requires cliffs or large trees for nesting. | **Absent.** Nesting habitat is absent. This somewhat reclusive species would not forage within vacant lands of an urban environment. |
| Northern Harrier - nesting (*Circus cyaneus*) | CSC | Frequents, grasslands, open rangelands, freshwater and emergent wetlands. | **Absent.** Nesting habitat is absent. It is extremely unlikely that this species would forage over disced fields in an urban environment. |
| Burrowing Owl (Athene cunicularia) | CSC | Frequents open, dry grasslands, deserts and ruderal areas; requires rodent burrows for nesting and roosting cover. | **Possible.** California ground squirrel inhabit ruderal fields of the site, and thus provide suitable nest burrows for this species. |
| Long-eared Owl - nesting (*Asio otus*) | CSC | Frequents riparian woodlands and forests of California. | **Absent.** Habitat suitable for this species is absent. |
| Short-eared Owl - nesting (*Asio flammeus*) | CSC | Frequents marshes, grasslands, irrigated lands, dunes and other treeless habitats of the Central Valley and western Sierra Nevada foothills. | **Absent.** Nesting habitat is absent. It is extremely unlikely that this species would forage over disced fields in an urban environment. |
| Loggerhead Shrike - nesting (*Lanius iudovicianus*) | CSC | Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland. | **Possible.** The project site provides potential foraging habitat. Several trees within ruderal fields provide roosting and possible nesting habitat. |
| Tri-colored Blackbird (*Agelaius tricolor*) | CSC | Frequents grassland and cropland habitats; requires proximity to fresh water and emergent wetland vegetation with dense cattails and thickets of willow for nesting. | **Unlikely.** Breeding habitat is absent. The site is unlikely to be used for foraging by this species given its isolation, surrounding development, and distance from potential nesting habitat. |
| Townsend's Big-eared Bat (*Corynorhinus townsendii*) | CSC | Frequents all but subalpine and alpine habitats; requires buildings, mines, caves or tunnels for roosting and nesting. | **Possible.** The project site provides suitable foraging habitat for this species. Possible roosting and breeding habitat is absent from the site. |

## TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE VICINITY OF THE PEACH AVENUE WIDENING PROJECT.

**ANIMALS (adapted from CDFW 2013a, CDFG 2011, and Zeiner et al. 1988-1990)**

**State and Federal Species of Special Concern - continued**

| Species | Status | Habitat | Occurrence in the Project Site* |
|---|---|---|---|
| Pallid Bat (*Antrozous pallidus*) | CSC | Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas providing roosting opportunities. | **Possible.** The project site provides suitable foraging habitat; roosting and breeding habitat is absent. |
| Spotted Bat (*Euderma maculatum*) | CSC | Found in a variety of habitats from arid desert and grassland to mixed conifer forest. | **Unlikely.** The Site provides suitable foraging habitat, but this species is more frequently encountered high in the Sierra, or in habitats east of the Sierra. |
| Western Mastiff Bat (*Eumops perotis*) | CSC | Occurs in a variety of habitats from woodlands to grasslands along central and southern coast and the Central Valley. | **Possible.** The project site provides suitable foraging habitat. Rocky escarpments suitable for roosting and breeding are absent from the site and vicinity. |
| American Badger (*Taxidea taxus*) | CSC | This species inhabits open and dry sections of grasslands, shrub, and forest habitats with friable soil. | **Absent.** The site is highly disturbed and isolated from potential habitat and badger dens were not observed on the project site. |

***OCCURRENCE EXPLANATIONS**

Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

**STATUS CODES**

Federal Listing

| | |
|---|---|
| FE | Federally Endangered |
| FT | Federally Threatened |
| FPE | Federally Endangered (Proposed) |
| FC | Federal Candidate |
| FP | Federal Protected |

California Listing

| | |
|---|---|
| CE | California Endangered |
| CT | California Threatened |
| CR | California Rare |
| CP | California Protected |
| CSC | California Species of Special Concern |

CNPS Listing

| | |
|---|---|
| 1A | Plants Presumed Extinct in California |
| 1B | Plants Rare, Threatened, or Endangered in California and Elsewhere |

CNPS Threat Ranks

| | |
|---|---|
| 0.1 | Seriously Threatened in California |
| 0.2 | Fairly Threatened in California |
| 0.3 | Not Very Threatened in California |

## 2.3 JURISDICTIONAL WATERS

Jurisdictional waters include navigable rivers, creeks, drainages and their tributaries having a defined bed and bank, as well as lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the USACE, CDFW and the Regional Water Quality Control Board (RWQCB) (see Section 3.2.4 of this report for additional information).

Live Oak Associates, Inc. surveyed the project site for likely jurisdictional waters during the July 2013 survey. The only hydrologic feature within the project site is the Central Canal, which passes underneath Peach Avenue just north of Church Avenue. This canal is an engineered irrigation canal that does not replace a natural drainage (i.e., creek), nor does it connect downstream with any natural drainage that may be considered a water of the U.S. Therefore, the Central Canal itself would not be considered a water of the U.S. The CDFW has not required notification or a Streambed Alteration Agreement for alterations made to man-made irrigation canals. The RWQCB has, however, asserted jurisdiction over all surface waters of the state, including irrigation infrastructure (Dale Harvey, RWQCB, personal communication).

## 2.4 CRITICAL HABITAT

Critical habitat as defined by the federal Endangered Species Act consists of areas of habitat that are crucial to the survival of a species and essential for its conservation. These areas are formally designated by the USFWS as critical habitat by rule published in the Federal Register. Projects proposed within formally designated critical habitat must provide mitigation in support of the recovery of the species (so that it may eventually be de-listed). Thus, the mitigation standard for projects within critical habitat has typically been greater than for projects outside of critical habitat.

The project site lies outside of designated critical habitat for all federally listed species.

## 2.5 NATURAL COMMUNITIES OF SPECIAL CONCERN

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, home to special-status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of natural communities of special

concern in the vicinity of the project site would include northern hardpan vernal pool (CDFW 2013).

Natural communities of special concern are absent from the project site.

## 2.6 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal of young, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines.

Tracts of homes and urban streets isolate the project site from natural lands located outside the City of Fresno. Thus, no portion of the project site would function as a wildlife movement corridor.

# 3.0 IMPACTS AND MITIGATIONS

## 3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. For purposes of CEQA "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site; reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan (Remy et al. 1999).

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a "mandatory findings of significance" if "the project has the potential to subsequently degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

## 3.2 RELEVANT GOALS, POLICIES, AND LAWS

### 3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the CDFW and USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the CNPS are collectively referred to as "species of special status". Permits may be required from the CDFW and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. The agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

### 3.2.2 Migratory Birds

State and federal law also protect most bird species (i.e., songbirds, shorebirds, raptors, waterbirds, etc.). The California Fish and Game Code (Sections 3511 and 3513) and Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory and protected birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and

bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort would be considered a significant affect under CEQA and NEPA.

### 3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, (1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

### 3.2.4 Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the United States Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations, but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands

isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in the consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court has ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water.

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act (Wetland Training Institute, Inc. 1991). The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All Projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1603 of the California Fish and Game Code (CDFG 1995). Activities that would disturb these drainages are regulated by the CDFW

via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

### 3.2.5 Fresno City General Plan: Natural Resource Conservation Element

The Natural Resource Conservation Element of the 2025 Fresno City General Plan addresses, among other topics, native plants and wildlife. It states the following:

> Central California is a unique biological enclave, with a rich diversity of flora and fauna. The region's climate, soils, hydrology, and geographic isolation fostered resident species found nowhere else on earth and significant populations of more widely distributed species. Through agricultural, rural residential, and urban development, these species and their habitats are being diminished and marginalized. Native plants and wildlife should be protected to preserve ecological balance in the region, to help forestall or prevent further establishment of harmful exotic weeds and pests, to preserve their unique genetic capabilities, and to provide wildlife viewing and related recreational opportunities. In conjunction with the Urban Form and Open Space/Recreation Elements, and the Mineral Resources section of this Resource Conservation Element, this section of the 2025 General Plan provides policy direction to safeguard areas where these species can be preserved and enhanced.

In support of the above topic, the Natural Resource Conservation Element has established the following goals and objectives:

> **Goal 11:** Protect, preserve, and enhance significant biological, archaeological, and paleontological resources and critical natural resources including, but not limited to, air, water, agricultural soils, mineral, plant, and wildlife resources.

In support of Goal 11, the Natural Resource Conservation Element includes the following objectives and policies under the heading of "Native Plants and Wildlife":

> **G-12. Objective:** To provide for long-term preservation, enhancement, and enjoyment of plant, wildlife, and aquatic habitat resources in the Fresno area by protecting, improving, and restoring these resources.
>
> **G-12-a. Policy:** Support state, federal and local programs to acquire significant habitat areas in and near Fresno for permanent protection and/or conjunctive educational and recreational use.
>
> **G-12-b. Policy:** The City of Fresno will participate in cooperative, multi-jurisdictional approaches (involving the Counties of Fresno and Madera, the City of Clovis, the San Joaquin River Conservancy, the Metropolitan Flood Control District, and other agencies and organizations) for area-wide habitat conservation plans to preserve and protect rare, threatened, and endangered species that could be adversely affected by continued population growth and development.

**G-12-c. Policy:** In development projects, consider the incorporation of natural features (such as ponds to be designed and managed for habitat values, or hedgerows and wooded strips) such that these features can serve as a buffer for adjacent natural areas and/or an enhancement to the ecological values of Fresno.

**G-12-d. Policy:** Projects that could adversely affect rare, threatened, or endangered wildlife and vegetative species (or may have impacts on wildlife, fish, and vegetation restoration programs) may be approved only when findings are made by the California Department of Fish and Game (and the U.S. Fish and Wildlife Service, as appropriate) that adequate mitigation measures are incorporated in the project's design.

**G-12-e. Policy:** Open Space land use designations, appropriate zoning, setbacks, and conservation easements will be used to preserve areas identified as sensitive or critical habitat for rare, threatened, or endangered vegetation and wildlife species, with particular attention paid to the North and Southeast Growth Areas and to the preparation of the required community and/or specific plans for these expansion areas of the proposed 2025 Fresno General Plan.

**G-12-f. Policy:** If the California Department of Fish and Game or federal conservation agencies require habitat replacement as a condition of, or mitigation for, any development project in Fresno's planning area, such replacement or mitigation habitat should be located, if possible, within or near the Fresno-Clovis Metropolitan Area.

**G-12-g. Policy:** Mitigation programs involving restoration of natural habitats shall include measures needed to create functional, sustainable wildlife habitat. Specific components of these programs will include:

- an evaluation of the site's pre-project environmental setting and the proposed design and operating parameters of the mitigation measures, to be evaluated in the project's CEQA/NEPA environmental review processes.
- A graphic depiction of land to be acquired or set aside for mitigation activities.
- Permitting required by local, state and federal agencies for the project.
- Mitigation site preparation plans.
- Specification of the types and sources of plant material used for any revegetation.
- Water supply and distribution for plants and wildlife.
- Post-planting maintenance and other operational measures to ensure successful mitigation.
- Monitoring at an appropriate frequency by qualified personnel and reporting of data collected during monitoring to permitting agencies.

**G-12-h. Policy:** Establish, in consultation with appropriate public agencies with special expertise, development and operational standards that may be needed to supplement existing law and regulations to avoid or reduce any adverse impacts of development adjacent to important habitat areas. Standards could include such measures as controls on noise and glare, or restrictions on disturbance of vegetated areas.

**G-12-i. Policy:** For drainage and flood detention basins in agricultural or industrial areas, and for those basins where design or other factors preclude developed recreational uses, Fresno Metropolitan Flood Control District and the City of Fresno will consider development of public or private fisheries and habitat areas for native plants and wildlife, in consultation with the state Department of Fish and Game.

**G-12-j. Policy:** Where appropriate in flood zones along water courses and flood detention basins, pursue development of conjunctive habitat and recreational trail uses in flood control and drainage projects.

**G-12-k. Policy:** Encourage property owners to reestablish, maintain, and protect continuous wildlife corridors along riparian areas, by use of building setbacks and the planting of suitable native vegetation along the riverbanks and bluffs, streambanks, drainage or irrigation ditches, and, where appropriate, fence lines.

**G-12-l. Policy:** Coordinate habitat restoration programs with federal, state, and local flood control and natural resource agencies, to achieve useful restoration and take advantage of the opportunity for a coordinated regional mitigation program, while avoiding flood control problems and the undesirable introduction of non-native plant and animal species.

**G-13. Objective:** Maintain and restore, where feasible, the ecological values of the San Joaquin River corridor, because (1) this area is Fresno's main scenic feature and natural area; (2) it is important for maintenance of good-quality water resources in the region; and (3) it constitutes unique, irreplaceable habitat for valley native species.

**G-13-a. Policy:** Adopted plans, cods/ordinances, regulations, and policies of the city will continue to indicate strong concern for, and protection of, the San Joaquin River bluffs and the riverbottom, to promote Fresno's scenic amenities and protect the river's water quality, fisheries, and associated riparian environment.

**G-13-b. Policy:** Support Fresno County General Plan policies which promote the preservation and enhancement of natural resources in Fresno County's river influence areas.

**G-13-c. Policy:** Apply, and continue to honor, the open space land use designation in the entire San Joaquin riverbottom and bluffs when considering land use decisions in the vicinity of the river. Ensure that development projects in the vicinity of the river corridor protect and compliment its habitats and natural settings, including development within the proposed North Growth Area of the 2025 Fresno General Plan.

**G-13-d. Policy:** Implement the multi-use open space land use designation through the following actions:

- Apply "O"/Open Conservation District or "AE-20"/Exclusive Twenty-Acre Agricultural District zoning when land use plans, rezoning and annexations are proposed for land on the San Joaquin River bluffs and riverbottom.
- Continue to prohibit new residential land use entitlements (zoning, special permits, and subdivisions) in the riverbottom, pursuant to the multi-use open space land use designation and zoning districts adopted for the area.

- Require a finding of plan consistency for all land use entitlements (including land divisions and all types of special permits) and all infrastructure projects in the river corridor.
- Prohibit the location of any solid waste facilities of any type (including transfer and waste material recovery stations) in the riverbottom.
- Adjacent to the river corridor, incorporate natural topography with respect to the design and siting of all physical improvements, in order to minimize grading and disturbances of the viewshed.
- Complete studies addressing the limitations of the area's biotic community and hydrologic status prior to the approval of any project which involves land in, or immediately abutting, the San Joaquin riverbottom.
- Carefully plan and regulate outdoor lighting visible in, and from, the river corridor. In instances where such lighting is necessary, it shall be of the lowest feasible intensity and directed away from, or shielded from, the reserve or corridor. Adverse impacts of lighting will be further mitigated by planting tall vegetation for screening between light sources and wildlife corridors/reserves.

**G-13-e. Policy:** Support efforts to identify and mitigate cumulative adverse effects on aquatic life from stormwater discharge to the San Joaquin River.

- Discharge of runoff from industrial and commercial land uses to the san Joaquin River or other riparian corridors shall be avoided.
- Development entitlements for sites which have drainage (directly or indirectly) to the San Joaquin river or other riparian areas shall be conditioned upon adequate measures for preventing pollution of natural bodies of water from their runoff.
- Water quality and sediments shall be frequently monitored near drainage outfalls to riparian areas.
- If unacceptable levels of contaminant(s) occur, remedial measures shall be promptly instituted.

**G-14. Objective:** Support the San Joaquin River Conservancy in its efforts to develop a river parkway that strikes an appropriate balance between facilitating recreational pursuits; protecting water resources; meeting economic and development needs through sand and gravel production; and long-term preservation, enhancement, and public enjoyment of the river's unique and irreplaceable plant, wildlife, and aquatic resources.

**G-14-a. Policy:** Encourage natural reserve areas and a wildlife corridor in the riverbottom to protect, enhance, and restore riparian and aquatic habitats, adjacent wetlands, and upland areas integral to the life cycle of river wildlife.

**G-14-b. Policy:** Natural reserves and wildlife corridors need to be acquired and expanded through purchase, easements, mitigation for proposed activities, or other mutually satisfactory transactions.

**G-14-c. Policy:** Natural reserves should be sited where highest-quality habitat exists adjoining the river's wildlife corridor and in such other locations where endangered, threatened, or rare species are established or are being reestablished.

**G-14-d. Policy:** The San Joaquin River's wildlife corridor is to provide continuous land and water areas parallel to the river.

- A minimum width of 200 feet of riparian vegetation should be preserve on both sides of the river. The corridor should be wider when possible and/or necessary to protect additional areas of native plants and critical habitat (such as wildlife breeding areas). In areas where 200 feet of riparian vegetation no longer exists along the river bank, a 200-foot or wider band of native plants is recommended to be reestablished, to the maximum extent feasible from topologic and hydrologic standpoints. Consider exceptions where the minimum-width corridor is infeasible due to topography, hydrology, or other constraints. In those instances, and offsetting expansion is recommended on the opposite side of the river. Where steep bluffs drop directly into or close to the river, incoproate the bluff face into the wildlife corridor.

**G-14-e. Policy:** Routine monitoring shall be done to determine the status of conditions and mitigation measures required for projects within, and in the vicinity of, the river corridor.

- A memorandum of understanding or other agreement should be implemented so that the San Joaquin River Conservancy can perform, or participate in, this monitoring program in order to furnish additional expertise, provide for cost efficiency, and to ensure consistency throughout the river corridor.
- Based on information obtained from monitoring, modifications in special permits, reclamation plans, and other documents, operating parameters for uses may be necessary to insure human health and safety and the well-being of riparian plants and wildlife.

**G-14-f. Policy:** As specified in the San Joaquin River Parkway Master Plan and EIR (1997), natural reserve areas and the wildlife corridor areas would be protected whenever more intensive human uses exist or are proposed on adjacent lands. Buffer zones would allow multiple uses on parts of the parkway while still protecting wildlife and native plants.

- Any studies done to determine appropriate buffer widths, along with the conclusions and recommendations drawn from the studies, shall be performed by, or be reviewed and approved by, state and federal wildlife agencies before variances from standard buffer zone widths can be granted.
- The vegetation and permitted uses of the buffer zones need to be tailored to the adjacent habitat it is designed to protect. Natural riparian buffer zones should be maintained, rehabilitated, or reestablished with appropriate native plants (seed material and cuttings locally derived).
- Open space uses such as pasture, low-intensity agricultural activities, and the "rough" or marginal areas of golf courses, may be incorporated into buffer zones when they constitute an improvement in habitat over a previous use or degraded area. However, the potential impacts of construction, cultural, and operational practices (such as grading, number of livestock per acre, lighting, and use of pesticides, herbicides, and fertilizers) need to be thoroughly evaluated and addressed before these uses can be used for buffering.

## 3.3 PROJECT IMPACTS

As described in Section 1.0 of this report the proposed action is the widening of Peach Avenue in the City of Fresno, California, between its intersections with Butler Avenue on the north and East Drummond Avenue on the south. For the purposes of this analysis, it has been assumed that existing habitats observed on the site will be entirely replaced with development.

***Potentially Significant Adverse Environmental Impacts***

### 3.3.1 Disturbance to Active Raptor and Other Migratory Birds During the Nesting Season from Construction Activities

**Impact.** The native and ornamental trees observed along the length of the site may be used by raptors, loggerhead shrikes, and various migratory bird species for nesting from approximately February 1st to August 31st. Construction activities during the nesting period may destroy active nests or result in nest abandonment by adult birds, thus resulting in mortality of nestlings. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a violation of the federal Migratory Bird Treaty Act and would constitute a potentially significant adverse environmental effect of the project.

**Mitigation.** Depending on the construction schedule, the project would result in potentially significant adverse environmental effect on nesting raptors and migratory birds. The project will implement the following mitigation measures in order to minimize impacts to nesting birds to a less than significant level.

> ***Mitigation Measure 3.3.1a: Construction Outside of the Nesting Season.*** The project shall initiate project construction outside of the nesting season. This work will include the removal of all potential nest trees that must be removed for project construction between September 1st and January 31st (outside of the nesting season).
>
> ***Mitigation Measure 3.3.1b: Pre-construction Surveys.*** If tree removal, brushing, grading, or construction must occur between the months of February and August, a qualified biologist will conduct pre-construction surveys for active nests within 30 days of the onset of these activities or after a break of more than 30 days. Surveys for burrowing owls will be in conformance with *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

***Mitigation Measure 3.3.1.c: Avoidance and Minimization Measures.*** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of mitigation measures 3.3.1a through 3.3.1c will mitigate potential project impacts to nesting raptors and migratory birds to a less than significant level.

***Less Than Significant Project Impacts***

### 3.3.2 Project Impact to Special Status Plant Species

**Impact.** Eleven special status vascular plant species are known to occur in the general project vicinity in Fresno County (Table 2). The project site provides no habitat for any of these species. Therefore, site development would have no effect on regional populations of these eleven species.

**Mitigation.** No special status plant species occur on site. Mitigation measures are not warranted.

### 3.3.3 Project Impact to Special Status Animal Species

**Impact.** Twenty-seven special status animal species occur regionally (see Table 2). Possible impact to regional populations of these species from eventual site development is discussed below:

Species Absent From the Site, or Unlikely to Occur There. Twenty-three special status animal species would not occur or would be unlikely to occur on the project site due to the absence of suitable habitat. There are no state or federally listed threatened or endangered species that would occur on the site. For example, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetles, California tiger salamanders, etc. would not occur on the site due to an absence of suitable habitat. Eventual site development would have no effect on these 23 species, because there is little or no likelihood that they are present.

Species That May Forage on the Site. Three special status bat species potentially breed or roost in habitats of nearby parcels and forage over the project site from time to time. Breeding/roosting habitat for these species is either not present on the site, or is of marginal

suitability. The site does not provide regionally important foraging habitat for any of these species. Proposed widening of Peach Avenue will result in at most the loss of a minor amount of foraging habitat for these species. This impact is considered to be less than significant.

Species that May Breed on the Site. As discussed under "Potentially Significant Project Impacts/Mitigation", the project site provides potential breeding habitat for at most two special status bird species, the western burrowing owl and loggerhead shrike. The proposed project will have no effect on breeding habitat used by other special status species known to occur, or have once occurred, in the site vicinity, because such habitat is absent from the site.

**Mitigation.** Site development will result in no impact or less than significant impact on special status animal species, with the possible exception of the loggerhead shrike. Therefore, mitigation measures in addition to those proposed for the loggerhead shrike are not warranted.

### 3.3.4 Project Impact to Riparian Habitat or Other Sensitive Natural Communities

**Impact.** Riparian habitat and other sensitive natural communities identified in local and regional plans, policies, regulations, or by state and federal agencies are not present on the project site. Therefore, the project would have no effect on riparian habitat or such communities.

**Mitigation.** Because the project will have no effect on sensitive natural communities of any kind, mitigation measures are not warranted.

### 3.3.5 Project Impact to Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act

**Impact.** Waters of the United States, including wetlands, are absent from the project site. Site development would have no effect on on-site jurisdictional waters subject to provisions of Section 404 of the Clean Water Act.

**Mitigation.** Because the project will have no effect on on-site jurisdictional waters, mitigation measures are not considered warranted.

### 3.3.6 Project Impact to Wildlife Movement Corridors

**Impact.** The site is surrounded by developed or highly disturbed lands and therefore would not constitute a "movement corridor" for native wildlife, although some species move within it and

through it. Site development will have an adverse effect on home range and dispersal movements of terrestrial vertebrate species currently using the site. Many migratory species that pass through the project site are neo-tropical migrant birds that are likely to pass through and over the site even when it is eventually developed. Therefore, this project will result in a less than significant effect on regional wildlife movements.

**Mitigation.** Because this project will result in a less than significant effect on regional wildlife movements, mitigation measures are not considered warranted.

### 3.3.7 Project Impact to Fish and Wildlife Habitat

**Impact.** Site development would eliminate highly disturbed fallow agricultural land as habitat for some wildlife species now occurring there. As noted above, this habitat is not of significant importance to regional wildlife populations. Because the loss of wildlife habitat associated with site development would not be substantial, project impact to such habitat is considered less than significant.

**Mitigation.** Because this project will by itself have a less than significant effect on habitat for native wildlife occurring in this portion of Fresno County, mitigation measures are not considered warranted.

### 3.3.8 Project Conflict with Local Policies or Ordinances Protecting Resources

**Impact.** The 2025 Fresno General Plan, Resource Conservation Element addresses generally the conservation of native plant and animal resources, and specifically the natural resource values of the San Joaquin River corridor. With the possible exception of nesting birds, the Peach Avenue widening project will have no impact on natural habitats occupied by native plant live or significant populations of terrestrial vertebrates once native to the Fresno area. Due to the general absence of the natural resources addressed by the Resource Conservation Element of the 2025 Fresno General Plan, the project will have no impact on such resources, and will therefore be consistent with its provisions.

**Mitigation.** Because this project will be consistent with the General Plan Policies of the City of Fresno that are relevant to natural resource protection, mitigation measures further protecting those biological resources present within the project site are not considered warranted.

### 3.3.9 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

**Impact.** Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks to be deposited in creek beds and adjacent wetlands. The project site is, however, nearly level. The soils are not considered erodable (NRCS 1971). Therefore, the potential for erosion and the degradation of water quality in local creeks is negligible.

**Mitigation.** Measures to mitigate impacts to water quality in local creeks from erosion would not be necessary, especially if most construction work occurs during the summer and fall. The applicant should be aware, however, that projects involving the grading of large tracts of land must be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board, which require an erosion control plan and the use of Best Management Practices.

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## APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

**APPENDIX A**
**VASCULAR PLANTS OF THE**
**PEACH AVENUE WIDENING PROJECT SITE**

The plant species listed below were observed on the Peach Avenue Widening Project Site during field surveys conducted on July 5, 2013. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

**OBL** - Obligate
**FACW** - Facultative Wetland
**FAC** - Facultative
**FACU** - Facultative Upland
**UPL** - Upland
+/- - Higher/lower end of category
**NR** - No review
**NA** - No agreement
**NI** - No investigation

| | | |
|---|---|---|
| **ANACARDIACEAE – Sumac Family** | | |
| *Pistachia chinense* - | Chinese Pistachio | UPL |
| **APOCYNACEAE – Dogbane Family** | | |
| *Nerium oleander* | Oleander | UPL |
| **ASTERACEAE - Sunflower Family** | | |
| *Centauria solstitialis* | Yellow Star Thistle | UPL |
| *Conyza Canadensis* | Canada Horseweed | FAC |
| *Helianthus annuus* | Annual Sunflower | FACU |
| *Heterotheca grandiflora* | Telegraph Weed | UPL |
| *Lactuca serriola* | Prickly Lettuce | UPL |
| *Sonchus oleraceus* | Sow Thistle | NI |
| **BIGNONIACEAE – Bignonia Family** | | |
| *Chilopsis linearis* | Desert Willow | UPL |
| **BORAGINACEAE – Borage Family** | | |
| *Amsinckia menziesii* var. *intermedia* | Common Fiddleneck | UPL |
| **BRASSICACEAE - Mustard Family** | | |
| *Brassica nigra* | Black Mustard | UPL |
| *Hirschfeldia incana* | Mustard | UPL |
| **CHENOPODIACEAE – Goosefoot Family** | | |
| *Salsola tragus* | Russian Thistle | FACU |
| **CUPRESSACEAE – Cypress Family** | | |
| *Cupressus sempervirens* | Italian Cypress | UPL |
| **FABACEAE - Pea Family** | | |
| *Medicago polymorpha* | Bur Clover | UPL |
| **GERANEACEAE - Geranium Family** | | |
| *Erodium cicutarium* | Filaree | UPL |
| *Erodium moschatum* | Red-stemmed Filaree | UPL |
| **GINGKOACEAE – Gingko Family** | | |
| *Gingko bioloba* | Gingko | UPL |
| **LAURACEAE – Laurel Family** | | |
| *Cinnamomum camphora* | Camphor Tree | UPL |

| | | |
|---|---|---|
| **MELIACEAE – Mahogany Family** | | |
| *Melia azerdarach* | Chinaberry Tree | UPL |
| **MYRTACEAE – Myrtle Family** | | |
| *Eucalyptus rostrata* | Red Gum | UPL |
| **OLEACEAE- Olive Family** | | |
| *Olea europaea* | European Olive | UPL |
| **PALMACEAE – Palm Family** | | |
| *Washingtonia robusta* | Mexican Fan Palm | UPL |
| **PINANCEAE – Pine Family** | | |
| *Pinus canariensis* | Canary Island Pine | UPL |
| **PLANTAGINACEAE – Plantain Family** | | |
| *Plantago lanceolata* | English Plantain | FAC |
| **POACEAE - Grass Family** | | |
| *Avena fatua* | Wild Oats | UPL |
| *Bromus diandrus* | Ripgut | UPL |
| *Bromus hordeaceous* | Soft Chess | FACU- |
| *Cynodon dactylon* | Bermuda Grass | FACU |
| *Hordeum murinum* ssp. *leporinum* | Barnyard Barley | NI |
| *Lolium multiflorum* | Italian Ryegrass | UPL |
| *Vulpia myuros* ssp. *hirsuta* | Rattail Fescue | FACU |
| **ROSACEAE – Rose Family** | | |
| *Pyrus calleryana* | Bradford Pear | UPL |
| **SOLANACEAE – Nightshade Family** | | |
| *Datura wrightii* | Western Jimsonweed | UPL |
| **ZYGOPHYLLACEAE – Caltrop Family** | | |
| *Tribulus terrestris* | Puncture Vine | UPL |

## APPENDIX B: TERRESTRIAL VERTEBRATE OF THE PROJECT SITE

## APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PEACH AVENUE WIDENING PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the site on July 5, 2013 have been noted with an asterisk.

**CLASS: AMPHIBIA**
**ORDER: SALIENTIA (Frogs and Toads)**
**FAMILY: BUFONIDAE (True Toads)**
Western Toad (*Bufo boreas*)
**FAMILY: HYLIDAE (Treefrogs and Relatives)**
Pacific Chorus Frog (*Pseudacris regilla*)

**CLASS: REPTILIA**
**ORDER: SQUAMATA (Lizards and Snakes)**
**SUBORDER: SAURIA (Lizards)**
**FAMILY: PHRYNOSOMATIDAE**
Western Fence Lizard (*Sceloporus occidentalis*)
**FAMILY: SCINCIDAE (Skinks)**
Gilbert Skink (*Eumeces gilberti*)
**FAMILY: ANGUIDAE (Alligator Lizards and Relatives)**
Southern Alligator Lizard (*Gerrhonotus multicarinatus*)
**SUBORDER: SERPENTES (Snakes)**
**FAMILY: COLUBRIDAE (Colubrids)**
Gopher Snake (*Pituophis melanoleucus*)
Common Garter Snake (*Thamnophis sirtalis*)

**CLASS: AVES**
**ORDER: CICONIIFORMES (Herons, Storcks, Ibises and Relatives)**
**FAMILY: CATHARTIDAE (New World Vultures)**
Turkey Vulture (*Cathartes aura*)
**ORDER: FALCONIFORMES (Vultures, Hawks and Falcons)**
**FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures and Harriers)**
White-tailed Kite (*Elanus caeruleus*)
Sharp-shinned Hawk (*Accipiter striatus*)
Red-tailed Hawk (*Buteo jamaicensis*)
**FAMILY: FALCONIDAE (Caracaras and Falcons)**
American Kestrel (*Falco sparverius*)
**ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)**
**FAMILY: CHARADRIIDAE (Plovers and relatives)**
Killdeer (*Charadrius vociferus*)
**FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)**
Ring-billed Gull (*Larus delawarensis*)
California Gull (*Larus californicus*)
**ORDER: COLUMBIFORMES (Pigeons and Doves)**
**FAMILY: COLUMBIDAE (Pigeons and Doves)**
Rock Dove (*Columba livia*)
*Mourning Dove (*Zenaida macroura*)

**ORDER: STRIGIFORMES (Owls)**
**FAMILY: TYTONIDAE (Barn Owls)**
Barn Owl (*Tyto alba*)
**FAMILY: STRIGIDAE (Typical Owls)**
Western Screech Owl (*Otus kennicottii*)
Great Horned Owl (*Bubo virginianus*)
**ORDER: CAPRIMULGIFORMES (Goatsuckers and Relatives)**
**FAMILY: CAPRIMULGIDAE (Goatsuckers)**
Lesser Nighthawk (*Chordeiles acutipennis*)
Common Poorwill (*Phalaenoptilus nuttalli*)
**ORDER: APODIFORMES (Swifts and Hummingbirds)**
**FAMILY: APODIDAE (Swifts)**
Black Swift (*Cypseloides niger*)
Vaux's Swift (*Chaetura vauxi*)
**FAMILY: TROCHILIDAE (Hummingbirds)**
Black-chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)
**ORDER: PASSERIFORMES (Perching Birds)**
**FAMILY: TYRANNIDAE (Tyrant Flycatchers)**
Black Phoebe (*Sayornis nigricans*)
Western Kingbird (*Tyrannus verticalis*)
**FAMILY: LANIIDAE (Shrikes)**
Loggerhead Shrike (*Lanius ludovicianus*)
**FAMILY: CORVIDAE (Jays, Magpies, and Crows)**
*Western Scrub Jay (*Aphelocoma coerulescens*)
American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)
**FAMILY: HIRUNDINIDAE (Swallows)**
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Cliff Swallow (*Petrochelidon pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
**FAMILY: SITTIDAE (Nuthatches)**
Red-breasted Nuthatch (*Sitta canadensis*)
White-breasted Nuthatch (*Sitta carolinensis*)
**FAMILY: TROGLODYTIDAE (Wrens)**
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)
**FAMILY: REGULIDAE (Kinglets)**
Ruby-crowned Kinglet (*Regulus calendula*)
**FAMILY: TURDIDAE (Thrushes)**
Hermit Thrush (*Catharus guttatus*)
American Robin (*Turdus migratorius*)
Varied Thrush (*Ixoreus naevius*)
**FAMILY: MIMIDAE (Mockingbirds and Thrashers)**
*Northern Mockingbird (*Mimus polyglottos*)
**FAMILY: STURNIDAE (Starlings)**
*European Starling (*Sturnus vulgaris*)
**FAMILY: MOTACILLIDAE (Wagtails and Pipits)**
American Pipit (*Anthus rubescens*)
**FAMILY: BOMBYCILLIDAE (Waxwings)**

Cedar Waxwing (*Bombycilla cedrorum*)

**FAMILY: EMBERIZIDAE (Emberizines)**

California Towhee (*Pipilo crissalis*)
Vesper Sparrow (*Pooecetes gramineus*)
Lark Sparrow (*Chondestes grammacus*)
Savannah Sparrow (*Passerculus sandwichensis*)
Fox Sparrow (*Passerella illiaca*)
Song Sparrow (*Melospiza melodia*)
Lincoln's Sparrow (*Melospiza lincolnii*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
Dark-eyed Junco (*Junco hyemalis*)

**FAMILY: CARDINALIDAE (Cardinals, Grosbeaks and Allies)**

Black-headed Grosbeak (*Pheucticus melanocephalus*)
Blue Grosbeak (*Guiraca caerulea*)
Lazuli Bunting (*Passerina amoena*)

**FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)**

Red-winged Blackbird (*Agelaius phoeniceus*)
Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
Hooded Oriole (*Icterus cucullatus*)
Bullock's Oriole (*Icterus bullocki*)

**FAMILY: FRINGILLIDAE (Finches)**

*House Finch (*Carpodacus mexicanus*)
Pine Siskin (*Carduelis pinus*)
Lesser Goldfinch (*Carduelis psaltria*)
American Goldfinch (*Carduelis tristis*)

**FAMILY: PASSERIDAE (Old World Sparrows)**

*House Sparrow (*Passer domesticus*)

**CLASS: MAMMALIA**

**ORDER: DIDELPHIMORPHIA (Marsupials)**

**FAMILY: DIDELPHIDAE (Opossums)**

Virginia Opossum (*Didelphis virginiana*)

**ORDER: INSECTIVORA (Shrews and Moles)**

**FAMILY: TALPIDAE (Moles)**

Broad-footed Mole (*Scapanus latimanus*)

**ORDER: CHIROPTERA (Bats)**

**FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)**

Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Red Bat (*Lasiurus borealis*)
Hoary Bat (*Lasiurus cinereus*)
Townsend's Big-eared Bat (*Plecotus townsendii*)
Pallid Bat (*Antrozous pallidus*)

**FAMILY: MOLOSSIDAE (Free-tailed Bat)**

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

**ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)**

**FAMILY: LEPORIDAE (Rabbits and Hares)**
Desert Cottontail (*Sylvilagus audubonii*)

**ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)**

**FAMILY: SCIURIDAE** (Squirrels, Chipmunks, and **Marmots)**
*California Ground Squirrel (*Spermophilus beecheyi*)

**FAMILY: GEOMYIDAE (Pocket Gophers)**
*Botta's Pocket Gopher (*Thomomys bottae*)

**FAMILY: MURIDAE (Mice, Rats and Voles)**
Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Black Rat (*Rattus rattus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)

**ORDER: CARNIVORA (Carnivores)**

**FAMILY: CANIDAE (Foxes, Wolves, and Relatives)**
Coyote (*Canis latrans*)

**FAMILY: FELIDAE (Cats)**
Feral Cat (*Felis cattus*)

# APPENDIX C

## *A Cultural Resource Survey of the Peach Avenue Widening Between Jensen and Butler Avenues Project Area City of Fresno, Fresno County, California*

**Prepared by:**
**Sierra Valley Cultural Planning**
**November 21, 2013**

SIERRA VALLEY CULTURAL PLANNING

20 July 2019

Mr. Scott Odell, AICP
Principal Planner/President
ODELL Planning & Research, Inc.
49346 Road 426, Suite 2
Oakhurst, CA 93644

Re: Cultural Resources Assessment, Peach Avenue Widening Between Jensen and Butler Avenues Project Area, City of Fresno, Fresno County, California

Dear Scott,

In 2013 I completed a cultural resources assessment of a 1.5-mile segment of Peach Avenue between Butler Avenue and approximately 1000 feet south of Jensen Avenue in the City of Fresno. No cultural resources were identified as a result of a records search with the Southern San Joaquin Valley Information Center and the surface inspection of the project area. The inspected project area is in a highly disturbed area consisting of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut. Soils analysis suggested that there is a low probability for buried cultural resources within the project area. For these reasons I concluded that it is unlikely that completion of the proposed street widening and associated enhancement project would have an effect on important archaeological, historical, or other cultural resources.

A brief windshield survey of the project area was completed on July 18, 2019 by Sierra Valley Cultural Planning archaeologist Douglas S. McIntosh. There have been no changes in the area or project circumstances that would affect the conclusions of my 2013 assessment. There have be no physical changes with respect to additional development activity or improvements that would have resulted in additional cultural studies in the area.

For the above reasons, I argue that the 2013 assessment results and recommendations remain applicable for the Peach Avenue widening project, and that no additional cultural resources studies are warranted. Should you have any questions regarding my assessment, please do not hesitate to contact me at kroper3r@gmail.com or by telephone or text at (559) 288-6375.

Sincerely,



C. Kristina Roper, M.A., RPA

41847 Sierra Drive, Three Rivers, CA 93271 Tel.: (559) 288-6375 kroper3r@gmail.com

# A CULTURAL RESOURCE SURVEY OF THE PEACH AVENUE WIDENING BETWEEN JENSEN AND BUTLER AVENUES PROJECT AREA, CITY OF FRESNO, FRESNO COUNTY, CALIFORNIA

Prepared by:

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Sierra Valley Cultural Planning
41845 Sierra Drive
Three Rivers, CA 93271
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Submitted to:

Michael P. Paoli
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7600 N. Ingram Avenue, Suite 121
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21 November 2013

USGS Topographic Quadrangle: Malaga, Calif., 7.5' (1981)

Area: 1.5 miles / 2.4 kilometers

(Keywords*: Northern Valley Yokuts, USDA Horticultural Field Station, A.Y. Easterby, Eisen Vineyard, August Weihe, Henrietta Rancho, G.H. Malter, Butler Vineyard, Moses Church, Robert Edmiston, Fancher Creek Canal, Fresno Canal, Township 14S, Range 21E)*

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## SUMMARY OF FINDINGS

The City of Fresno proposes to widen Peach Avenue between Butler Avenue and approximately 1000 feet south of Jensen Avenues (approx. 1.5 miles) in southeast Fresno to arterial standards with all of the associated pavement, curb, gutter, sidewalk, drainage and utility improvements.

On 9 September 2013, a cultural resource survey was performed of the approximately 1.5-mile (2.4 kilometer) project area as described above and depicted on Maps 1-2. The study area is located in the southwest portion of the City of Fresno, in Township 14S, Range 21E, Sections 7, 8, 17, 18, 19, and 20, MDB&M.

Odell Planning & Research, Inc., is assisting the City of Fresno with the preparation of environmental documents necessary under the California Environmental Quality Act (CEQA) Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources.

No cultural resources were identified as a result of a records search with the Southern San Joaquin Valley Information Center and the surface inspection of the project area. Much of the project area was paved, thus obstructing inspection of surface soils within the roadway itself and adjacent sidewalks. Exposed soils were visible adjacent the roadway in open fields and where sidewalks were absent.

The project area is located in a highly disturbed area and consists of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut. Analysis of subsurface soil structure within the project area suggests that buried cultural deposits are unlikely due to strongly developed soil horizons. For these reasons it is unlikely that completion of the proposed street widening and associated enhancement project will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended.

If buried cultural materials are encountered during construction, work must stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

## INTRODUCTION

This report presents the findings of an archaeological survey of approximately 1.5 miles (2.4 kilometers) of land located along Peach Avenue in the southeast area of the City of Fresno. The project area extends south from Hamilton Avenue to a point 1000 feet south of Jensen Avenue. The survey was completed by the author on 9 September 2013 (see Maps 1-2).

Odell Planning & Research, Inc., is assisting the City of Fresno with the preparation of environmental documents necessary under the California Environmental Quality Act (CEQA. Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources.

The survey was completed by the author, C. Kristina Roper, who has over 30 years of professional experience in the field of archaeology, historical research and architectural evaluation, specifically in the investigation and management of cultural resources within the context of local, state and federal regulatory compliance for projects in the Far West. Ms. Roper holds a Master's degree in Cultural Resources Management awarded in 1993 from Sonoma State University, and is certified as a Registered Professional Archaeologist.

## PROJECT LOCATION AND DESCRIPTION

The Peach Avenue Widening Project Area is located in the southwest portion of the City of Fresno, in Township 14S, Range 21E, Sections 7, 8, 17, 18, 19, and 20, MDB&M (see Maps 1-2).

The City of Fresno proposes to widen Peach Avenue between Butler Avenue and approximately 1000 feet south of Jensen Avenues (approx. 1.5 miles) in southeast Fresno to arterial standards with all of the associated pavement, curb, gutter, sidewalk, drainage and utility improvements.

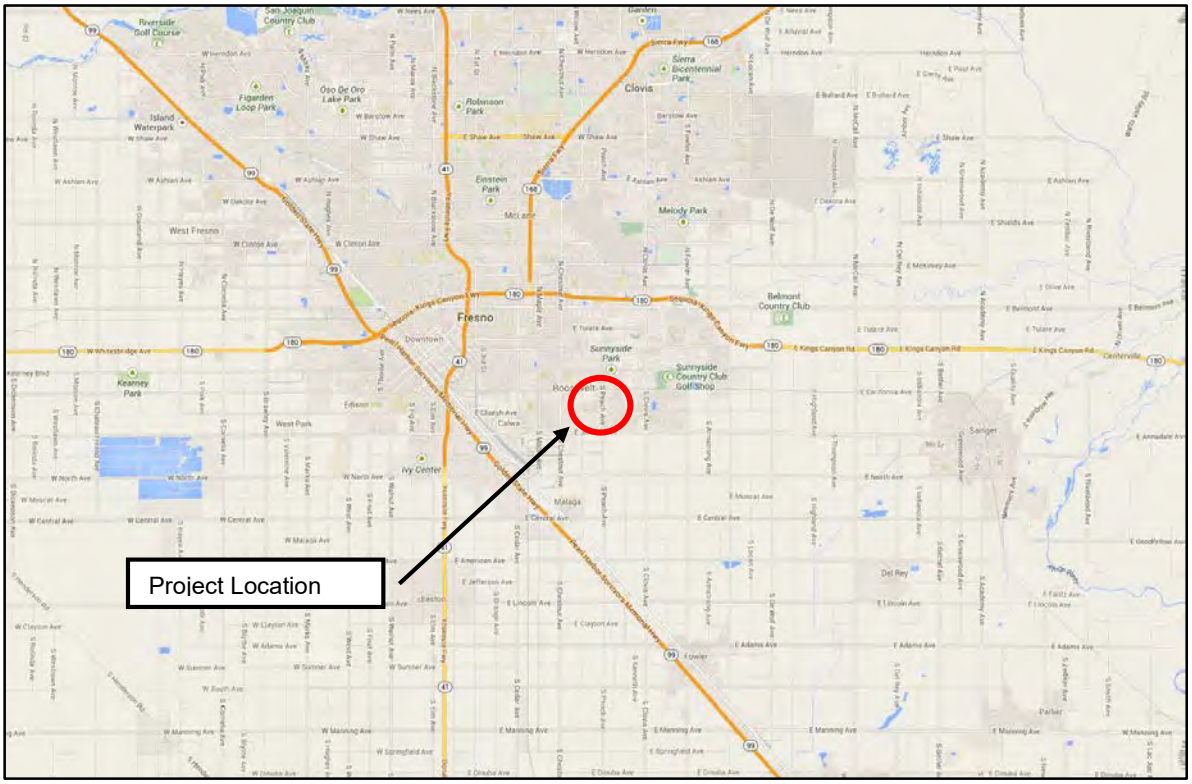
The Project Area is located in a highly disturbed area and consists of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut (see Map 3).

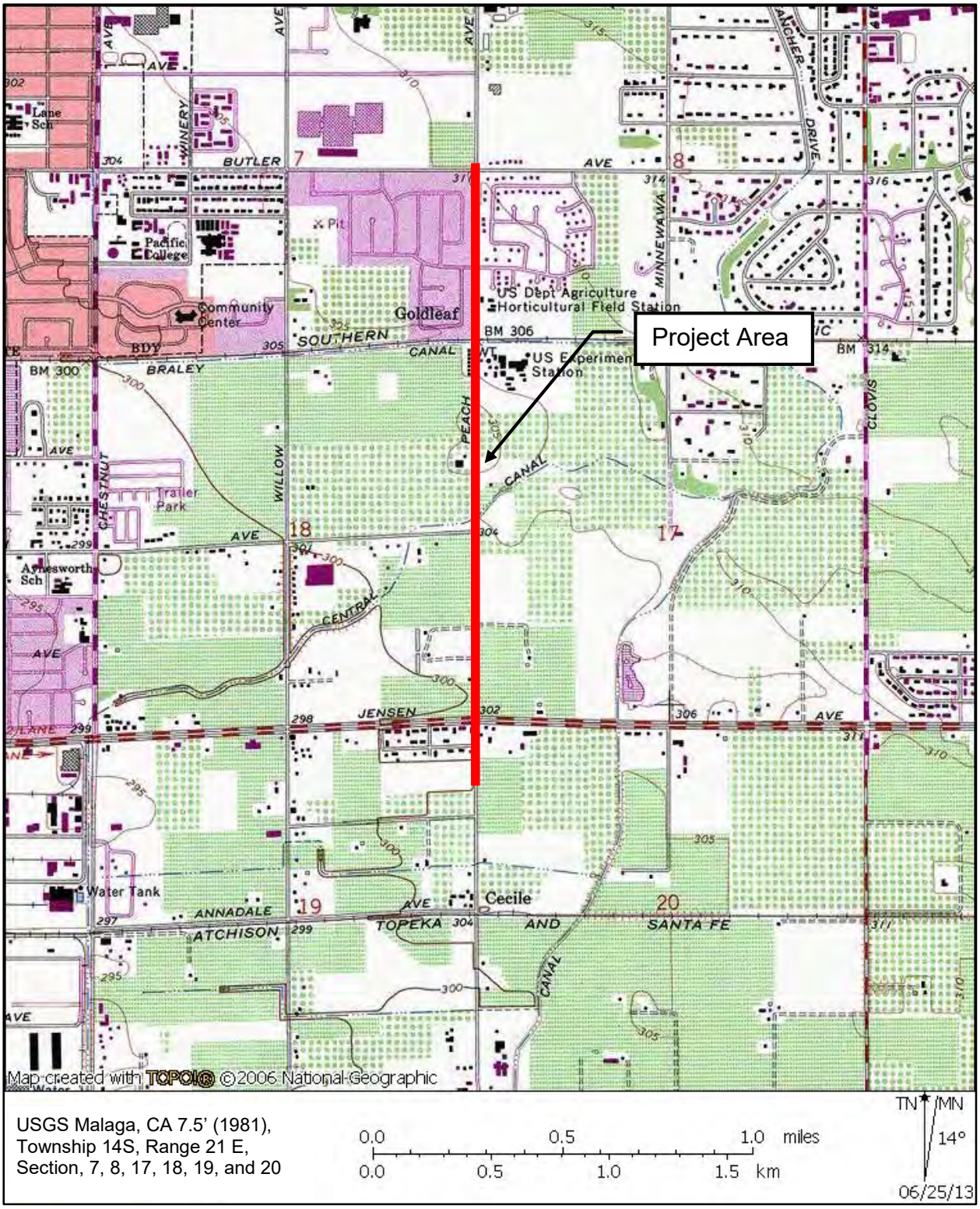


MAP 1. STUDY VICINITY

Peach Avenue Widening Project, City of Fresno, Fresno County






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**Map 2.** Study Location. Peach Avenue Widening Project, City of Fresno, Fresno County, California




**Map 3.** Aerial Map of Project Study Area.

## SOURCES CONSULTED

Prior to field inspection, a records search was conducted by the Southern San Joaquin Valley Information Center of the California Historical Resources Information System staff to identify areas previously surveyed and identify known cultural resources present within or in close proximity to the project study area. According to the Information Center records, there have been no cultural resource surveys completed within the project study area; five studies have been completed within a ¼-mile radius of the project area. No cultural resources have been recorded within the project area; there is one recorded resource within a ¼-mile radius of the project area: P-10-005305, the United States Department of Agriculture (USDA) Horticultural Field Station, located at 2021 S. Peach Avenue, which includes agricultural lands and a building complex with both historical and modern buildings. No cultural resource sites listed on the National Register of Historic Places, the California Register of Historic Resources, California Points of Historical Interest, State Historic Landmarks, or the California Inventory of Historic Resources have been documented within ¼-mile radius of the project area (see Attachment 1).



**Figure 1.** View south along Peach Avenue from Hamilton Avenue.



**Figure 2**. View south along Peach Avenue from railroad crossing 0.2 miles south of Hamilton Avenue.



**Figure 3.** View north along Peach Avenue from railroad crossing. The USDA Horticultural Field Station is located on the east side of Peach Avenue north of the RR crossing.



**Figure 4.** View south on Peach Avenue; Jensen Avenue is in the distance.



**Figure 5.** View north on Peach Avenue from south end of project area; Jensen Avenue is in the distance.

The Native American Heritage Commission (NAHC) was contacted on 22 October 2013 in order to determine whether Native American sacred sites have been identified either within or in close proximity to the project study area. A letter was received from the NAHC dated 6 November 2013 which indicated that no Native American cultural resources were located within one-half mile of the proposed project location. The NAHC advised that Native American tribes or individuals may be the only source for the presence of traditional cultural places. Eleven individuals were identified by the NAHC as having information regarding local traditional cultural properties which may be situated in proximity to the project study area. Letters describing the proposed road widening project and the findings of this report were sent to each of the eleven individuals identified as local area contacts. No responses have been received as of 21 November 2013 (see Attachment 2).

## BACKGROUND

The project study area is located within an urban environment in the City of Fresno, Fresno County, California. The project area is situated in a highly disturbed area and consists of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut. Bordering the project area is single family residential housing, open fields, a public elementary school, and the afore-mentioned USDA facility. Figures 1 through 5 provide a pictorial overview of the project study area.

Prior to EuroAmerican exploration and settlement in the region, the central San Joaquin Valley was extensive grassland covered with spring-flowering herbs. Stands of trees -- sycamore, cottonwoods, box elders and willows -- lined the stream and river courses with groves of valley

oaks in well-watered localities with rich soil. Rivers yielded fish, mussels, and pond turtles; migratory waterfowl nested in the dense tules along the river sloughs downstream. When the Spanish first set foot in the area, they found the deer and tule elk trails to be so broad and extensive that they first supposed that the area was occupied by cattle. Grizzly bears occupied the open grassland and riparian corridors on the valley floor and adjacent foothills. Smaller mammals and birds, including jackrabbits, ground squirrels, and quail were abundant. Native Americans occupants of the region describe abundant sedge beds, along with rich areas of deer grass, plants that figure prominently in the construction of Native American basketry items.

**Prehistoric Period Summary**

The San Joaquin Valley and adjacent Sierran foothills and Coast Range have a long and complex cultural history with distinct regional patterns that extend back more than 11,000 years (McGuire 1995). The first generally agreed-upon evidence for the presence of prehistoric peoples in the region is represented by the distinctive basally-thinned and fluted projectile points, found on the margins of extinct lakes in the San Joaquin Valley. These projectiles, often compared to Clovis points, have been found at three localities in the San Joaquin Valley including along the Pleistocene shorelines of former Tulare Lake. Based on evidence from these sites and other well-dated contexts elsewhere, these Paleo-Indian hunters who used these spear points existed during a narrow time range of 11550 cal B.C. to 8550 cal B.C. (Rosenthal et al. 2007).

As a result of climate change at the end of the Pleistocene, a period of extensive deposition occurred throughout the lowlands of central California, burying many older landforms and providing a distinct break between Pleistocene and subsequent occupations during the Holocene. Another period of deposition, also a product of climate change, had similar results around 7550 cal B.C., burying some of the oldest archaeological deposits discovered in California (Rosenthal and Meyer 2004).

The Lower Archaic (8550-5550 cal B.C.) is characterized by an apparent contrast in economies, although it is possible they may be seasonal expressions of the same economy. Archaeological deposits which date to this period on the valley floor frequently include only large stemmed spear points, suggesting an emphasis on large game such as artiodactyls (Wallace 1991). Recent discoveries in the adjacent Sierra Nevada have yielded distinct milling assemblages which clearly indicate a reliance on plant foods. Investigations at Copperopolis (LaJeunesse and Pryor 1996) argue that nut crops were the primary target of seasonal plant exploitation. Assemblages at these foothill sites include dense accumulations of handstones, millingslabs, and various cobble-core tools, representing “frequently visited camps in a seasonally structured settlement system” (Rosenthal et al. 2007:152). During the Lower Archaic, regional interaction spheres were well established. Marine shell from the central California coast has been found in early Holocene contexts in the Great Basin east of the Sierra Nevada, and eastern Sierra obsidian comprises a large percentage of flaked stone debitage and tools recovered from sites on both sides of the Sierra (Rosenthal et al. 2007:152).

About 8,000 years ago, many California cultures shifted the main focus of their subsistence strategies from hunting to nut and seed gathering, as evidenced by the increase in food-grinding implements found in archeological sites dating to this period. This cultural pattern is best known for southern California, where it has been termed the Milling Stone Horizon (Wallace 1954, 1978a), but recent studies suggest that the horizon may be more widespread than originally described and is found throughout the central region during the Middle Archaic Period. Dates associated with this period vary between 9,000 and 2,000 cal BP, although most cluster in the 6,800 to 4,500 cal BP range (Basgall and True 1985).

On the valley floor, early Middle Archaic sites are relatively rare; this changes significantly toward the end of the Middle Archaic. In central California late Middle Archaic settlement focused on river courses on the valley floor. “Extended residential settlement at these sites is indicated by refined and specialized tool assemblages and features, a wide range of nonutilitarian artifacts, abundant trade objects, and plant and animal remains indicative of year-round occupation” (Rosenthal et al. 2007:154). Again, climate change apparently influence this shift, with warmer, drier conditions prevailing throughout California. The shorelines of many lakes, including Tulare Lake, contracted substantially, while at the same time rising sea levels favored the expansion of the San Joaquin/Sacramento Delta region, with newly formed wetlands extending eastward from the San Francisco Bay.

In contrast with rare early Middle Archaic sites on the valley floor, early Middle Archaic sites are relatively common in the Sierran foothills, and their recovered, mainly utilitarian assemblages show relatively little change from the preceding period with a continued emphasis on acorns and pine nuts. Few bone or shell artifacts, beads, or ornaments have been recovered from these localities. Projectile points from this period reflect a high degree of regional morphological variability, with an emphasis on local toolstone material supplemented with a small amount of obsidian from eastern sources. In contrast with the more elaborate mortuary assemblages and extended burial mode documented at Valley sites, burials sites documented at some foothill sites such as CA-FRE-61 on Wahtoke Creek are reminiscent of “re-burial” features reported from Milling Stone Horizon sites in southern California. These re-burials are characterized by re-interment of incomplete skeletons often capped with inverted millingstones (McGuire 1995:57).

A return to colder and wetter conditions marked the Upper Archaic in Central California (550 cal B.C. to cal A.D. 1100). Previously desiccated lakes returned to spill levels and increased freshwater flowed in the San Joaquin and Sacramento watershed. Cultural patterns as reflected in the archeological record, particularly specialized subsistence practices, emerged during this period. The archeological record becomes more complex, as specialized adaptations to locally available resources were developed and valley populations expanded into the lower Sierran foothills. New and specialized technologies expanded and distinct shell bead types occurred across the region. The range of subsistence resources utilized and exchange systems expanded significantly from the previous period. In the Central Valley, archaeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items.

The period between approximately cal A.D. 1000 and Euro-American contact is referred to as the Emergent Period. The Emergent Period is marked by the introduction of bow and arrow technology which replaced the dart and atlatl at about cal A.D. 1000 and 1300. In the San Joaquin region, villages and small residential sites developed along the many stream courses in the lower foothills and along the river channels and sloughs of the valley floor. A local form of pottery was developed in the southern Sierran foothills along the Kaweah River. While many sites with rich archaeological assemblages have been documented in the northern Central Valley, relatively few sites have been documented from this period in the southern Sierran foothills and adjacent valley floor, despite the fact that the ethnographic record suggests dense populations for this region.

**Ethnographic Summary**

Prior to EuroAmerican settlement, most of the San Joaquin Valley and the bordering foothills of the Sierra Nevada and Coastal Range were inhabited by speakers of Yokutsan languages. The southern San Joaquin Valley was home of speakers of Yokutsan languages. The bulk of the Valley Yokuts people lived on the eastern side of the San Joaquin Valley. The project area falls within the outlying territory of the *Pitkachi* Yokuts. The *Pitkachi*, a Northern

Valley Yokuts tribelet, occupied the southern side of the San Joaquin River extending up and down river from the town of Herndon (Latta 1999:161). The *Gashowu* occupied the area to the east/northeast, centering on Big Dry Creek. Population densities were highest in the eastern valley and adjacent Sierra Nevada foothills, with as many as 10+ people per square mile living along a narrow strip bordering the San Joaquin and its tributaries (Baumhoff 1963: map 7). No village or other named sites are identified within one mile radius of the project area.

Numerous accounts of Valley Yokuts lifeways offer details of pre-European land use in the San Joaquin Valley. The reader is referred to Gayton (1948), Kroeber (1925), Latta (1999), and Wallace (1978b) for additional information on pre-contact Yokuts subsistence and culture.

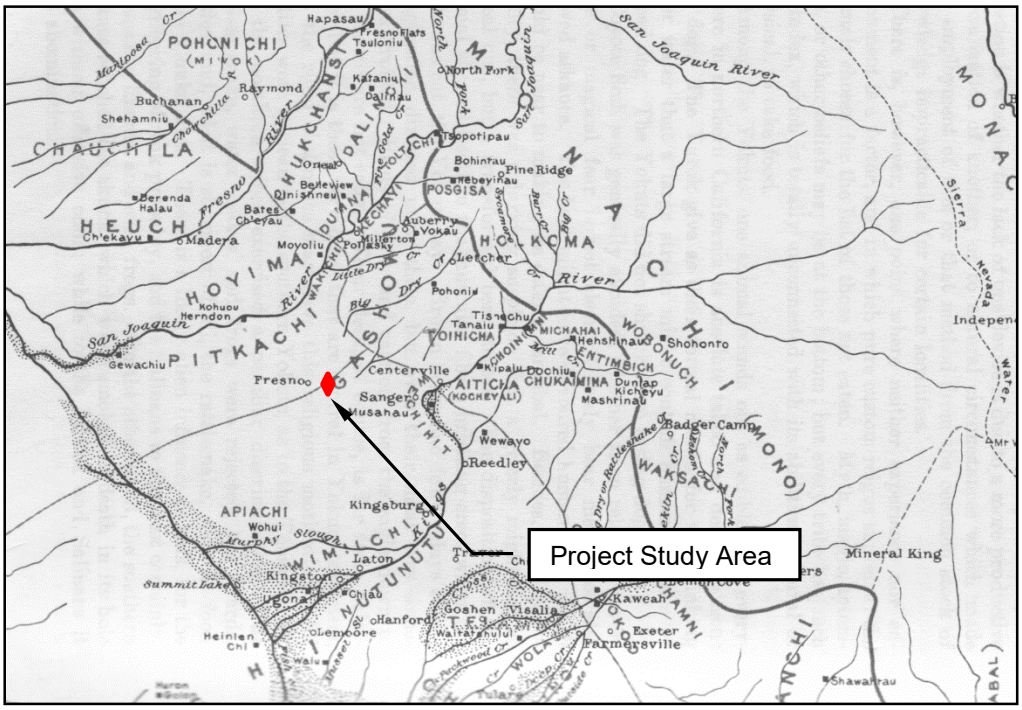



**Figure 6.** Northern Valley Yokuts Village Locations (from Kroeber 1925: Plate 47).

**Historic Period Summary**

Fresno County was established in 1856 from territory taken from Mariposa County. The small town of Friant was chosen as the first County Seat. Many early pioneers considered the area in what was to become the city of Fresno as a wasteland. However, as irrigation infrastructure was constructed the land transformed into the agricultural empire that we know today. Population centers located were located near the rivers until the various railroad developments and land deals opened up the Valley Floor to settlement. As the Central (later Southern) Pacific Railroad began to build its line through the Central Valley and canal networks were constructed a population boom ensued.

An 1891 atlas map of Fresno County places the present project area within Henrietta Rancho (Thompson 1891). In 1872 August Weihe founded the ranch, which was later purchased by G. H. Malter (Elliott 1882:212). This was prime grape land, and included many of Fresno's most notable vineyards, including the Eisen Vineyard (founded by two Swedish brothers who planted the first grapes in the region), and the Butler Vineyards, which at one time was the largest vineyard in California (Eisen 1890:211).

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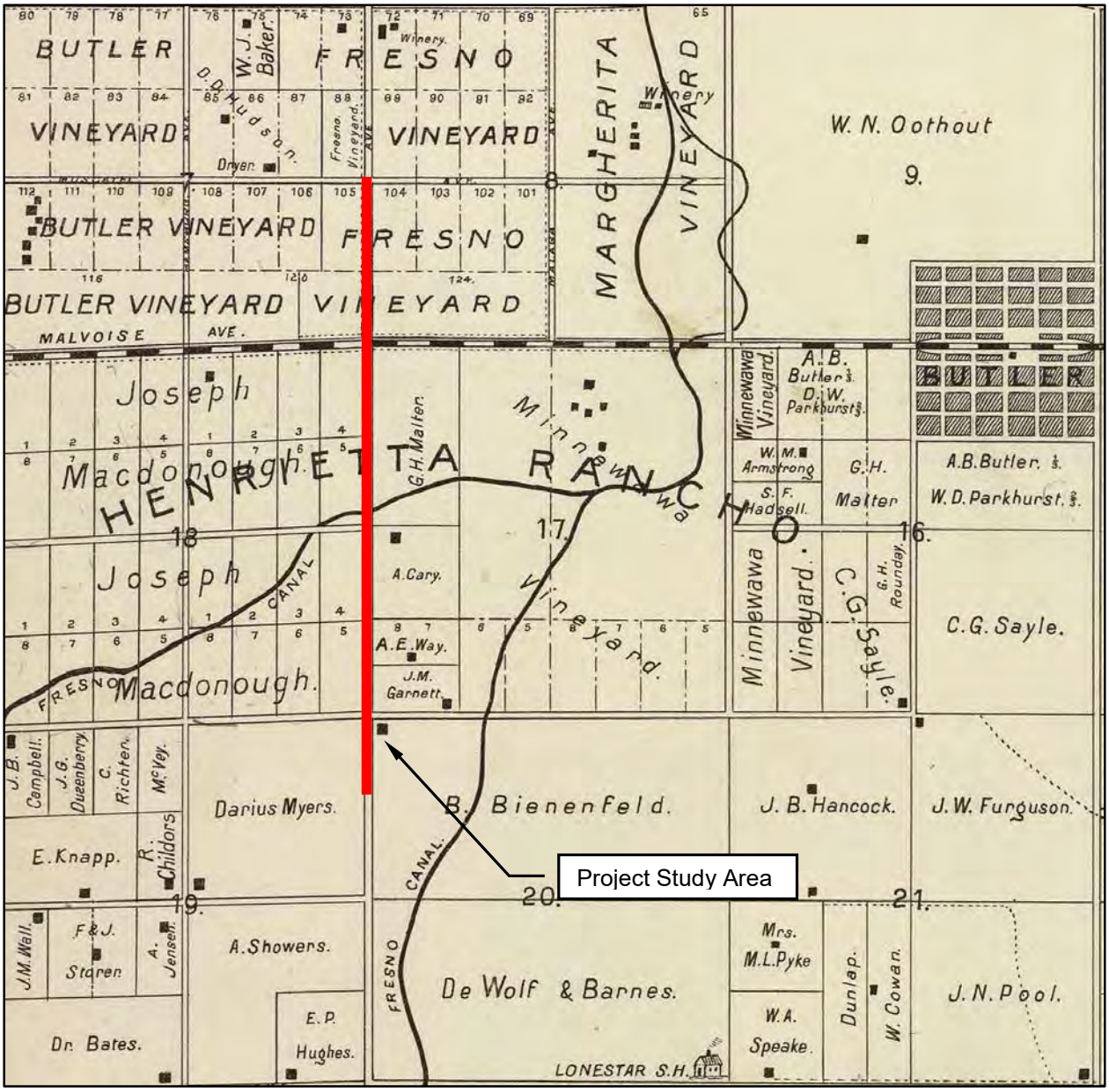



**Figure 7.** 1891 Map depicting parcel ownership and development within the study area (Thompson 1891).

Water was the key to the success of the large vineyards which marked the region. Thus, during the 1870s property owners east of present-day Fresno attempted to expand the earliest canals. The most ambitious undertaking was that of A. Y. Easterby who eventually used Kings River water to irrigate 2000 acres of his lands located in Sections 5 and 6 of Township 14 South, Range 21 East, which was bounded by present-day Chestnut Avenue, Kings Canyon Road, Clovis Avenue, and Belmont Avenue, to the north of the present project area. Easterby hired Moses Church to supervise the construction of a canal to bring water to his land (Willison 1980:65-83).

In order to accomplish this task, Church, Easterby, and Robert Edmiston, an engineer, incorporated the Fresno Canal and Irrigation Company on February 16, 1871 (Thickens 1946:21). Moses Church intended to widen and lengthen the Centerville Ditch until it reached the natural channel of Fancher Creek. The Fancher Creek Canal, also known as Fresno Canal in the late 1800s, was completed in 1874, and began at the head of the terminus of the Centerville Canal (later renamed the Fresno Canal by Moses Church) near the "…center of Section 31, township 13 south, range 23 east, M. D. B. & M., and running thence in a southwesterly direction 9.09 miles more or less to the terminus of said canal near the south line of the northeast quarter of section 17, township 14 south, range 22 east, M.D.B. & M." (Willison 1980:270). Although Fancher Creek was a natural conduit, it was extended in various stages during the late 1870s, 1880s, and decades later, to serve irrigated land to the south and west of the Easterby Ranch, including the Henrietta Rancho as well as other notable vineyards including Butler, Minnewawa, Margherita, and Oothout vineyards (Weitze 1992: Vol 3).

## METHODS AND FINDINGS

On 9 September 2013, the author conducted a cultural resource survey of the project area. No cultural resources were identified as a result of a records search with the Southern San Joaquin Valley Information Center and the surface inspection of the project area. Much of the project area was paved, thus obstructing inspection of surface soils within the roadway itself and adjacent sidewalks. Exposed soils were visible adjacent the roadway in open fields and where sidewalks were absent.

The project area is located in a highly disturbed area and consists of existing sidewalks and streets, landscaping, and bare ground or scrub brush that has been previously graded/cut. Analysis of subsurface soil structure within the project area suggests that buried cultural deposits are unlikely due to strongly developed soil horizons. For these reasons it is unlikely that completion of the proposed street widening and associated enhancement project will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended.

If buried cultural materials are encountered during construction, work must stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

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## PREPARER'S QUALIFICATIONS

C. Kristina Roper conducted the historical resources inventory and background research, and assisted in the preparation of this Archaeological Survey Report. Ms. Roper has over 30 years of professional experience in the field of archaeology, historical research and architectural evaluation, specifically in the investigation and management of cultural resources within the context of local, state and federal regulatory compliance for projects in the Far West. Ms. Roper holds a Master's degree in Cultural Resources Management awarded in 1993 from Sonoma State University, and is certified as a Registered Professional Archaeologist. She has completed graduate-level coursework in historical architectural evaluation and historic research. Her experience in cultural resources management includes both government and private sector employment and contracting for archaeological field services and historic research, documentation of resource assessments for Initial Studies (IS), Environmental Assessments (EA), Environmental Impact Reports (EIR), and Environmental Impact Statements (EIS). Ms. Roper is a registered archaeologist with the California Historic Resources Information System.

Ms. Roper has participated in planning efforts with numerous governmental entities in the San Joaquin Valley. She has prepared heritage preservation ordinances for the City of Chowchilla, serves as advisory staff to the Chowchilla Heritage Preservation Commission, and has recently completed a multi-year survey and assessment of Chowchilla's built environment. Ms. Roper has prepared a cultural resources records search and sensitivity analysis to be used in the development of a revised General Plan for the City of Coalinga, Fresno County. Ms. Roper has consulted with Native American tribes in the San Joaquin Valley and Sierra foothills under Senate Bill 18 (SB 18), which applies to General Plans, Specific Plans, and amendments proposed on or after March 1, 2005. SB 18 expands CEQA for the protection of California's traditional tribal cultural places by requiring consultation with Native American Groups during these planning efforts to define resources and sacred areas and incorporate protection of these important resources into the planning process.

Ms. Roper has served as a Lecturer in Anthropology at California State University Fresno from 1995 to the present. Among her many courses taught is an upper division course in Cultural Resources Management which provides an overview of state and federal historic preservation law and the identification and evaluation of cultural resources. From 2002 through June of 2009, Ms. Roper served as Project Director for a services contract with the California Department of Transportation, District 6, Cultural Resources Branch, administered by the California State University Foundation. Ms. Roper supervised a team of cultural resources technicians who performed professional and technical services required by Caltrans for cultural resource studies. These included archaeological survey, title search for historic structures and properties, prehistoric and historic background research, excavation of archaeological sites, electronic data entry, and maintenance of confidential archaeological records and files.

**ATTACHMENT 1:**

**Cultural Resources Records Search,**
**Southern San Joaquin Valley Information Center**
**of the California Historical Resources**
**Information System (RS# 13-231)**

**CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM**

**FRESNO KERN KINGS MADERA TULARE**

**Southern San Joaquin Valley Information Center**
California State University, Bakersfield
Mail Stop: 46 MEC
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

**TO:** C. Kristina Roper **(RS# 13-231)**
Sierra Valley Cultural Planning
41845 Sierra Drive
Three Rivers, CA 93271

**DATE:** June 27, 2013

**RE:** Peach Avenue Widening Project

**County:** Fresno

**Map(s):** Malaga 7.5'

The Southern San Joaquin Valley Information Center is under contract to the State Office of Historic Preservation and is responsible for the local management of the California Historical Resources Inventories. The Center is funded by research fees and a grant from the State Office of Historic Preservation. The Information Center does not conduct fieldwork and is not affiliated with any archaeological consultants who conduct fieldwork.

## CULTURAL RESOURCES RECORDS SEARCH

The Information Center files include known and recorded archaeological and historic resources, inventory and excavation reports, and properties listed on the National Register of Historic Places, the Historic Property Data File (3/18/13), the California Register, the California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest. The following summarizes the known historical resources information currently available for this subject property based in part on the sources outlined above.

## PRIOR CULTURAL RESOURCE INVENTORIES WITHIN THE PROJECT AREA AND A ONE-QUARTER MILE RADIUS

According to the information in our files, there have been no cultural resource studies conducted within the project area. There have been five (5) studies conducted within a one-quarter mile radius, FR-00296, 02000, 02126, 02127, and 02217. The study locations and their associated report numbers are shown on the project map.

(RS# 13-231)

## KNOWN AND/OR RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND A ONE-QUARTER MILE RADIUS

There are no recorded cultural resources within the project area. There is one (1) recorded resource within a one-quarter mile radius, P-10-005305. The resource location and its associated primary number are shown on the project map.

There are no known cultural resources within the project area or one-quarter mile radius that are listed in the National Register of Historic Places, the California Register, California Inventory of Historic Resources, California Points of Historical Interest, or the California State Historic Landmarks.

## COMMENTS

Requested documents are enclosed. If you have any questions, comments, or need any additional information, please don't hesitate to contact our office at (661) 654-2289.

By 

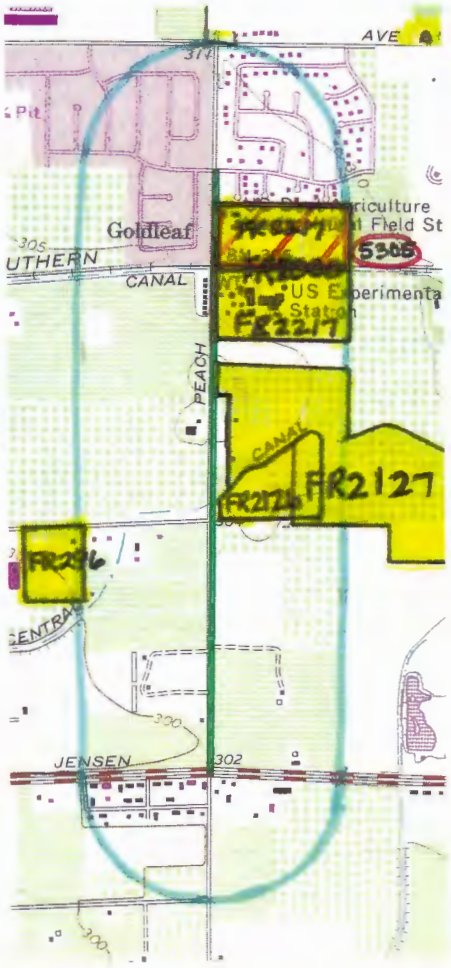
Celeste M. Thomson, MBA
Assistant Coordinator

**Date:** June 27, 2013

**Fee:** $225.00/hr. (Priority Service)

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Record Search 13-231
Malaga 7.5'
Fresno County, CA



**Applied EarthWorks, Inc.**
# PRIMARY RECORD

Primary # P-10-005305
HRI #
Trinomial
NRHP Status Code

Page 1 of 7

Other Listings
Review Code | Reviewer | Date

**P1. Temporary Number/Resource Name:** USDA Horticultural Field Station

**P2. Location:** **a. County:** Fresno ☐ **Not for Publication** ☐ **Unrestricted**
**b. USGS 7.5' Quad:** Malaga, CA **Date** 1964 (photorevised 1981) T 14S, R 21E; Sections 8 and 17 **B.M.** Mount Diablo
**c. Address:** 2021 S. Peach Avenue, Fresno, CA 93727
**d. UTM:** Zone 11 4067500 / **mN** 257475 /**mE**
**e. Other Locational Data:** The property lies just east of Peach Avenue at the northeast corner of the intersection of Peach Avenue and the Southern Pacific Railroad.

**P3a. Description:** The United States Department of Agriculture (USDA) Horticultural Field Station was in operation from 1916 until its closure sometime in the early 2000s. The station includes agricultural lands and a building complex with historical and modern structures. Five of the buildings were constructed in the 1920 and 1930s. These buildings along with a brief description of the other structures are described on the attached continuation sheet.

**P3b. Resource Attributes:** (List attributes and codes): HP14 (Government Buildings)

**P4. Resources Present:** ■ Building ☐ Structure ☐ Object ■ Site ☐ District ☐ Element of District ☐ Other

**P5. Photograph or Drawing:** 94-1, DSC0[illegible]—Overview showing Buildings 80 (left) and 11 (right), view to the west.



**P6. Date Constructed/Age:**
☐ Prehistoric
■ Historic 1916–present
☐ Both

**P7. Owner and Address:**
U.S. Dept. of Agriculture
800 Buchanan St.
Albany, CA 94710

**P8. Recorded by:**
Applied EarthWorks
5090 N. Fruit Ave. #101
Fresno, CA 93711

**P9. Date Recorded:** 10/15/03

**P10. Survey Type:**
■ Intensive
☐ Reconnaissance
☐ Other
**Describe:** Survey included the building complex and agricultural lands of the USDA Peach Avenue property.

**P11. Report Citation:**
Baloian, Randy, and Wendy M. Nettles
2003 *Cultural Resources Survey and Inventory of the USDA Peach Avenue Property in Fresno, California.* Applied EarthWorks, Inc., Fresno, California. Submitted to the United State Department of Agriculture, Albany, California.

**Attachments:** ☐ NONE ■ Location Map ■ Site/Sketch Map ■ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
■ Photograph Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Other (list):

RECEIVED
OCT 30 2003
BY:

DPR 523A (1/95)
Primary-photo.doc [10-31-02]

**Temporary Number/Resource Name:** USDA Horticultural Field Station

**P3a: Description (continued):**

**Buildings 3, 4, 5, and 6—Entomology.** This complex is a series of four portable buildings with corrugated metal siding that are linked by wooden ramps and walkways. The small, symmetrical fenestrations are vertical aluminum sliders. The focal point of the complex is a broad carpeted wooden walkway covered by corrugated plastic roofing and lit with fluorescent lights.

**Building 9—Administration.** This building contained the main office, conference room, library, receiving office, and visitor information desk (Figure 4-4). It was originally constructed as a residence in 1934. Elmer Snyder, the first Investigations Leader of the BPI Experimental Vineyard, and his family were the initial occupants (Harvey 1987:7). It is unclear when the residence was transformed into an office. This Spanish-Revival style building has a compound ground plan with a projection off the southwestern corner of the principal mass. A wooden batten door with decorative grate and knocker is tucked into the southern building projection.

The low-pitched cross-gable roof is covered with straight barrel mission tiles. The eaves are open. Two wooden vents are present in each gable. The white stucco siding is strongly textured. An end chimney is present just south of the roof peak on the east wall of the east-west gable. The chimney shape is unusual, with a stepped offset that is higher on the north side than on the south side. The north and south sides of the building have symmetrical fenestrations, but the east and west side fenestrations are asymmetrical. Most openings are double-hung wooden windows, but a large single-pane fixed window is present on both the west and south elevations. The window on the southern side serves as a focal point and has wooden shutters with a tree decoration cut out into them. An extended wall covered by a small portion of extended roofline adds to this focal point. An arch, closed off by a wooden gate, is cut into this extended wall. The only obvious alteration to the building is associated with a doorway on the eastern side of the structure. A wooden door with a single-pane fixed window appears to have replaced an earlier door. This opening is covered with a corrugated metal shed roof that is an addition to the original structure.

**Building 10—Fruit Breeding and Genetics.** This structure is the most intricate of any building in the complex as it displays three different construction episodes (Figure 4-5). The east wing of the building, which was built in 1927, was originally an implement shed. The west wing was constructed as a laboratory in 1929. A two-story building was constructed in 1931 between these two structures, joining all three into one unit. This new construction served as offices and the reception area of the laboratory (Harvey 1987:6–7).

The building is side-gabled and composed of concrete block that has been painted white. The original galvanized tin roof was replaced with a tile roof around 1936 (Harvey 1987:7). The tile roof also appears to have been replaced, as the current tiles are newer and shorter than original tiles found on other buildings in the complex. The center section of the structure is two stories, while the east and west sections are one story each.

A chimney stands on the west gable end of the center section. Four types of fenestrations are present on this structure. These include original wooden single-hung windows and 4/4 fixed-pane windows as well as single fixed-pane aluminum windows and aluminum horizontal sliders installed as replacements. The only remaining original windows are found on the second story (where none have been replaced) and the bottom rear of the center two-story section. Many doors have been replaced with metal doors. The wooden batten front door appears to be original. This door forms the focal point of the front porch, which is covered by a gable end tile roof. Although the door on the east side seems to have been replaced, an original tile and wooden gable porch roof still exists over the opening. A small basement is accessed through double doors set into a root cellar type opening at the north side of the building.

**Temporary Number/Resource Name:** USDA Horticultural Field Station

**P3a: Description (continued):**

**Building 11—Postharvest Quality and Genetics Research.** This structure was built by the WPA in 1935 but exhibits major alterations mentioned by Harvey (1987). The central portion of the building contained offices and the west wing held a laboratory, while the east wing served as cold storage. A second story was added over the cold storage wing in 1950, and two more cold rooms were constructed on the end of the wing. In 1964, a second story was added onto the rear of the center portion of the building (Harvey 1987:10–11).

The building is constructed of cement bricks that were made on site and have been painted white (Figure 4-6). The roof is covered in mission tiles, which appears to be replacement material, as the tiles looks newer and are shorter in length than those on other structures in the complex. Building 11 is similar to Building 10, with a two-story center section flanked by one-story sections on either side. The center section is cross gabled and the east and west end sections are end gabled. The west section is largely unchanged. The second story addition to the east wing, mentioned by Harvey, is quite apparent. The cold room expansion is also noticeable, and it exhibits a flat roofed block addition that contains a large metal door. The 1964 expansion is not as noticeable and cannot be seen from the front of the building. The main entrance remains unchanged with a batten door covered by a gable front tile roof supported by large trusses. A small porch at this door has one step. Wooden vents are present in all gables. There is a brick chimney on the northern slope of the center two-story section. Fenestration shows various window sizes, but these are fairly symmetrical. No original windows appear to remain in the structure; those present are horizontal aluminum sliders.

**Building 12—Greenhouse Complex and Head House.** Constructed in 1932, the head house is a long, narrow block building on an east-west axis (Figure 4-3). A composition shingle shed-type roof covers the building. A small side gable room projects from the eastern corner of the building. Additionally, four greenhouse stations ranging from 15 to 20 feet in length project from the southern side of the head house (Figure 4-7). The bottom 2 feet of the stations are brick, and the top of each is enclosed by a glass roof.

**Building 13.** This building has corrugated metal siding and a flat roof also clad with corrugated metal. Three doorways, all on the west side, access the building. Aluminum vertical slider fenestrations are symmetrically located around the building. Two of these openings are on the north and south ends, three are on the east side, and four are on the west side.

**Building 15—Pole Barn.** This is an open complex mostly covered by a flat corrugated metal roof. The eastern end has been enclosed and has a roll-up door and composition shingle roof.

**Building 16.** This building consists of two wooden portables that have been placed together. Three wooden doorways access the building from the north side. Vertical slider windows are symmetrically located only on the south side.

**Building 18.** This structure is likely the original pump house constructed in 1927 (Figure 4-8). A few years after construction, it was converted to restrooms. At some point after that it was again converted to a storage building.

This small rectangular building, a modified side-facing T-plan, is constructed of concrete blocks that have been painted white. The tile roof with open gables mirrors the administration building roof. The building is divided into two rooms. The western room access consists of two doors placed back to back. The exterior door is composed of thick wooden slats, while the interior door is steel and is padded with foam. This same foam lines the interior of the room. Two windows on the south side of this building have been bricked in, as have a door on the west side and three windows on the north side. A steel door accesses the eastern room of the building. The number of modifications to this building suggests that its use has changed through time, and its character is not consistent with its original appearance.

**Building 31—Greenhouse.** This is a tall gable-front structure with corrugated plastic walls that are supported by wooden poles. Aluminum-frame glass doors as well as large roll-up doors are present on both the north and south sides.

**Temporary Number/Resource Name:** USDA Horticultural Field Station

**P3a: Description (continued):**

**Building 38—Water Management Research Laboratory.** A series of five wooden portable buildings make up this complex. Vertical sliders are located symmetrically around the building. Main access to the complex is through two sets of large metal double doors on the north side. Wooden ramps lead to these openings, which are symmetrical except for an additional metal door that is located midslope on the eastern ramp.

**Building 39.** This corrugated metal shed is approximately 12 feet tall. A large roll-up door is on the north side. Aluminum vertical sliders are located on each side of this door. Two additional windows are found on the south side of the building. Metal doors, each with a single window pane, open near the northeast and northwest corners of the building.

**Building A.** This is a rectangular cement tank with an open top, measuring approximately 10 by 5 feet across and 5 feet deep. Approximately 2 feet of the tank lies underground. A gate valve and metal ladder are fastened to the inside of the tank. An 8-foot-tall chain link fence surrounds the perimeter of the tank. The function of the tank is unknown.

**Building B.** This is a Quonset hut–style building. The bottom 3 feet of the walls is corrugated plastic, while the upper 4 feet is covered in plastic sheeting.

**Building C—Chemical Storage.** This 5-foot-tall concrete platform functioned as a receiving dock. A small metal storage shed is located on the northwest corner, and a ramp to the top of the platform is on the southeast corner.

**Building D—Pole Barn.** This building is composed of metal poles and trusses that support a flat metal roof. The sides are open, and an assortment of packing equipment is stored inside the barn.

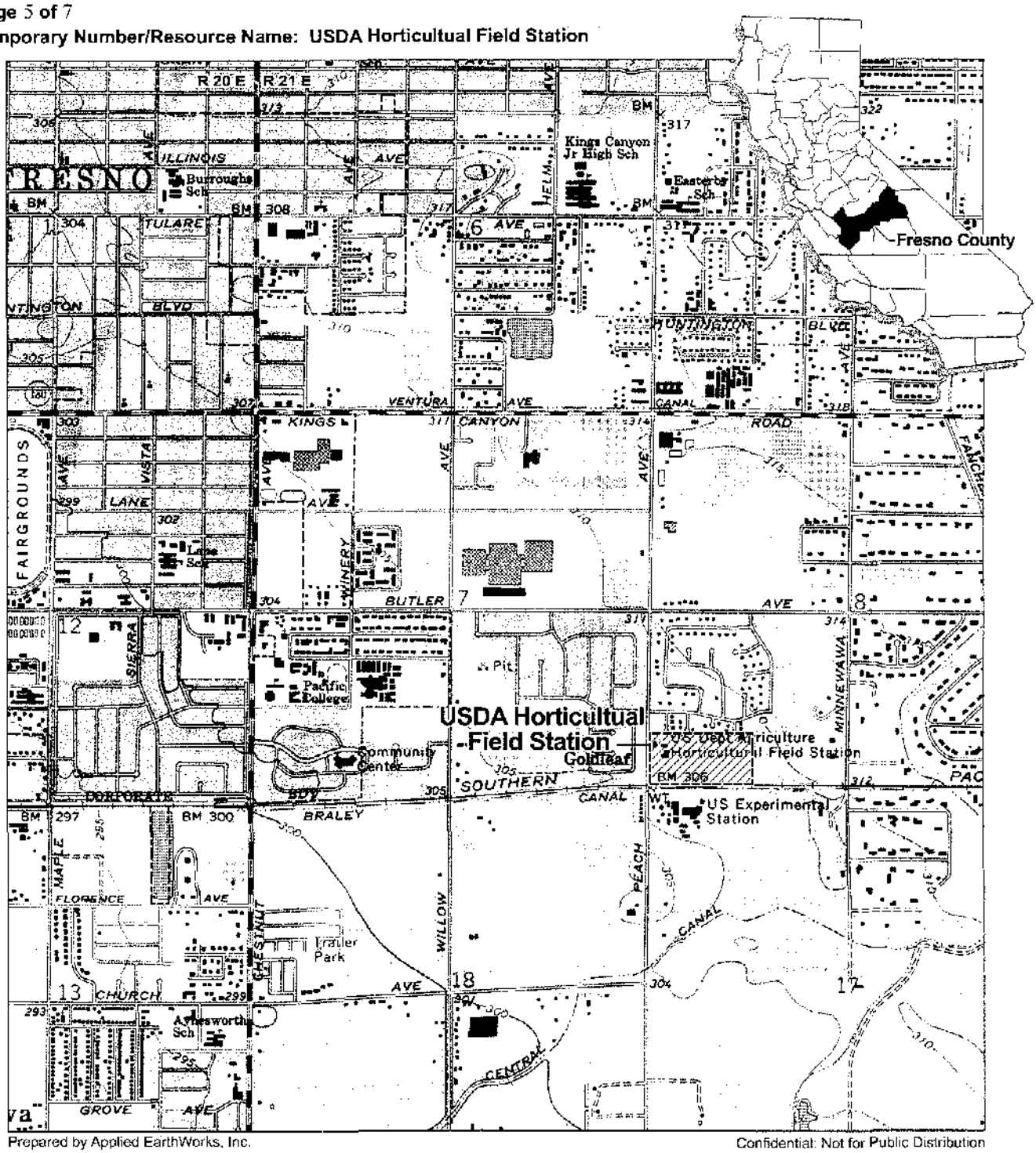
**Applied EarthWorks, Inc.**

# LOCATION MAP

Primary # P-10-005305
Trinomial



**Temporary Number/Resource Name: USDA Horticultual Field Station**



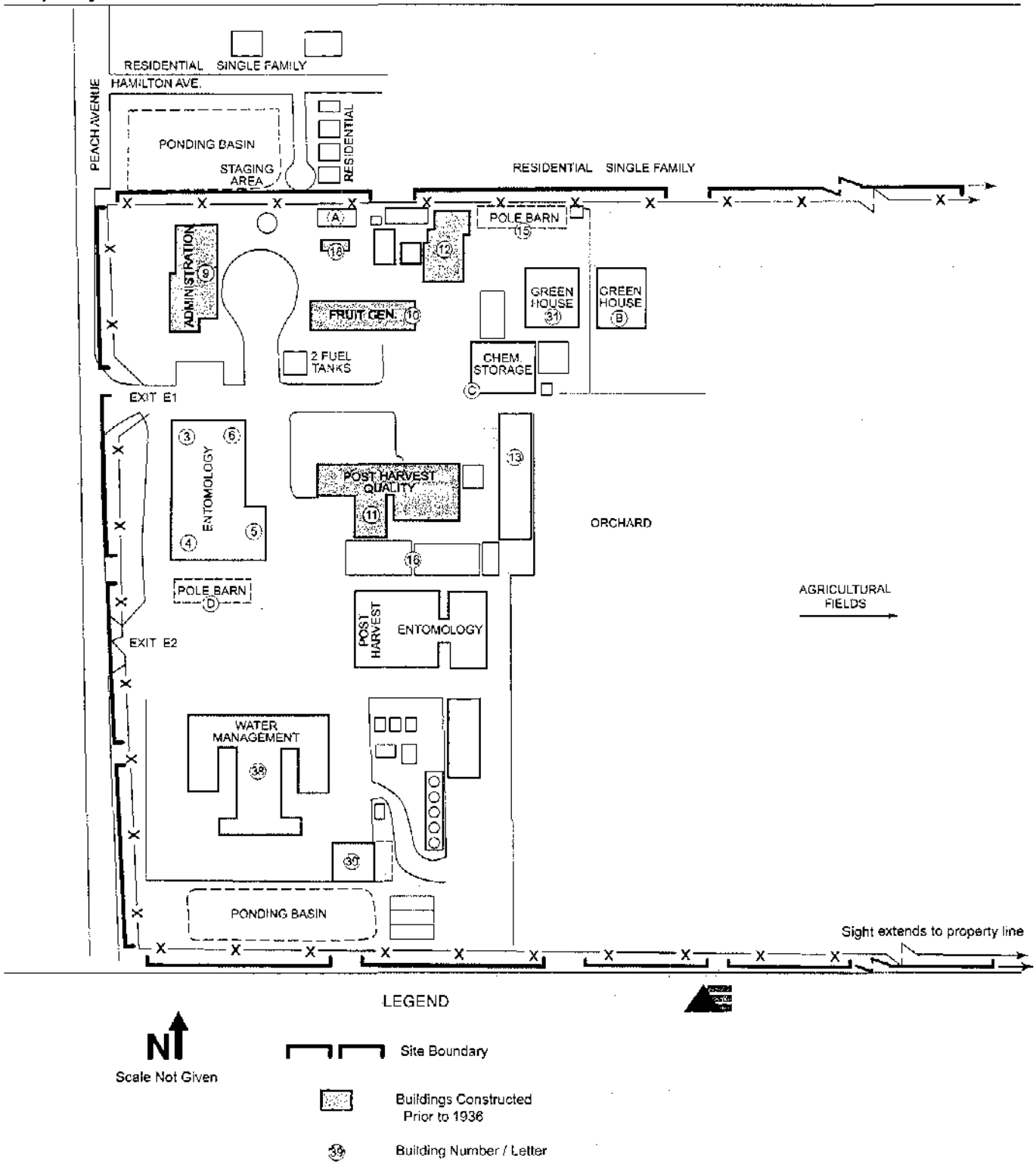

Prepared by Applied EarthWorks, Inc.

Confidential: Not for Public Distribution

U.S.G.S. 7.5 Minute Topographic Quadrangle
**Malaga, CA**
T 14 S - R 20 – 21 E
1964, Photorevised 1981

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RESIDENTIAL SINGLE FAMILY
HAMILTON AVE.
PEACH AVENUE
PONDING BASIN
STAGING AREA
RESIDENTIAL
RESIDENTIAL SINGLE FAMILY
POLE BARN
ADMINISTRATION
FRUIT GEN.
GREEN HOUSE
GREEN HOUSE
2 FUEL TANKS
CHEM. STORAGE
EXIT E1
ENTOMOLOGY
POST HARVEST QUALITY
ORCHARD
POLE BARN
EXIT E2
POST HARVEST
ENTOMOLOGY
AGRICULTURAL FIELDS
WATER MANAGEMENT
PONDING BASIN
Sight extends to property line
LEGEND
N
Scale Not Given
Site Boundary
Buildings Constructed Prior to 1936
Building Number / Letter

**Applied EarthWorks, Inc.**

# PHOTOGRAPH RECORD

Primary # P-10-005305

Trinomial



**Project Name:**

Roll No.: 940-1

Year:

Camera Type and Format: Nikon Coolpix 880

Film Type and Speed: Digital Color

Negatives Kept at: Applied EarthWorks, Inc., 5090 N. Fruit, Suite #101, Fresno, CA 93711

| Mo. | Day | Time | Fr. | Subject | Site | Unit | Level | Facing |
|---|---|---|---|---|---|---|---|---|
| 9 | 18 | 11:30 | dscn2 | Admin. Building #9 | | | | N |
| | | | dscn3 | Admin. Building #9 | | | | NW |
| | | | dscn4 | Admin. Building #9 | | | | SW |
| | | | dscn5 | Admin. Building #9 | | | | E |
| | | | dscn6 | Admin. Building #9 | | | | SE |
| | | | dscn7 | Admin. Building #9 | | | | N |
| | | | dscn8 | Lab Building #10 | | | | N |
| | | | dscn9 | Lab Building #10 | | | | NE |
| | | | dscn10 | Lab Building #10 | | | | SE |
| | | | dscn11 | Lab Building #10, Interior | | | | N |
| | | | dscn12 | Lab Building #10 | | | | SE |
| | | | dscn13 | Lab Building #10, Cellar Door | | | | S |
| | | | dscn14 | Lab Building #10, Outbuilding | | | | E |
| | | | dscn15 | Lab Building #11 | | | | E |
| | | | dscn16 | Lab Building #11 | | | | NE |
| | | | dscn17 | Lab Building #11 | | | | SE |
| | | | dscn18 | Lab Building #1, Interior | | | | |
| | | | dscn19 | Lab Building #11 | | | | NW |
| | | | dscn20 | Lab Building #11 | | | | NW |
| | | | dscn21 | Building #10(L), Building #12 (R) | | | | NW |
| | | | dscn22 | Building #12 | | | | W |
| | | | dscn23 | Building #12 | | | | NE |
| | | | dscn24 | Building #12, Back | | | | E |
| | | | dscn25 | Building #12, Interior | | | | |
| | | | dscn26 | Building #12, Greenhouse | | | | S |
| | | | dscn27 | Building #12, Refrigerated Box | | | | N |
| | | | dscn28 | Overview of Field (N. parcel) | | | | SE |
| | | | dscn29 | Shed SW of Building #10 | | | | W |
| | | | dscn30 | Building #38 | | | | S |
| | | | dscn31 | Ponding Basin | | | | E |
| | | | dscn32 | Overview, Bldg. #11(R), #10 (L) | | | | W |
| | | | dscn33 | Building #11, Interior-1st Floor | | | | |
| | | | dscn34 | Building #11, Interior-2nd Floor | | | | |
| | | | dscn35 | Building#11, Interior-Poster near stairs | | | | |
| 9 | 19 | 8:30 | dscn36 | Landscape Tree, Southern Parcel | | | | NW |
| | | | dscn37 | Ag Field, Southern Parcel | | | | SE |

# ATTACHMENT 2:

# Native American Consultation

# Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information

Return to CNAHC Home Page

## Sacred Lands File & Native American Contacts List Request

**NATIVE AMERICAN HERITAGE COMMISSION**
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

*Information Below is Required for a Sacred Lands File Search*

Project: Peach Avenue Widening Project, City of Fresno, CA

County Fresno

USGS Quadrangle

Name Malaga

Township 14S Range 21E Section(s) 7,8,18,18,19,20

Company/Firm/Agency:
Sierra Valley Cultural Planning

Contact Person: C. Kristina Roper

Street Address: 41945 Sierra Drive

City: Three Rivers Zip: 93271

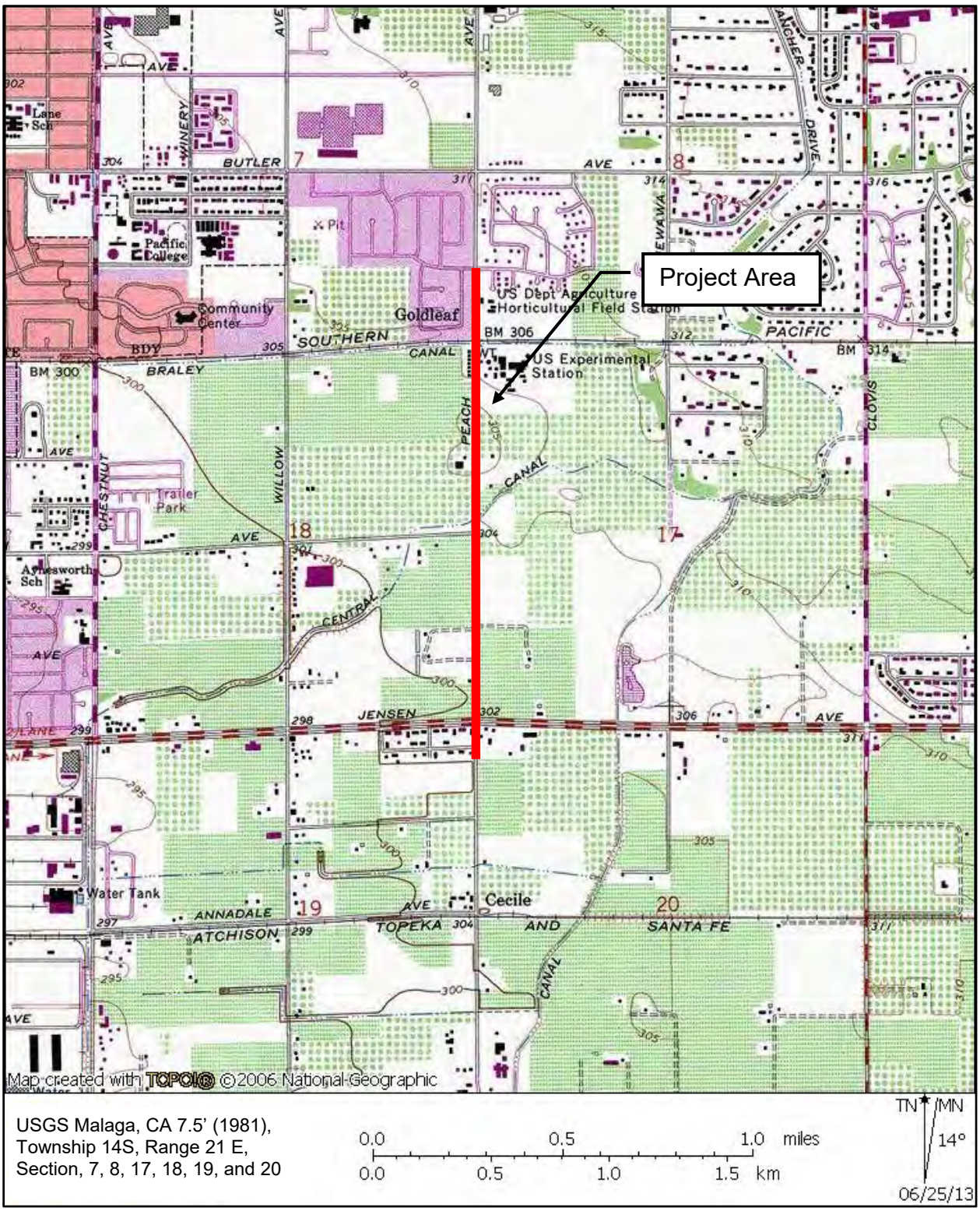
Phone: 559-288-6375

Fax: 559-561-6041

Email: kroper@wildblue.net

Project Description:

The project will involve the widening of Peach Avenue between Hamilton and 0.2 miles south of Jensen Avenues (approx. 1 1/2 miles) in southeast Fresno to arterial standards with all of the associated pavement, curb, gutter, sidewalk, drainage and utility improvements. I attach a map of the proposed project area.




**Map 1.** Peach Avenue Widening Project, City of Fresno, Fresno County, California.

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net

November 6, 2013

Ms. C. Kristina Roper, RPA
**Sierra Valley Cultural Planning**
41945 Sierra Drive
Three Rivers, CA 93271

Sent by FAX to: 559-561-6041
No. of Pages: 3

RE: Request for Sacred Lands File Search and Native American Contacts list for the **"Peach Avenue Widening Project, City of Fresno, CA; "** located in the City of Fresno; Fresno County, California

Dear Ms. Roper:

A record search of the NAHC Sacred Lands File **failed to indicate** the presence of Native American traditional cultural places in the project site(s) submitted as defined by the USGS coordinates configuring the 'Area of Potential Effect' or APE. Also, please note that the absence of archaeological recorded items does not preclude their existence within the footprint of the proposed project. Other data sources for Native American sacred places/sites should also be contacted. A Native American tribe or individual may be the only sources of information about traditional cultural places or sites.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the project area (APE). As part of the consultation process the NAHC recommends that local government and project developers contact the tribal governments and individuals in order to determine the proposed action on any cultural places/sacred sites. If a response from those listed is not received in two weeks of notification, the NAHC requests that a follow-up telephone call be made to ensure the project information has been received

If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

Dave Singleton
Program Analyst

Attachments

**Native American Contacts**
**Fresno County, California**
**November 6, 2013**

Big Sandy Rancheria of Mono Indians
Elizabeth Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 Western Mono
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
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559-855-4445 - FAX

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue Foothill Yokuts
Clovis , CA 93612-2211 Choinumni
(559) 307-6430

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93702 Mono
ledgerrobert@ymail.com
559-519-1742 - office

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O Box 18 Mono
Dunlap , CA 93621
mandy_marine@hotmail.com
559-274-1705

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 Mono
Dunlap , CA 93621 Foothill Yokuts
(559) 338-2354 Choinumni

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road North Valley Yokuts
Fresno , CA 93720
559-434-3160

**This list is current only as of the date of this document.**

**Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed Peach Av enue Widening Project, City of Fresno; located in Fresno County, California for which a Sacred Lands File search and Native American Contacts list were requested.**

# Native American Contacts
## Fresno County, California
## November 6, 2013

Kings River Choinumni Farm Tribe
Stan Alec
642 West Barstow Ave. #E — Foothill Yokuts
Clovis , CA 93612 — Choinumni

559-647-3227 - cell

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1099 Pistachio Avenue — Choinumni
Clovis , CA 96311 — Foothill YoKut
monoclovis@yahoo.com

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8 — Tachi
Lemoore , CA 93245 — Tache
(559) 924-1278 - Ext. 5 — Yokut
(559) 924-3583 - FAX

**This list is current only as of the date of this document.**

**Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed Peach Av enue Widening Project, City of Fresno; located in Fresno County, Californi: for which a Sacred Lands File search and Native American Contacts list were requested.**

# APPENDIX D

## *Noise & Groundborne Vibration Impact Analysis for Peach Avenue Widening Between E. Jensen and E. Butler Avenues Fresno, CA*

**Prepared by:**

**Ambient Air Quality & Noise Consulting**

**January 2019**

# NOISE & GROUNDBORNE VIBRATION IMPACT ANALYSIS

FOR

## S. PEACH AVENUE WIDENING BETWEEN E. JENSEN AND E. BUTLER AVENUES
FRESNO, CA

JANUARY 2019

**PREPARED FOR:**

ODELL PLANNING & RESEARCH, INC.
49346 Road 426, Suite 2
Oakhurst, CA 93644

**PREPARED BY:**

AMBIENT
AIR QUALITY & NOISE CONSULTING
612 12TH STREET, SUITE 201
PASO ROBLES, CA 93446

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**LIST OF COMMON TERMS AND ACRONYMS**

| | |
|---|---|
| ANSI | Acoustical National Standards Institute, Inc. |
| Caltrans | California Department of Transportation |
| CEQA | California Environmental Quality Act |
| CNEL | Community Noise Equivalent Level |
| dB | Decibels |
| dBA | A-Weighted Decibels |
| FHWA | Federal Highway Administration |
| FTA | Federal Transit Administration |
| Hz | Hertz |
| HVAC | Heating Ventilation & Air Conditioning |
| in/sec | Inches per Second |
| $L_{dn}$ | Day-Night Level |
| $L_{eq}$ | Energy-Equivalent Sound Level |
| $L_{max}$ | Maximum Sound Level |
| OPR | California Office of Planning & Research |
| Pk-Hr | Peak Hour |
| ppv | Peak Particle Velocity |
| U.S. EPA | United States Environmental Protection Agency |

# INTRODUCTION

This report discusses the existing noise setting and evaluates potential noise impacts associated with implementation of the proposed project. Noise mitigation measures are recommended where the predicted noise levels would exceed applicable noise standards.

### PROPOSED PROJECT SUMMARY

The proposed project includes the widening of S. Peach Avenue, between E. Butler Avenue and E. Jensen Avenue, and installation of various related improvements. At buildout, the project will widen Peach Avenue from two lanes to a divided four-lane arterial, and would provide improved safety for motorists and pedestrians.

# EXISTING SETTING

### CONCEPTS AND TERMINOLOGY

#### ACOUSTIC FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

#### *Amplitude*

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

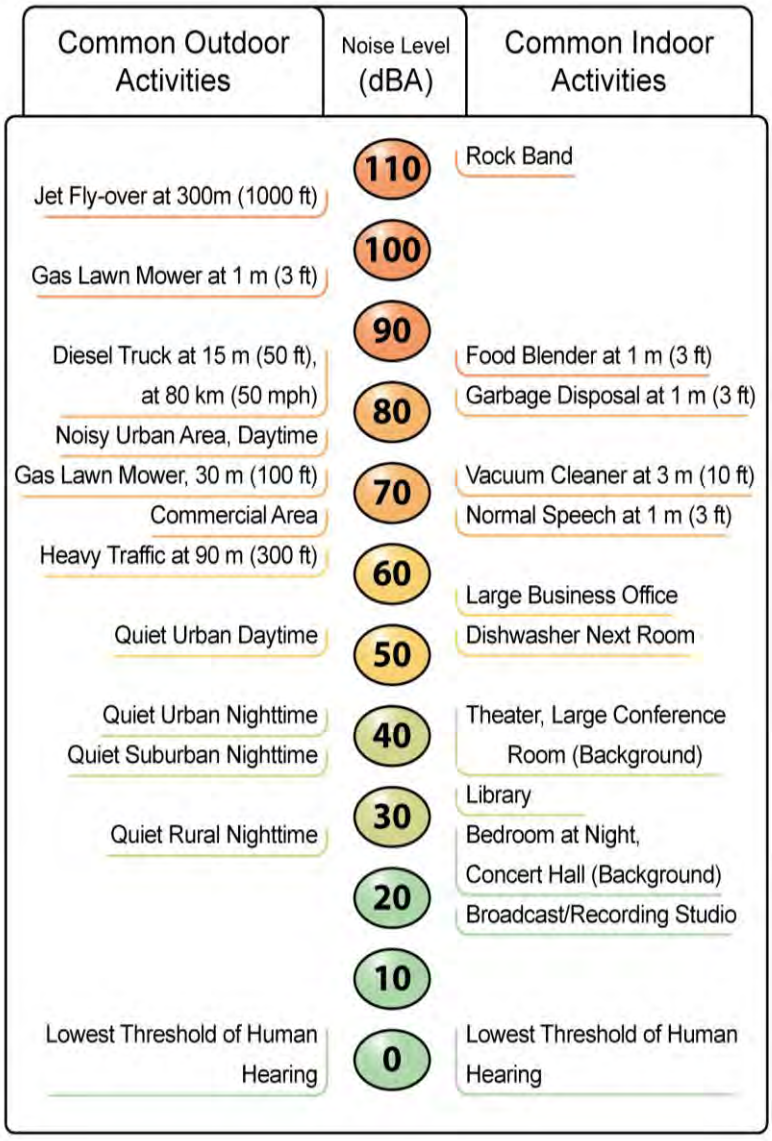
#### *Frequency*

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as “A-weighted decibels” (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA (U.S. EPA 1971). Common community noise sources and associated noise levels, in dBA, are depicted in Figure 1.

#### *Addition of Decibels*

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

**Figure 1. Common Noise Levels**




*Source: Caltrans 2018*

***Sound Propagation & Attenuation***

*Geometric Spreading*

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level decreases (attenuates) at a rate of approximately 6 decibels for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 decibels for each doubling of distance from a line source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water,), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those

sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation for soft surfaces results in an overall attenuation rate of 4.5 decibels per doubling of distance from the source.

*Atmospheric Effects*

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

*Shielding by Natural or Human-Made Features*

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-30 dBA, with windows closed. With compliance with current Title 24 energy efficiency standards, which require increased building insulation and inclusion of an interior air ventilation system to allow windows on noise-impacted façades to remain closed, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

## NOISE DESCRIPTORS

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound-pressure level in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies, which is referred to as the "A-weighted" sound level (expressed in units of dBA). The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B-, C-, and D-scales), but these scales are rarely used in conjunction with environmental noise.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are typically used. For the evaluation of environmental noise, the most commonly used descriptors are $L_{eq}$, $L_{dn}$, and CNEL. The energy-equivalent noise level, $L_{eq}$, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, $L_{dn}$, is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime

noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to $L_{dn}$ but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.) The calculated CNEL is typically approximately 0.5 dBA higher than the calculated $L_{dn}$. Common noise level descriptors are summarized in Table 1.

**Table 1. Common Acoustical Descriptors**

| Descriptor | Definition |
|---|---|
| Energy Equivalent Noise Level ($L_{eq}$) | The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated. |
| Minimum Noise Level ($L_{min}$) | The minimum instantaneous noise level during a specific period of time. |
| Maximum Noise Level ($L_{max}$) | The maximum instantaneous noise level during a specific period of time. |
| Day-Night Average Noise Level (DNL or $L_{dn}$) | The DNL was first recommended by the US EPA in 1974 as a "simple, uniform and appropriate way" of measuring long term environmental noise. DNL takes into account both the frequency of occurrence and duration of all noise events during a 24-hour period with a 10 dBA "penalty" for noise events that occur between the more noise-sensitive hours of 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours. |
| Community Noise Equivalent Level (CNEL) | The CNEL is similar to the $L_{dn}$ described above, but with an additional 5 dBA "penalty" added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated $L_{dn}$. |

## HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory environment, a 1-dB change is imperceptible;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

***Effects of Noise on Human Activities***

The extent to which environmental noise is deemed to result in increased levels of annoyance, activity interference, and sleep disruption varies greatly from individual to individual depending on various factors, including the loudness or suddenness of the noise, the information value of the noise (e.g., aircraft overflights, child crying, fire alarm), and an individual's sleep state and sleep habits. Over time, adaptation to noise events and increased levels of noise may also occur. In terms of land use compatibility, environmental noise is often evaluated in terms of the potential for noise events to result in increased levels of annoyance, sleep disruption, or interference with speech communication, activities, and learning. Noise-related effects on human activities are discussed in more detail, as follows:

*Speech Communication*

For most noise-sensitive land uses, an interior noise level of 45 dB $L_{eq}$ is typically identified for the protection of speech communication in order to provide for 100-percent intelligibility of speech sounds. Assuming a minimum 20-dB reduction in sound level between outdoors and indoors, with windows closed, this interior noise level of 45 dB $L_{eq}$ would equate to an exterior noise level of 65 dBA $L_{eq}$. For outdoor voice communication, an exterior noise level of 60 dBA $L_{eq}$ allows normal conversation at distances up to 2 meters with 95 percent sentence intelligibility (U.S. EPA 1974.) Based on this information, speech interference begins to become a problem when steady noise levels reach approximately 60 to 65 dBA. Within interior noise environments, an average-hourly background noise level of 45 dBA $L_{eq}$ is typically recommended for noise-sensitive land uses, such as educational facilities (Caltrans 2002).

*Learning*

Closely related to speech interference are the effects of noise on learning and, more broadly, on cognitive tasks. Recent studies have shown a strong relationship between noise and children's reading ability. Children's attention spans also appear to be adversely affected by noise. Adults are affected as well. Some studies indicate that, in a noisy environment, adults have increased difficulty accomplishing complex tasks. One of the issues associated with assessment of these effects is which noise metric correlates most closely with the impacts. For example, the average-daily noise level (i.e., CNEL/$L_{dn}$), which incorporates a nighttime weighting, may not be the best measure of noise impacts on schools given that operational activities are often limited to the daytime hours (Caltrans 2002).

Various standards and recommended criteria have been developed to specifically address classroom noise. For instance, with regard to transportation sources, the California Department of Transportation has adopted abatement criteria that limit the maximum interior average-hourly noise level within classrooms, as well as other noise-sensitive interior uses, to 52 dBA $L_{eq}$ (Caltrans 2013(a).) For schools, the City of Fresno General Plan (2014) identifies a worst-case hourly interior noise standard of 45 dBA $L_{eq}$.

*Annoyance & Sleep Disruption*

With regard to potential increases in annoyance, activity interference, and sleep disruption, land use compatibility determinations are typically based on the use of the cumulative noise exposure metrics (i.e., CNEL or $L_{dn}$). Perhaps the most comprehensive and widely accepted evaluation of the relationship between noise exposure and the extent of annoyance was one originally developed by Theodore J. Schultz in 1978. In 1978 the research findings of Theodore J. Schultz provided support for $L_{dn}$ as the descriptor for environmental noise. Research conducted by Schultz identified a correlation between the cumulative noise exposure metric and individuals who were highly annoyed by transportation noise. The Schultz curve, expressing this correlation, became a basis for noise standards. When expressed graphically, this relationship is typically referred to as the Schultz curve. The Schultz curve indicates that approximately 13 percent of the population is highly annoyed at a noise level of 65 dBA $L_{dn}$. It also indicates that the percent of people describing themselves as being highly annoyed accelerates smoothly

between 55 and 70 dBA $L_{dn}$. A noise level of 65 dBA $L_{dn}$ is a commonly referenced dividing point between lower and higher rates of people describing themselves as being highly annoyed (Caltrans 2002).

The Schultz curve and associated research became the basis for many of the noise criteria subsequently established for federal, state, and local entities. Most federal and state of California regulations and policies related to transportation noise sources establish a noise level of 65 dBA CNEL/$L_{dn}$ as the basic limit of acceptable noise exposure for residential and other noise-sensitive land uses. For outdoor activity areas of residential land uses, the City of Fresno General Plan (2014) identifies a maximum allowable noise standard of dBA CNEL/$L_{dn}$ to be applied within outdoor activity areas, and an interior noise standard of 45 dBA CNEL/$L_{dn}$.

Allowing for an average exterior-to-interior noise reduction of 15 dB, with windows partially open, an exterior noise level of 60 dBA CNEL/$L_{dn}$ would equate to an interior noise level of 45 dBA CNEL/$L_{dn}$. An interior noise level of 45 dB CNEL/$L_{dn}$ is generally considered sufficient to protect against activity interference at most noise-sensitive land uses, including residential dwellings, and would also be sufficient to protect against sleep interference (U.S. EPA, 1974.) Within California, the California Building Code establishes a noise level of 45 dBA CNEL as the maximum acceptable interior noise level for residential uses (other than detached single-family dwellings). Use of the 45 dBA CNEL threshold is further supported by recommendations provided in the State of California Office of Planning and Research's *General Plan Guidelines*, which recommend an interior noise level of 45 dB CNEL/$L_{dn}$ as the maximum allowable interior noise level sufficient to permit "normal residential activity" (OPR 2017.)

The cumulative noise exposure metric is currently the only noise metric for which there is a substantial body of research data and regulatory guidance defining the relationship between noise exposure, people's reactions, and land use compatibility. However, when evaluating environmental noise impacts involving intermittent noise events, such as aircraft overflights and train passbys, the use of cumulative noise metrics may not provide a thorough understanding of the resultant impact. The general public often finds it difficult to understand the relationship between intermittent noise events and cumulative noise exposure metrics. In such instances, supplemental use of other noise metrics, such as the $L_{eq}$ or $L_{max}$ descriptor, may be helpful as a means of increasing public understanding regarding the relationship between these metrics and the extent of the resultant noise impact (Caltrans 2002).

## AFFECTED ENVIRONMENT

### NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

Noise-sensitive land uses in the project area consist predominantly of residential land uses. In addition, Edith B. Storey Elementary School is located at the southeast corner of the Peach Avenue and E. Church Avenue intersection. Nearby noise-sensitive land uses are depicted in Figures 2a-2d.

### AMBIENT NOISE ENVIRONMENT

To document existing ambient noise levels in the project area, ambient noise measurements were conducted on November 1st and 2nd, 2018 using Larson Davis Laboratories, Type I, Model 820 integrating sound-level meters. The meters were calibrated before use and are certified to be in compliance with ANSI specifications. Measured ambient noise levels are summarized in Table 2. Average-daily noise levels measured along S. Peach Avenue are

depicted in Figure 3. Based on the measurements conducted, average-hourly traffic noise levels (in $L_{eq}$) in the vicinity of nearby noise-sensitive land uses typically range from the low 50's to the mid 60's. Average-hourly nighttime noise levels are generally 10-15 dB lower than daytime noise levels. Based on the measurements conducted, the calculated average-daily noise level (in dBA CNEL) at receivers located along Peach Avenue is estimated to be roughly equivalent to the peak-hour noise levels. Noise measurement locations are depicted in Figures 2a-2d.

**Table 2. Summary of Noise Measurement Surveys**

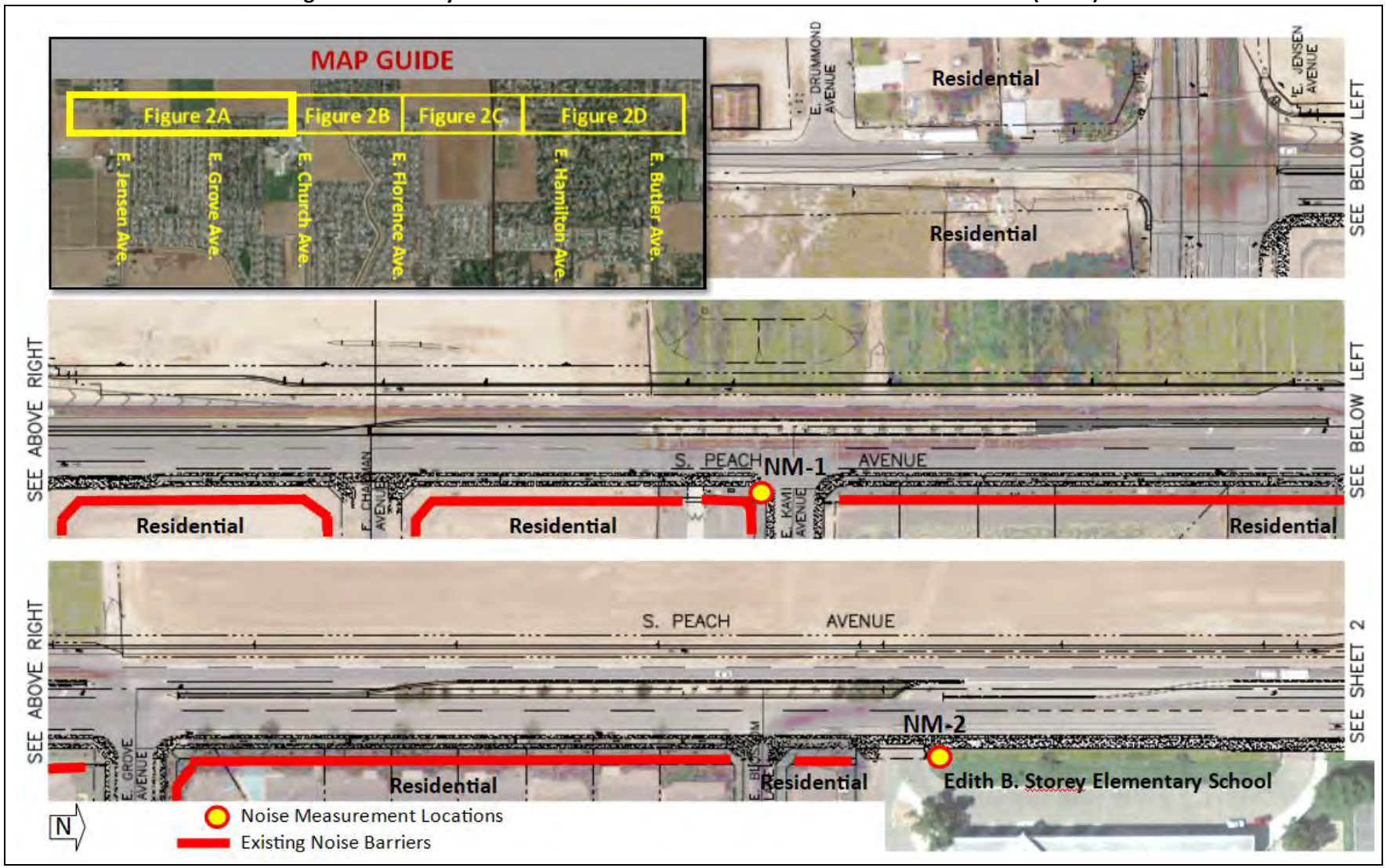
| Location | | Monitoring Period | Noise Levels (dBA) | | |
|---|---|---|---|---|---|
| | | | $L_{eq}$ | $L_{max}$ | CNEL |
| NM-1 | Peach Avenue at E. Kaviland Avenue, Approximately 55 feet from Roadway Centerline | November 2, 2018 1210 – 1220 | 62.9 | 77.9 | NM |
| NM-2 | Peach Avenue at E.B. Storey Elementary School, Approximately 60 feet from Roadway Centerline | November 2, 2018 1025 – 1035 | 63.8 | 75.2 | NM |
| NM-3 | Peach Avenue at E. Belgravia Avenue, Approximately 57 feet from Roadway Centerline | November 2, 2018 1000 – 1015 | 64.7 | 76.6 | NM |
| NM-4 | Peach Avenue at E. Geary Street, Approximately 52 feet from Roadway Centerline | November 2, 2018 1053 – 1103 | 63.6 | 77.5 | 66* |
| | | November 2, 2018 1200 – 1230 | 62.9 | 80.3 | |
| | | November 1, 2018 1715 – 1725 | 64.5 | 79.1 | NM |
| NM-5 | Peach Avenue at E. Hamilton Avenue, Approximately 55 feet from Roadway Centerline | November 2, 2018 1120 – 1130 | 65.3 | 78.2 | NM |

*Short-term noise measurements were conducted on November 2, 2018 using a Larson Davis Laboratories, Type I, Model 820 integrating sound-level meter.*
** Based on a long-term (24-hour) noise measurement survey conducted on November 1-2, 2018. Refer to Figure 3.*
*Refer to Figures 2a-2d for corresponding measurement locations.*

**Figure 3. Long-term Noise Measurement Survey at NM-4**

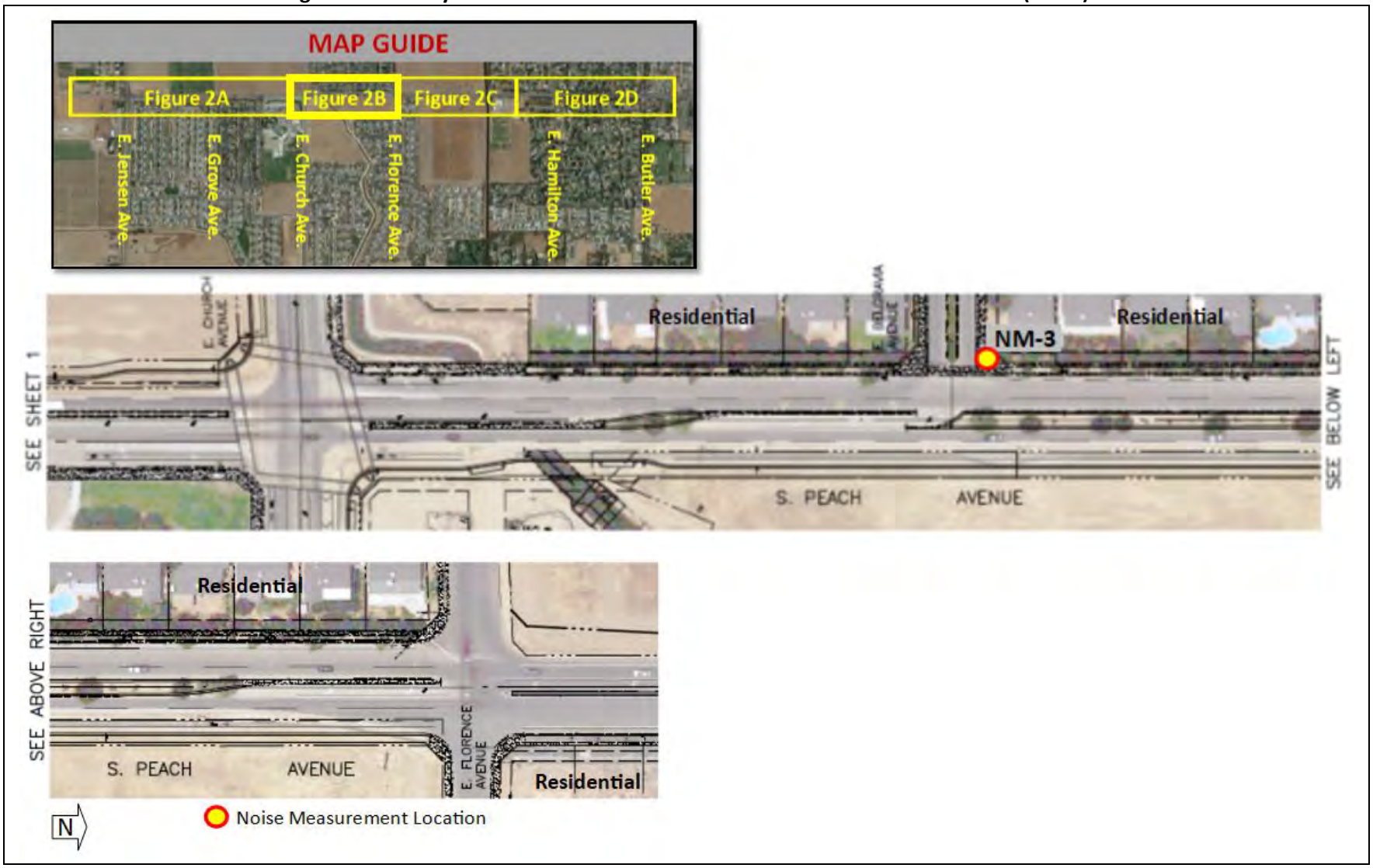


**Figure 2a. Nearby Noise-Sensitive Land Uses & Noise-Measurement Locations (1 of 4)**



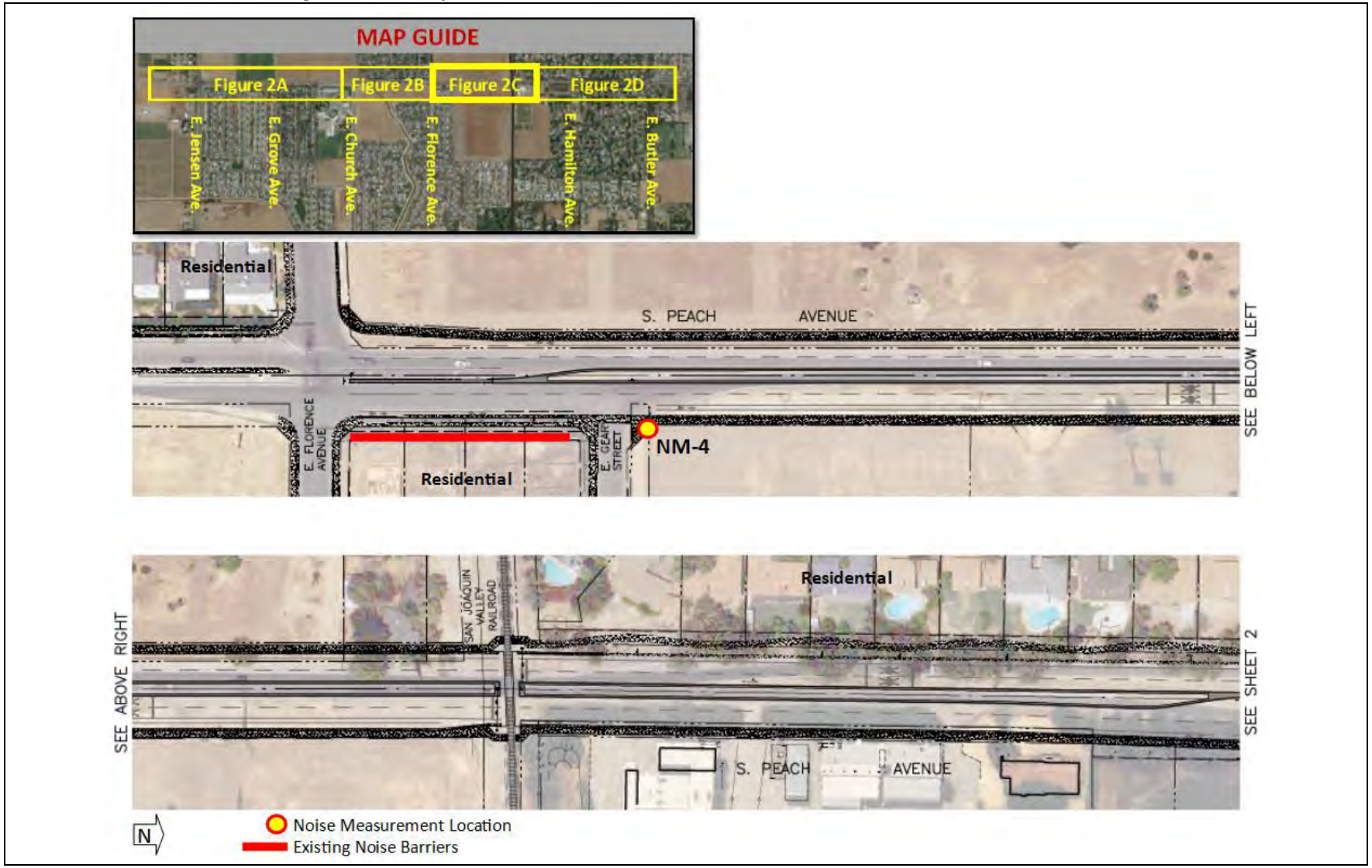

*Locations are approximate. Refer to Table 2 for noise-measurement data. Image Source: BCF 2018*

**Figure 2b. Nearby Noise-Sensitive Land Uses & Noise-Measurement Locations (2 of 4)**



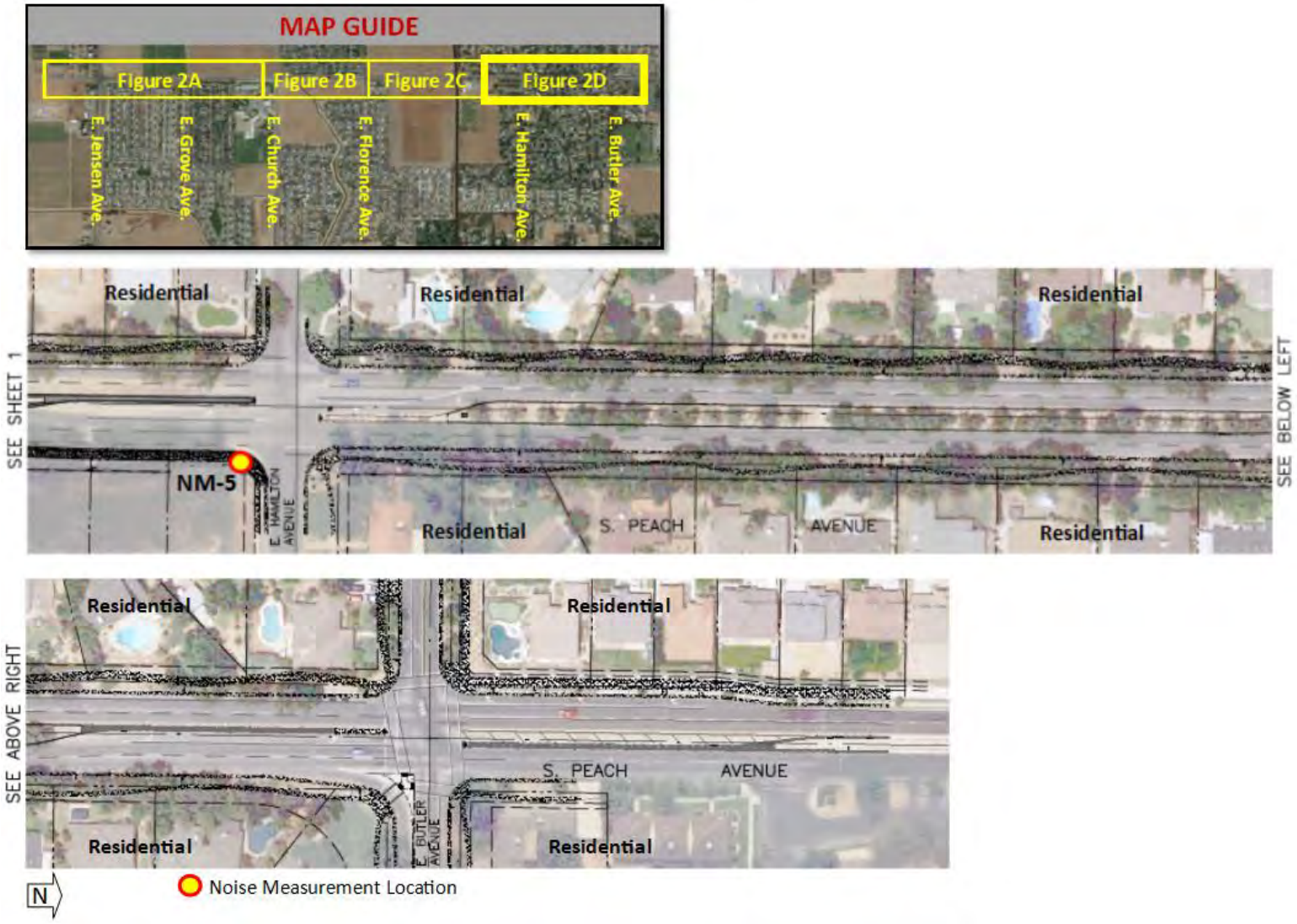

*Locations are approximate. Refer to Table 2 for noise-measurement data. Image Source: BCF 2018*

**Figure 2c. Nearby Noise-Sensitive Land Uses & Noise-Measurement Locations (3 of 4)**




*Locations are approximate. Refer to Table 2 for noise-measurement data. Image Source: BCF 2018*

**Figure 2d. Nearby Noise-Sensitive Land Uses & Noise-Measurement Locations (4 of 4)**




*Locations are approximate. Refer to Table 2 for noise-measurement data. Image Source: BCF 2018*

## REGULATORY FRAMEWORK

### NOISE

#### *City of Fresno General Plan*

The Fresno General Plan Noise Element includes noise standards for both stationary and transportation noise sources for determination of land use compatibility for new land uses and for evaluation of noise impacts to existing noise-sensitive land uses. The General Plan noise standards for transportation noise sources are summarized in Table 3.

**Table 3. City of Fresno General Plan**
**Maximum Allowable Noise Exposure - Transportation (Non-Aircraft) Noise Sources**

| LAND USE [1] | OUTDOOR ACTIVITY AREAS [2] ($CNEL/L_{dn}$ dBA) | INTERIOR SPACES (dBA) | |
|---|---|---|---|
| | | AVERAGE DAILY ($CNEL/L_{dn}$) | AVERAGE HOURLY ($L_{eq}$) [2] |
| Residential | 65 | 45 | -- |
| Transient Lodging | 65 | 45 | -- |
| Hospitals, Nursing Homes | 65 | 45 | -- |
| Theaters, Auditoriums, Music Halls | -- | -- | 35 |
| Churches, Meeting Halls | 65 | -- | 45 |
| Office Buildings | -- | -- | 45 |
| Schools, Libraries, Museums | -- | -- | 45 |

*1. Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.*

*2. As determined for a typical worst-case hour during periods of use.*

*Source: City of Fresno General Plan Noise Element (2014), Table 9-2.*

The City's General Plan also includes various policies to protect the citizens from the harmful and annoying effects associated with exposure to excessive noise. General Plan policies related to the proposed project are provided below:

- **Policy NS-1-b: Conditionally Acceptable Exterior Noise Exposure Range**. Establish the conditionally acceptable noise exposure level range for residential and other noise sensitive uses to be 65 dB $L_{dn}$ or require appropriate noise reducing mitigation measures as determined by a site specific acoustical analysis to comply with the desirable and conditionally acceptable exterior noise level and the required interior noise level standards set in Table 9-2 (refer to Table 3 of this report).
- **Policy NS-1-j: Significance Threshold**. Establish, as a threshold of significance for the City's environmental review process, that a significant increase in ambient noise levels is assumed if the project would increase noise levels in the immediate vicinity by 3 dB $L_{dn}$ or CNEL or more above the ambient noise limits established in this General Plan Update.
- **Policy NS-1-m: Transportation Related Noise Impacts**. For projects subject to City approval, require that the project sponsor mitigate noise created by new transportation and transportation-related stationary noise sources, including roadway improvement projects, so that resulting noise levels do not exceed the City's adopted standards for noise-sensitive land uses.

***City of Fresno Municipal Code***

The City of Fresno has also adopted a noise ordinance (Fresno Municipal Code, Chapter 10, Article 1) that contains additional noise performance standards intended to prevent noise which may create dangerous, injurious, noxious, or otherwise objectionable conditions. The City's noise ordinance standards are primarily used for the regulation of existing uses and activities, including construction activities, and are not typically used as a basis for land use planning. The ordinance establishes exterior standards, for daytime, evening, and nighttime periods, based on land use designations. Construction activities occurring during the daytime hours of 7:00 a.m. to 10:00 p.m., excluding Sundays, and emergency work, are exempt from the City's noise ordinance standards. The Fresno City noise ordinance standards are summarized in Table 4.

**Table 4. City of Fresno Noise Ordinance**
**Maximum Exterior Noise Standards Allowable without a Permit**

| LAND USE | NOISE LEVEL STANDARDS (dBA $L_{eq}$) | | |
|---|---|---|---|
| | DAYTIME (7 am - 7 pm) | EVENING (7 pm – 10 pm) | NIGHTTIME (10 pm – 7 am) |
| Residential | 60 | 55 | 50 |
| Commercial | 65 | 65 | 60 |
| Industrial | 70 | 70 | 70 |

*Construction activities occurring during the daytime hours of 7:00 a.m. to 10:00 p.m., excluding Sundays, and emergency work, are exempt from the City's noise ordinance standards.*

*Per Municipal Code Section 10-110, a permit may be issued authorizing noises prohibited by the City's Municipal Code whenever it is found that the public interest will be served thereby or that extreme hardship will result from the strict enforcement of the standards.*

*Source: City of Fresno Municipal Code §10-102(b)*

GROUNDBORNE VIBRATION

There are no federal, state, or local regulatory standards for groundborne vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans-recommended criteria for the evaluation of groundborne vibration levels, with regard to structural damage and human annoyance, are summarized in Table 5 and Table 6, respectively. The criteria differentiate between transient and continuous/frequent sources. Transient sources of groundborne vibration include intermittent events, such as blasting; whereas, continuous and frequent events would include the operations of equipment, including construction equipment, and vehicle traffic on roadways (Caltrans 2013(b)).

**Table 5. Damage Potential to Buildings at Various Groundborne Vibration Levels**

| Structure and Condition | Vibration Level (in/sec ppv) | |
|---|---|---|
| | Transient Sources | Continuous/Frequent Intermittent Sources |
| Extremely Fragile Historic Buildings, Ruins, Ancient Monuments | 0.12 | 0.08 |
| Fragile Buildings | 0.2 | 0.1 |
| Historic and Some Old Buildings | 0.5 | 0.25 |
| Older Residential Structures | 0.5 | 0.3 |
| New Residential Structures | 1.0 | 0.5 |
| Modern Industrial/Commercial Buildings | 2.0 | 0.5 |

*Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.*

*Source: Caltrans 2013(b)*

**Table 6. Annoyance Potential to People at Various Groundborne Vibration Levels**

| Human Response | Vibration Level (in/sec ppv) | |
|---|---|---|
| | Transient Sources | Continuous/Frequent Intermittent Sources |
| Barely Perceptible | 0.04 | 0.01 |
| Distinctly Perceptible | 0.25 | 0.04 |
| Strongly Perceptible | 0.9 | 0.10 |
| Severe | 2.0 | 0.4 |

*Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.*
*Source: Caltrans 2013(b)*

The groundborne-vibration criteria recommended by Caltrans for evaluation of potential structural damage is based on building classifications, which take into account the age and condition of the building. For residential structures and newer buildings, Caltrans considers a minimum peak-particle velocity (ppv) threshold of 0.5 inches per second (in/sec) for transient sources and 0.3 in/sec for continuous/frequent sources to be sufficient to protect against building damage. With the exception of fragile buildings, ruins, and ancient monuments, continuous groundborne-vibration levels below approximately 0.2 in/sec ppv are unlikely to cause structural damage. In terms of human annoyance, continuous vibrations in excess of 0.04 in/sec ppv and transient sources in excess of 0.25 in/sec ppv are identified by Caltrans as being "distinctly perceptible". Within buildings, short periods of ground vibration in excess of 0.2 in/sec ppv are generally considered to result in increased levels of annoyance (Caltrans 2013(b)).

# IMPACTS AND MITIGATION MEASURES

## METHODOLOGY

Short-term noise impacts associated with construction activities were analyzed based on typical construction equipment noise levels and distances to the nearest noise-sensitive land uses. Noise levels were predicted based on an average noise-attenuation rate of 6 dB per doubling of distance from the source utilizing the Federal Highway Administration (FHWA) *Roadway Construction Noise Model*.

Traffic noise levels were calculated using the FHWA Traffic Noise Model, version 2.5, based on data obtained from the traffic analysis prepared for this project. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. To determine changes in traffic noise levels attributable to the proposed project, traffic noise levels for Peach Avenue were modeled at various receiver locations. Receiver locations were placed at the nearest property line in areas considered to be representative of the existing land uses in the project area. Increases in traffic noise levels attributable to the proposed project were calculated by comparing the predicted noise levels with and without project implementation. It is important to note that the traffic noise modeling was conducted for the purpose of evaluating changes in noise levels attributable to vehicle traffic on Peach Avenue that would occur with project implementation. The modeling does not take into account the contribution from other noise sources or roadways within the project area. Where present, noise-attenuation associated with existing noise barriers was included. Noise modeling input files and modeled traffic noise levels are included in Appendix A.

## THRESHOLDS OF SIGNIFICANCE

Criteria for determining the significance of noise impacts were developed based on information contained in the California Environmental Quality Act Guidelines (CEQA Guidelines, Appendix G). According to those guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies.
2. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
5. For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels.
6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The nearest airport/airstrip is the Fresno-Yosemite International Airport, which is located approximately 2.5 miles north of the project site. Implementation of the proposed project would not affect airport operations, nor would implementation of the proposed project result in the development or relocation of any noise-sensitive land uses in proximity to any airport or airstrip. As a result, implementation of the proposed project would not result in increased exposure of individuals to excessive aircraft noise levels associated with the existing airport. There are no existing private airstrips within the vicinity of the project area. For these reasons, noise impacts associated with exposure to aircraft noise levels were identified as being less than significant or having no impact and will not be further discussed in this report.

For purposes of this analysis and where applicable, applicable City of Fresno noise standards and policies were used for evaluation of project-related noise impacts. Accordingly, construction activities that would exceed the City's municipal code requirements would be considered to result in a potentially significant impact. In accordance with the City's General Plan Policy NS-1-j, long-term increases in traffic noise levels of 3 dB, or greater, within the outdoor activity areas of nearby noise-sensitive land uses would be considered potentially significant. In addition, in accordance with General Plan Policy NS-1-m, predicted traffic noise levels at nearby noise-sensitive land uses that would exceed the City's noise-compatibility standards would also be considered to have a potentially-significant noise impact.

The CEQA Guidelines do not define the levels at which groundborne vibration levels would be considered excessive. For this reason, Caltrans' recommended groundborne vibration thresholds were used for the evaluation of impacts based on increased potential for structural damage and human annoyance, as identified in Table 5 and Table 6, respectively.

### PROJECT IMPACTS

| | |
|---|---|
| ***IMPACT NOISE-1:*** | ***Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*** |

Implementation of the proposed project would not result in a significant long-term increases in traffic noise levels at nearby noise-sensitive land uses. However, predicted traffic noise levels at some nearby residential land uses would be projected to exceed the City's noise standards for land use compatibility. In addition, short-term construction related noise levels could potentially adversely affect nearby noise-sensitive land uses. For residential land uses, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of sleep disruption to occupants of nearby residential dwellings. Typically,

construction-related activities occurring during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) would not be exempt from noise ordinance requirements. Construction activities occurring during the nighttime hours could potentially exceed City of Fresno noise ordinance requirements. For these reasons, this impact is considered potentially significant. Refer to *Impact Noise-2* and *Impact Noise-3* for additional discussions of short-term and long-term noise impacts and recommended mitigation measures.

***IMPACT NOISE-2:*** ***Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?***

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., land clearing, grading, excavation, and paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Although noise ranges are generally similar for all construction phases, the initial site preparation phase tends to involve the most heavy-duty equipment having a higher noise-generation potential. Noise levels associated with individual construction equipment is summarized in Table 7.

As depicted in Table 7, noise levels generated by individual pieces of construction equipment typically associated with road-widening projects range from approximately 77 dBA to 89 dBA at 50 feet (FTA 2006). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average-hourly noise levels associated with road improvement projects can vary, reaching levels of up to approximately 83 dBA $L_{eq}$ at 50 feet, depending on the activities performed and equipment being used. Short-term increases in vehicle traffic, including worker commute trips and haul truck trips may also result in temporary increases in ambient noise levels at nearby receivers.

As noted earlier in this report, noise-sensitive land uses in the project area include residential dwellings, the nearest of which would be located within approximately 25 feet of construction activities. Edith B. Storey Elementary School is located at the southeast corner of the E. Church Avenue and Peach Avenue intersection. The nearest school building is located approximately 125 feet from Peach Avenue. Based on these distances and assuming an average construction noise level of 83 dBA $L_{eq}$ at 50 feet, predicted exterior construction-generated noise levels could reach levels of approximately 89 dBA $L_{eq}$ at these nearest residential land uses and approximately 77 dBA $L_{eq}$ at the nearest elementary school building. Based on these same assumptions and assuming an average exterior-to-interior noise reduction of 20 dBA, construction activities occurring within approximately 500 feet of Edith B. Storey Elementary School could result in interior noise levels in excess of approximately 45 dBA $L_{eq}$ within nearby classrooms. As noted earlier in this report, interior noise levels in excess of 45 dBA $L_{eq}$ may result in increased levels of annoyance and potential interference with classroom instructional activities.

For residential land uses, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of sleep disruption to occupants of nearby residential dwellings. Typically, construction-related activities occurring during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) would not be exempt from noise ordinance requirements. The proposed project, however, does not identify hourly restrictions for construction activities.

For the reasons discussed above, noise-generating construction activities would be considered to have a potentially significant short-term noise impact to occupants of nearby residential land uses and the Edith B. Storey Elementary School.

**Table 7. Typical Construction Equipment Noise Levels**

| Equipment | Typical Noise Level (dBA) 50 feet from Source | |
|---|---|---|
| | $L_{max}$ | $L_{eq}$ |
| Backhoe | 78 | 74 |
| Compactor | 83 | 76 |
| Concrete Mixer | 79 | 75 |
| Crane, Mobile | 81 | 73 |
| Dozer | 82 | 78 |
| Excavator | 81 | 77 |
| Front End Loader | 79 | 75 |
| Generator | 81 | 78 |
| Grader | 85 | 81 |
| Jack Hammer | 89 | 82 |
| Pavement Scarafier | 90 | 83 |
| Paver | 77 | 74 |
| Roller | 80 | 73 |
| Tractor | 84 | 80 |
| *Based on measured instantaneous noise levels ($L_{max}$), average equipment usage rates, and calculated average-hourly ($L_{eq}$) noise levels derived from the FHWA Road Construction Noise Model (FHWA 2008)* | | |

***Mitigation Measure***

**Noise-1:** The following measures shall be implemented to reduce construction-generated noise levels:

a. Construction activities (excluding activities that would result in a safety concern to the public or construction workers, would result in an extreme hardship, or instances where the City finds that the greater public interest would be served) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m., in accordance with City of Fresno Municipal Code requirements. Construction activities shall be prohibited on Sundays and legal holidays.

b. Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

c. Edith B. Storey Elementary School shall be notified a minimum of one week prior to commencing construction activities within 500 feet of the school. Notification shall be provided so that any necessary precautions (such as rescheduling or relocation of interior noise-sensitive activities) can be implemented. The written notice shall include the name and telephone number of the individual empowered to manage construction noise from the project. In the event that noise complaints are received, the individual empowered to manage construction noise shall respond to the complaint within 12 hours. To the extent feasible, the response shall include identification of measures being taken to reduce construction-related noise. Such measures may include, but are not limited to, rescheduling

of construction activities, relocation of equipment, and/or use of equipment noise shields or temporary noise barriers.

***Significance After Mitigation***

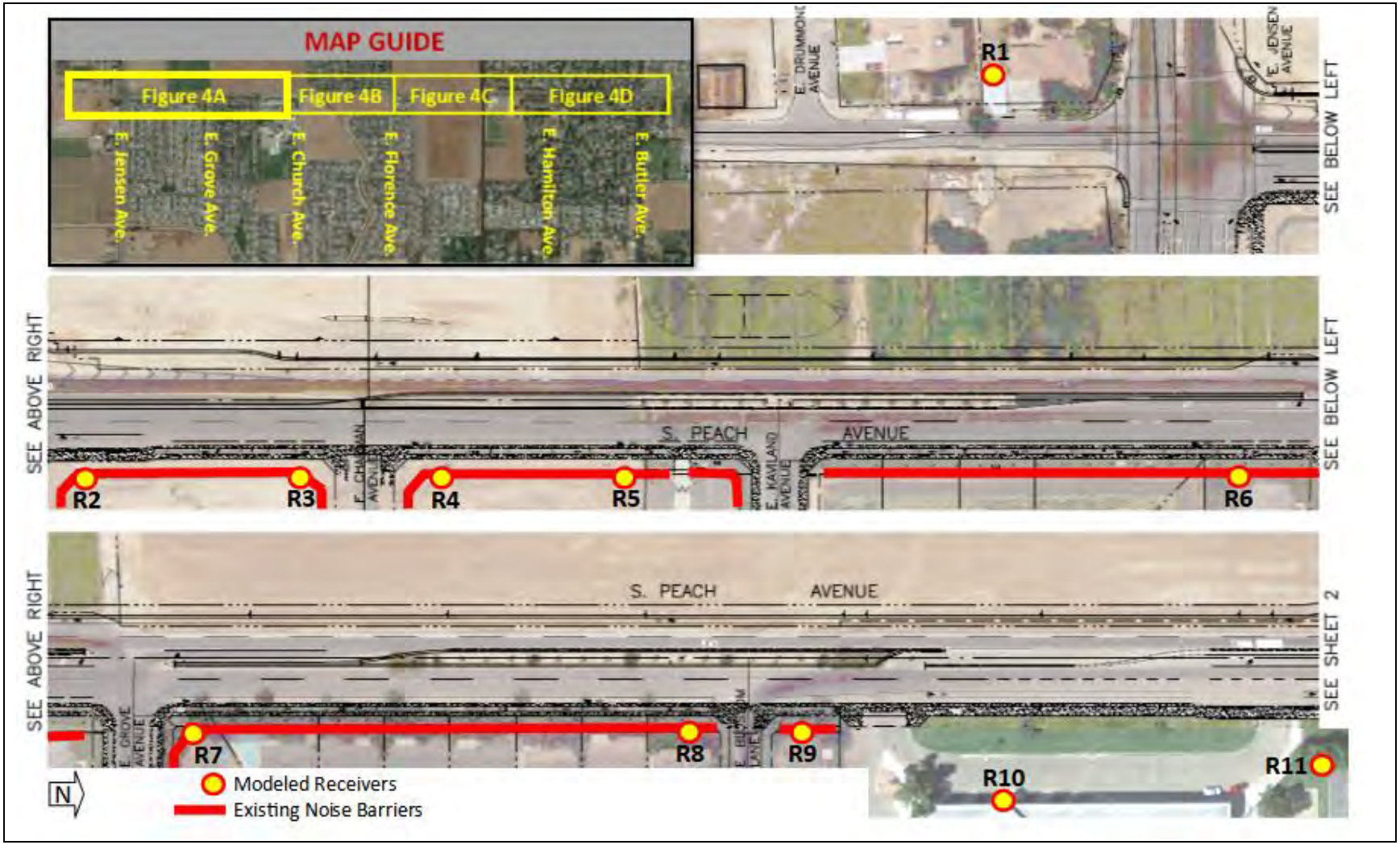
Implementation of the above mitigation measures would limit construction activities to the less noise-sensitive periods of the day, consistent with requirements typically imposed for noise-generating construction activities by the City of Fresno. The use of mufflers would reduce individual equipment noise levels by approximately 10 dBA. Coordination with Edith B. Storey Elementary School would also be required to minimize potential impacts to nearby interior classroom activities. With implementation of the above mitigation measures and given that construction-generated noise impacts would be short-term, this impact would be considered less than significant.

| | |
|---|---|
| ***IMPACT NOISE-3:*** | ***Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*** |

Traffic noise levels were calculated using the FHWA Traffic Noise Model, version 2.5, based on data obtained from the traffic analysis prepared for this project. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. The TNM model was calibrated using existing noise measurement data. Increases in traffic noise levels attributable to the proposed project were calculated by comparing the predicted noise levels at nearby noise-sensitive land uses with and without project implementation. Modeled receiver locations are depicted in Figures 4a-4d. Predicted existing and future cumulative traffic noise levels, with and without project implementation, are summarized in Table 8 and Table 9, respectively.

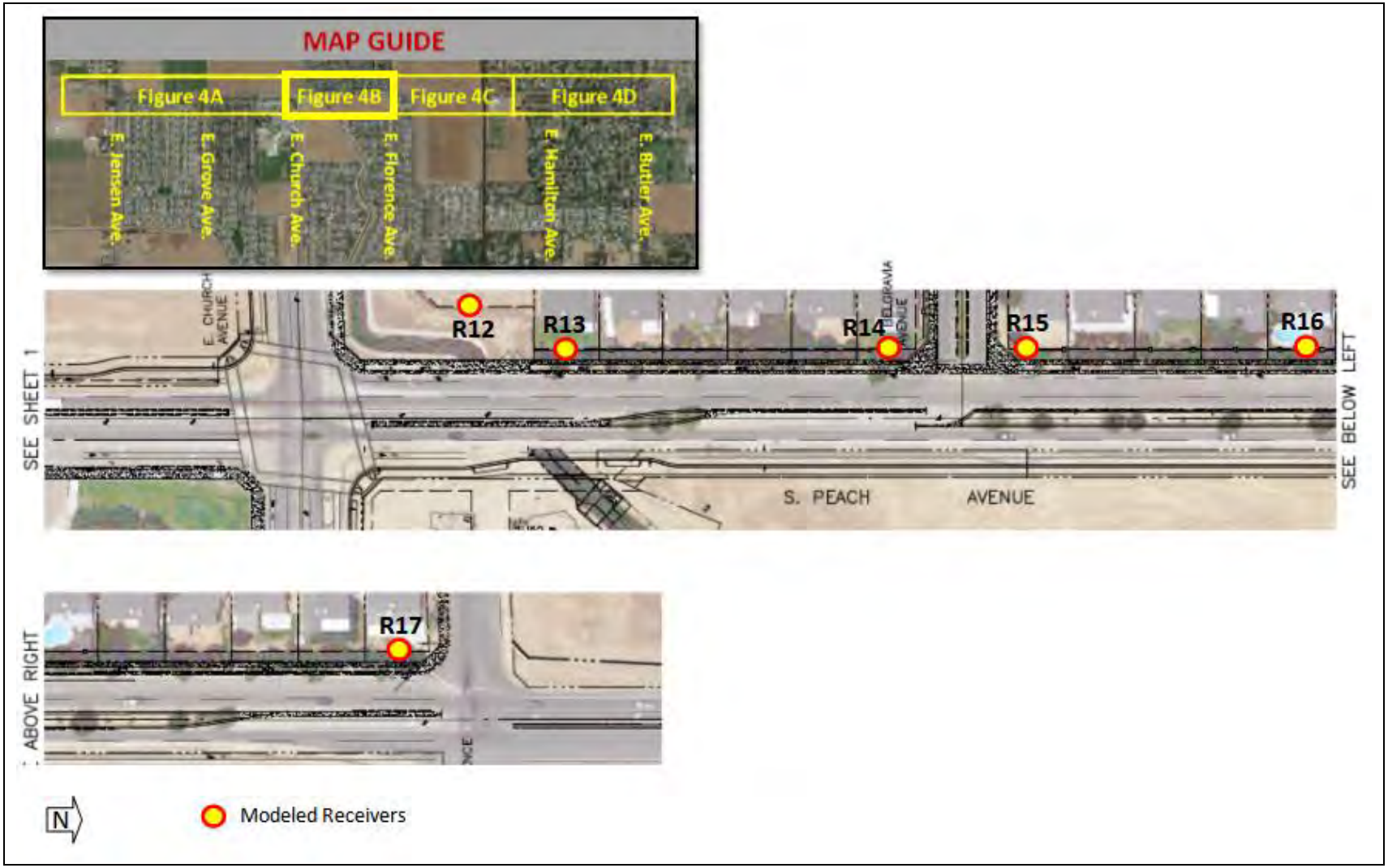
With project implementation, some vehicle traffic along Peach Avenue may be located either closer to or further from nearby existing receivers. As a result, traffic noise levels are projected to increase slightly at some receiver locations and decrease slightly at other locations. As depicted in Table 8 and Table 9, predicted existing exterior noise levels at the nearest primarily affected residential dwellings would increase by approximately 1.3 dB, or less. Predicted traffic noise levels at Edith B. Storey Elementary School, with project implementation, would increase by approximately 0.1 dB. Implementation of the proposed project would not result in a significant increase in traffic noise levels (i.e., 3 dB, or greater) at the nearest noise-sensitive land uses. This impact would be considered less than significant.

**Figure 4a. Modeled Receiver Locations (1 of 4)**



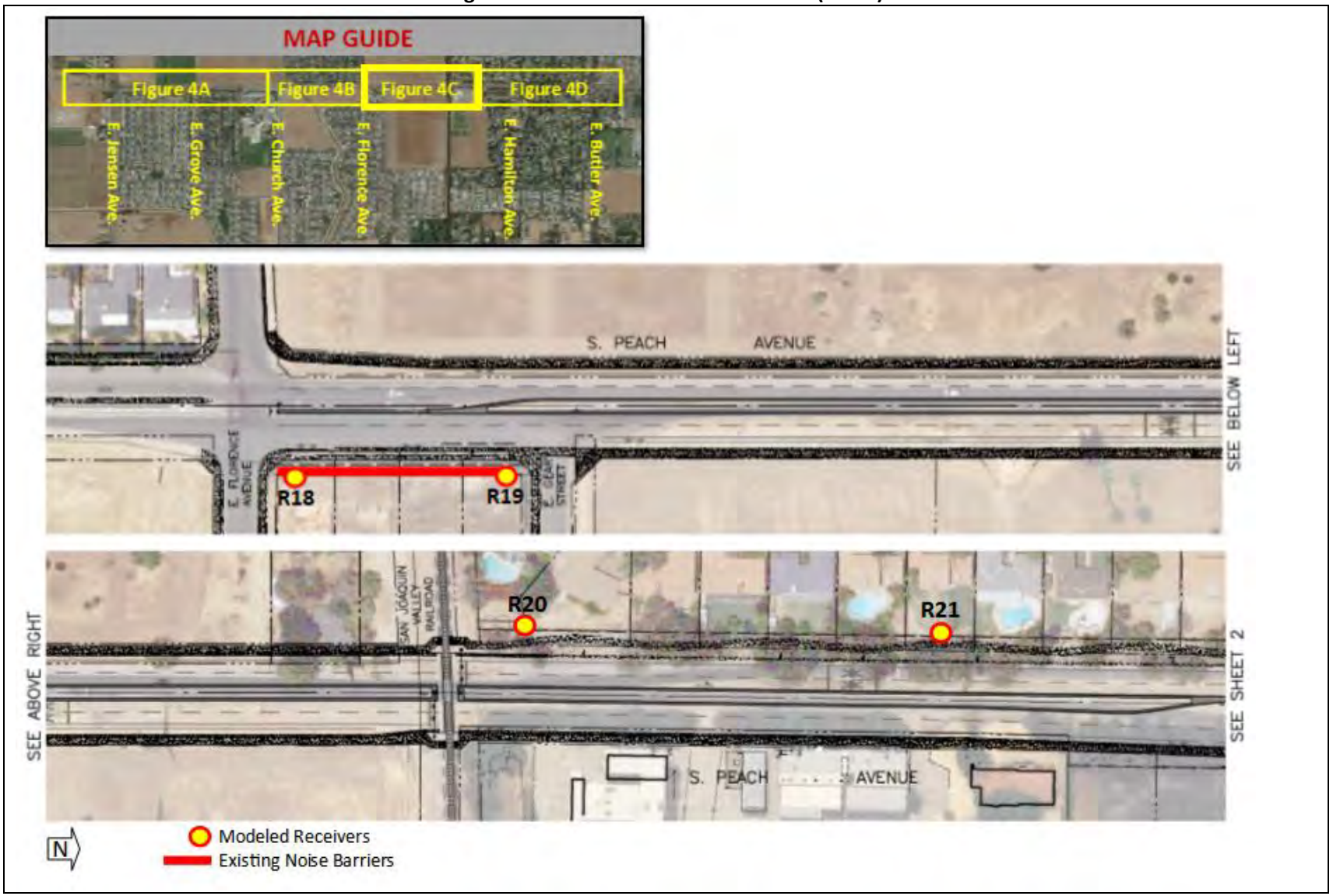

*Not to scale. Receiver locations are approximate. Image Source: BCF 2018*

**Figure 4b. Modeled Receiver Locations (2 of 4)**



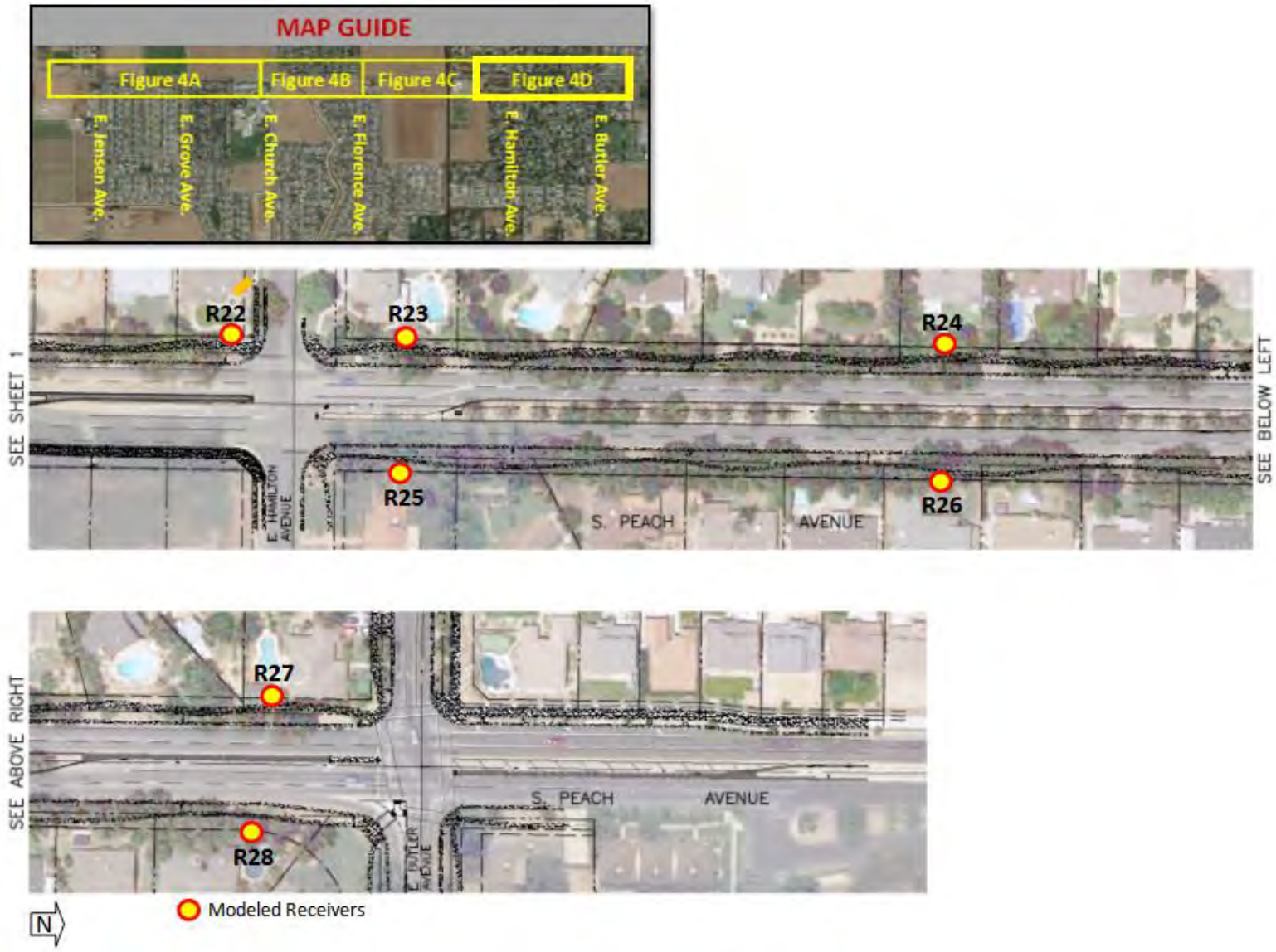

*Not to scale. Receiver locations are approximate. Image Source: BCF 2018*

**Figure 4c. Modeled Receiver Locations (3 of 4)**




*Not to scale. Receiver locations are approximate. Image Source: BCF 2018*

**Figure 4d. Modeled Receiver Locations (4 of 4)**




*Not to scale. Receiver locations are approximate. Image Source: BCF 2018*

**Table 8. Predicted Traffic Noise Levels – Existing Conditions**

| Receiver/Land Use | | Predicted Exterior Noise Level (dBA CNEL/$L_{dn}$)[1] | | | |
|---|---|---|---|---|---|
| | | Without Project | With Project | Difference[2] | Significant Increase?[3] |
| | | | | | |
| R1 | Residential | 61.9 | 62.1 | 0.2 | No |
| R2 | Residential | 55.0 | 55.2 | 0.2 | No |
| R3 | Residential | 55.2 | 55.4 | 0.2 | No |
| R4 | Residential | 55.7 | 55.9 | 0.2 | No |
| R5 | Residential | 55.5 | 55.7 | 0.2 | No |
| R6 | Residential | 55.5 | 55.6 | 0.1 | No |
| R7 | Residential | 55.7 | 55.8 | 0.1 | No |
| R8 | Residential | 54.8 | 54.9 | 0.1 | No |
| R9 | Residential | 55.0 | 55.1 | 0.1 | No |
| R10 | Elementary School – Nearest Classroom | 29.6[4] | 29.7[4] | 0.1 | No |
| R11 | Elementary School – Outdoor Playground | 51.0 | 51.1 | 0.1 | No |
| **Figure 3b** | | | | | |
| R12 | Residential | 60.4 | 61.3 | 0.9 | No |
| R13 | Residential | 66.0 | 66.9 | 0.9 | No |
| R14 | Residential | 66.3 | 67.1 | 0.8 | No |
| R15 | Residential | 66.2 | 67.2 | 1.0 | No |
| R16 | Residential | 66.5 | 67.4 | 0.9 | No |
| R17 | Residential | 66.4 | 67.4 | 1.0 | No |
| **Figure 3c** | | | | | |
| R18 | Residential | 58.2 | 59.2 | 1.0 | No |
| R19 | Residential | 58.1 | 58.9 | 0.8 | No |
| R20 | Residential | 65.1 | 66.4 | 1.3 | No |
| R21 | Residential | 66.3 | 66.4 | 0.1 | No |

**Table 8. Predicted Traffic Noise Levels – Existing Conditions**

| Receiver/Land Use | | Predicted Exterior Noise Level (dBA CNEL/$L_{dn}$)[1] | | | |
|---|---|---|---|---|---|
| | | Without Project | With Project | Difference[2] | Significant Increase?[3] |
| **Figure 3d** | | | | | |
| R22 | Residential | 66.2 | 66.1 | -0.1 | No |
| R23 | Residential | 66.5 | 66.3 | -0.2 | No |
| R24 | Residential | 66.4 | 66.4 | 0.0 | No |
| R25 | Residential | 66.1 | 66.8 | 0.7 | No |
| R26 | Residential | 66.6 | 66.6 | 0.0 | No |
| R27 | Residential | 66.3 | 66.3 | 0.0 | No |
| R28 | Residential | 66.3 | 66.3 | 0.0 | No |

*1. Traffic noise levels were calculated using the FHWA TNM model based on data obtained from the traffic analysis prepared for this project. Includes reductions for intervening sound barriers, where present.*

*2. Difference in noise levels reflects the incremental increase attributable to the proposed project.*

*3. In accordance with the City's General Plan Policy NS-1-j, a significant increase is defined as an increase of 3 dB, or more.*

*4. Represents predicted peak-hour interior traffic noise level. Based on predicted exterior noise level at building façade and assuming a commonly applied exterior-to-interior average noise reduction of 25 dB.*

*Refer to Figures 4a-4d for receiver locations.*

**Table 9. Predicted Traffic Noise Levels – Future Cumulative Conditions**

| Receiver /Land Use | | Predicted Exterior Noise Level (dBA CNEL/$L_{dn}$)[1] | | | |
|---|---|---|---|---|---|
| | | Without Project | With Project | Difference[2] | Significant Increase?[3] |
| **Figure 3a** | | | | | |
| R1 | Residential | 62.9 | 63.1 | 0.2 | No |
| R2 | Residential | 55.9 | 56.1 | 0.2 | No |
| R3 | Residential | 56.1 | 56.3 | 0.2 | No |
| R4 | Residential | 56.6 | 56.8 | 0.2 | No |
| R5 | Residential | 56.4 | 56.6 | 0.2 | No |
| R6 | Residential | 56.2 | 56.3 | 0.1 | No |
| R7 | Residential | 56.6 | 56.7 | 0.1 | No |
| R8 | Residential | 55.7 | 55.8 | 0.1 | No |
| R9 | Residential | 55.9 | 56.0 | 0.1 | No |
| R10 | Elementary School – Nearest Classroom | 55.5 | 55.6 | 0.1 | No |
| R11 | Elementary School – Outdoor Playground | 51.9 | 52.0 | 0.1 | No |
| **Figure 3b** | | | | | |
| R12 | Residential | 62.7 | 63.6 | 0.9 | No |
| R13 | Residential | 68.3 | 69.2 | 0.9 | No |
| R14 | Residential | 68.6 | 69.4 | 0.8 | No |
| R15 | Residential | 68.5 | 69.5 | 1.0 | No |
| R16 | Residential | 68.8 | 69.7 | 0.9 | No |
| R17 | Residential | 68.6 | 69.6 | 1.0 | No |
| **Figure 3c** | | | | | |
| R18 | Residential | 60.3 | 61.3 | 1.0 | No |
| R19 | Residential | 60.2 | 61.0 | 0.8 | No |
| R20 | Residential | 67.3 | 68.6 | 1.3 | No |
| R21 | Residential | 68.6 | 68.7 | 0.1 | No |

**Table 9. Predicted Traffic Noise Levels – Future Cumulative Conditions**

| Receiver /Land Use | | Predicted Exterior Noise Level (dBA CNEL/$L_{dn}$)[1] | | | |
|---|---|---|---|---|---|
| | | Without Project | With Project | Difference[2] | Significant Increase?[3] |
| **Figure 3d** | | | | | |
| R22 | Residential | 68.5 | 68.4 | -0.1 | No |
| R23 | Residential | 68.8 | 68.6 | -0.2 | No |
| R24 | Residential | 68.7 | 68.7 | 0.0 | No |
| R25 | Residential | 68.1 | 68.8 | 0.7 | No |
| R26 | Residential | 68.7 | 68.7 | 0.0 | No |
| R27 | Residential | 68.5 | 68.5 | 0.0 | No |
| R28 | Residential | 68.4 | 68.4 | 0.0 | No |

*1. Traffic noise levels were calculated using the FHWA TNM model based on data obtained from the traffic analysis prepared for this project. Includes reductions for intervening sound barriers, where present.*

*2. Difference in noise levels reflects the incremental increase attributable to the proposed project.*

*3. In accordance with the City's General Plan Policy NS-1-j, a significant increase is defined as an increase of 3 dB, or more.*

*4. Represents predicted peak-hour interior traffic noise level. Based on predicted exterior noise level at building façade and assuming a commonly applied exterior-to-interior average noise reduction of 25 dB.*

*Refer to Figures 4a-4d for receiver locations.*

***IMPACT NOISE-4: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?***

Based on data obtained to Caltrans, the highest measured traffic vibrations measured at the shoulder of major roadways have never exceeded 2.0 mm/s (Caltrans 2013). Roadway vehicle traffic along area roadways would, therefore, not be considered a major source of groundborne vibration. As a result, traffic vibration levels associated with implementation of the proposed project would not be projected to exceed applicable thresholds at nearby land uses.

Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction activities associated with the proposed improvements would likely require the use of various off-road equipment, such as tractors, dozers, compactors, and haul trucks. The use of major groundborne vibration-generating construction equipment, such as pile drivers, would not be required for this project.

Groundborne vibration levels associated with representative construction equipment are summarized in Table 10. Based on the vibration levels presented in Table 10, ground vibration generated by construction equipment would not be anticipated to exceed approximately 0.08 inches per second ppv at 25 feet. Predicted vibration levels at the nearest onsite and offsite structures would not exceed the minimum recommended criteria for structural damage and human annoyance (0.2 and 0.1 in/sec ppv, respectively). As a result, this impact would be considered less than significant.

**Table 10. Representative Vibration Source Levels for Construction Equipment**

| Equipment | Peak Particle Velocity at 25 Feet (In/Sec) |
|---|---|
| Loaded Trucks | 0.076 |
| Jackhammer | 0.035 |
| Small Bulldozers/Tractors | 0.003 |
| *Source: FTA 2006, Caltrans 2013* | |

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# APPENDIX A
# Noise Prediction Modeling

**CONSTRUCTION NOISE MODELING**

**Federal Highway Administration's Roadway Construction Noise Model (RCNM), Version 1.1, 12/08/2008**

## Input Data

**Case Description:** Peach Avenue Widening - Paving

**Receptor**

| | Description | Land Use | Daytime Baseline (dBA) | Evening Baseline (dBA) | Nighttime Baseline (dBA) |
|---|---|---|---|---|---|
| 1 | Receptor 1 | Residential | 60.0 | 55.0 | 45.0 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

**Noise Metric:** Leq

**Noise Limit Criteria**

**Receptor #1**

**Noise Limits**

**Equipment** **Receptor #1: Receptor 1**

| | Active | Description | Impact Device | Usage(%) | Spec Lmax (dBA) | | Actual Lmax (dBA) | | Distance to Receptor (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ☑ | Paver | ☐ | 50% | ☐ | 85.0 | ☑ | 77.2 | 50.0 | 0.0 |
| 2 | ☑ | Roller | ☐ | 20% | ☐ | 85.0 | ☑ | 80.0 | 50.0 | 0.0 |
| 3 | ☑ | Roller | ☐ | 20% | ☐ | 85.0 | ☑ | 80.0 | 50.0 | 0.0 |
| 4 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 5 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 6 | ☐ | | ☐ | | ☐ | | ☐ | | | |

## Results

**Receptor #1: Receptor 1**

| | | Calculated (dBA) | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| | Equipment | Lmax* | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Total | 80.0 | 78.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1 | Paver | 77.2 | 74.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | Roller | 80.0 | 73.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 3 | Roller | 80.0 | 73.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |

*Total Lmax is the value for the loudest piece of equipment.

## Input Data

**Case Description:** Peach Avenue Widening - Drainage/Utilities

**Receptor**

| | Description | Land Use | Daytime Baseline (dBA) | Evening Baseline (dBA) | Nighttime Baseline (dBA) |
|---|---|---|---|---|---|
| 1 | Receptor 1 | Residential | 60.0 | 55.0 | 45.0 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

**Noise Metric:** Leq

**Noise Limit Criteria**

**Receptor #1**

**Noise Limits**

**Equipment** **Receptor #1: Receptor 1**

| | Active | Description | Impact Device | Usage(%) | Spec Lmax (dBA) | | Actual Lmax (dBA) | | Distance to Receptor (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ☑ | Compactor (ground) | ☐ | 20% | ☐ | 80.0 | ☑ | 83.2 | 50.0 | 0.0 |
| 2 | ☑ | Grader | ☐ | 40% | ☑ | 85.0 | ☐ | N/A | 50.0 | 0.0 |
| 3 | ☑ | Excavator | ☐ | 40% | ☐ | 85.0 | ☑ | 80.7 | 50.0 | 0.0 |
| 4 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 5 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 6 | ☐ | | ☐ | | ☐ | | ☐ | | | |

## Results

**Receptor #1: Receptor 1**

| | | Calculated (dBA) | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| | Equipment | Lmax* | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Total | 85.0 | 83.3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1 | Compactor (ground) | 83.2 | 76.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | Grader | 85.0 | 81.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 3 | Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |

*Total Lmax is the value for the loudest piece of equipment.

## Input Data

**Case Description:** Peach Avenue Widening - Grading/Excavation

**Receptor**

| | Description | Land Use | Daytime Baseline (dBA) | Evening Baseline (dBA) | Nighttime Baseline (dBA) |
|---|---|---|---|---|---|
| 1 | Receptor 1 | Residential | 60.0 | 55.0 | 45.0 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

**Noise Metric:** Leq

**Noise Limit Criteria**

**Receptor #1**

**Noise Limits**

**Equipment** **Receptor #1: Receptor 1**

| | Active | Description | Impact Device | Usage(%) | Spec Lmax (dBA) | | Actual Lmax (dBA) | | Distance to Receptor (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ☑ | Front End Loader | ☐ | 40% | ☐ | 80.0 | ☑ | 79.1 | 50.0 | 0.0 |
| 2 | ☑ | Grader | ☐ | 40% | ☑ | 85.0 | ☐ | N/A | 50.0 | 0.0 |
| 3 | ☑ | Excavator | ☐ | 40% | ☐ | 85.0 | ☑ | 80.7 | 50.0 | 0.0 |
| 4 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 5 | ☐ | | ☐ | | ☐ | | ☐ | | | |
| 6 | ☐ | | ☐ | | ☐ | | ☐ | | | |

## Results

**Receptor #1: Receptor 1**

| | | Calculated (dBA) | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| | Equipment | Lmax* | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Total | 85.0 | 83.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1 | Front End Loader | 79.1 | 75.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | Grader | 85.0 | 81.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 3 | Excavator | 80.7 | 76.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |

*Total Lmax is the value for the loudest piece of equipment.

## Input Data

**Case Description:** Peach Avenue Widening - Grubbing/Land Clearing

**Receptor**

| | Description | Land Use | Daytime Baseline (dBA) | Evening Baseline (dBA) | Nighttime Baseline (dBA) |
|---|---|---|---|---|---|
| 1 | Receptor 1 | Residential | 60.0 | 55.0 | 45.0 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

**Noise Metric:** Leq

**Noise Limit Criteria**

**Receptor #1**

**Noise Limits**

**Equipment** **Receptor #1: Receptor 1**

| | Active | Description | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Distance to Receptor (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|---|---|
| 1 | ☑ | Dozer | ☐ | 40% | ☐ 85.0 | ☑ 81.7 | 50.0 | 0.0 |
| 2 | ☑ | Scraper | ☐ | 40% | ☐ 85.0 | ☑ 83.6 | 50.0 | 0.0 |
| 3 | ☑ | Front End Loader | ☐ | 40% | ☐ 80.0 | ☑ 79.1 | 50.0 | 0.0 |
| 4 | ☐ | | ☐ | | ☐ | ☐ | | |
| 5 | ☐ | | ☐ | | ☐ | ☐ | | |
| 6 | ☐ | | ☐ | | ☐ | ☐ | | |

## Results

**Receptor #1: Receptor 1**

| | | Calculated (dBA) | | Noise Limits (dBA) | | | | | | Noise Limit Exceedance (dBA) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day | | Evening | | Night | | Day | | Evening | | Night | |
| | Equipment | Lmax* | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Total | 83.6 | 82.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1 | Dozer | 81.7 | 77.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | Scraper | 83.6 | 79.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 3 | Front End Loader | 79.1 | 75.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |

*Total Lmax is the value for the loudest piece of equipment.

## TRAFFIC NOISE MODELING

**MODEL INPUT SUMMARY**

| TRAFFIC VOLUMES | EXISTING TRAFFIC VOLUMES (PM PKHR) | | EXISTING PLUS PROJECT TRAFFIC VOLUMES (PM PKHR) | | FUTURE TRAFFIC VOLUMES (PM PKHR) | | FUTURE TRAFFIC VOLUMES (PM PKHR) | | AVG. SPEED |
|---|---|---|---|---|---|---|---|---|---|
| | NB | SB | NB | SB | NB | SB | NB | SB | |
| PEACH AVENUE, JENSEN TO CHURCH | 414 | 254 | 414 | 254 | 502 | 335 | 502 | 335 | 45 |
| PEACH AVENUE, CHURCH TO BUTLER | 550 | 679 | 550 | 679 | 867 | 1161 | 867 | 1161 | 45 |

| VEHICLE DISTRIBUTION | |
|---|---|
| LDA/T | 98 |
| MDT | 2 |
| HDT | 0 |
| BUS | 0 |
| MOTORCYCLE | 0 |

RECEPTOR HEIGHT ABOVE GROUND: 1.5 METERS

ATMOSPHERICS: 20 deg C, 50% RH

PAVEMENT TYPE: AVERAGE

**MODEL CALIBRATION**

| | |
|---|---|
| MEASURED | 66 |
| MODELED | 66 |
| DIFFERENCE | 0 |
| ACCEPTABLE? | YES |

TRAFFIC NOISE MODELING
FHWA TRAFFIC NOISE MODEL, VERSION 2.5

SUMMARY OF PREDICTED NOISE LEVELS

| Receiver # | Land Use Description | Existing | Existing Plus Project | Change | Future | Future Plus Project | Change |
|---|---|---|---|---|---|---|---|
| R1 | Residential | 61.9 | 62.1 | 0.2 | 62.9 | 63.1 | 0.2 |
| R2 | Residential | 55 | 55.2 | 0.2 | 55.9 | 56.1 | 0.2 |
| R3 | Residential | 55.2 | 55.4 | 0.2 | 56.1 | 56.3 | 0.2 |
| R4 | Residential | 55.7 | 55.9 | 0.2 | 56.6 | 56.8 | 0.2 |
| R5 | Residential | 55.5 | 55.7 | 0.2 | 56.4 | 56.6 | 0.2 |
| R6 | Residential | 55.5 | 55.6 | 0.1 | 56.2 | 56.3 | 0.1 |
| R7 | Residential | 55.7 | 55.8 | 0.1 | 56.6 | 56.7 | 0.1 |
| R8 | Residential | 54.8 | 54.9 | 0.1 | 55.7 | 55.8 | 0.1 |
| R9 | Residential | 55 | 55.1 | 0.1 | 55.9 | 56 | 0.1 |
| R10 | Elementary School – Nearest Classroom | 29.64 | 29.74 | 0.1 | 55.5 | 55.6 | 0.1 |
| R11 | Elementary School – Outdoor Playground | 51 | 51.1 | 0.1 | 51.9 | 52 | 0.1 |
| R12 | Residential | 60.4 | 61.3 | 0.9 | 62.7 | 63.6 | 0.9 |
| R13 | Residential | 66 | 66.9 | 0.9 | 68.3 | 69.2 | 0.9 |
| R14 | Residential | 66.3 | 67.1 | 0.8 | 68.6 | 69.4 | 0.8 |
| R15 | Residential | 66.2 | 67.2 | 1 | 68.5 | 69.5 | 1 |
| R16 | Residential | 66.5 | 67.4 | 0.9 | 68.8 | 69.7 | 0.9 |
| R17 | Residential | 66.4 | 67.4 | 1 | 68.6 | 69.6 | 1 |
| R18 | Residential | 58.2 | 59.2 | 1 | 60.3 | 61.3 | 1 |
| R19 | Residential | 58.1 | 58.9 | 0.8 | 60.2 | 61 | 0.8 |
| R20 | Residential | 65.1 | 66.4 | 1.3 | 67.3 | 68.6 | 1.3 |
| R21 | Residential | 66.3 | 66.4 | 0.1 | 68.6 | 68.7 | 0.1 |
| R22 | Residential | 66.2 | 66.1 | -0.1 | 68.5 | 68.4 | -0.1 |
| R23 | Residential | 66.5 | 66.3 | -0.2 | 68.8 | 68.6 | -0.2 |
| R24 | Residential | 66.4 | 66.4 | 0 | 68.7 | 68.7 | 0 |
| R25 | Residential | 66.1 | 66.8 | 0.7 | 68.1 | 68.8 | 0.7 |
| R26 | Residential | 66.6 | 66.6 | 0 | 68.7 | 68.7 | 0 |
| R27 | Residential | 66.3 | 66.3 | 0 | 68.5 | 68.5 | 0 |
| R28 | Residential | 66.3 | 66.3 | 0 | 68.4 | 68.4 | 0 |

# APPENDIX E

## *Peach Avenue Widening Between Hamilton and Jensen Avenue Traffic Technical Report*

**Prepared by:**
**VRPA Technologies, Inc.**
**October 2018**

# Peach Avenue Widening
# Between Hamilton Avenue and Jensen Avenue

## Traffic Technical Report

## October 2018

**Prepared for:**
City of Fresno
Capital Management Division
2600 Fresno Street
Fresno, CA 93721

**Prepared by:**
VRPA Technologies, Inc.
4630 W. Jennifer, Suite 105
Fresno, CA 93722
Project Manager: Jason Ellard

# Peach Avenue Widening Between Hamilton Avenue and Jensen Avenue Traffic Technical Report

## Study Team


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This Traffic Technical Report has been prepared for the purpose of analyzing traffic conditions related to the proposed street improvements on South Peach Avenue between East Jensen Avenue and East Hamilton Avenue. The ultimate Project will widen Peach Avenue from two lanes to a divided four-lane arterial with median landscaping, protected left turn lanes, bike lanes, curb and gutter, sidewalk, landscaping and irrigation, streetlights, modifications of existing traffic signal facilities, ITS facilities, irrigation canal bridge widening, and upgrade of the existing railroad crossing at Peach and California Avenues. The proposed Project is located in the southeast portion of the City of Fresno.

# 1.0 Introduction

## 1.1 Description of the Region/Project

The proposed Project lies within the central portion of the San Joaquin Valley. The proposed Project is located on the Valley floor at an elevation of approximately 300 feet above sea level with the surrounding area mostly flat. Figures 1-1 and 1-2 show the location of the Project along with major roadways and highways and study segments.

The proposed Project limits are from Hamilton Avenue, which is the north end of the Project, to the terminus point of the Project at Jensen Avenue. This Traffic Technical Report will determine if the proposed improvements will allow stable flow along Peach Avenue in the future.

### 1.1.1 *Study Area*

In consultation with the City of Fresno and Project team staff, it was determined that the following roadway segments would be included in this Traffic Technical Report:

**Roadway Segments**

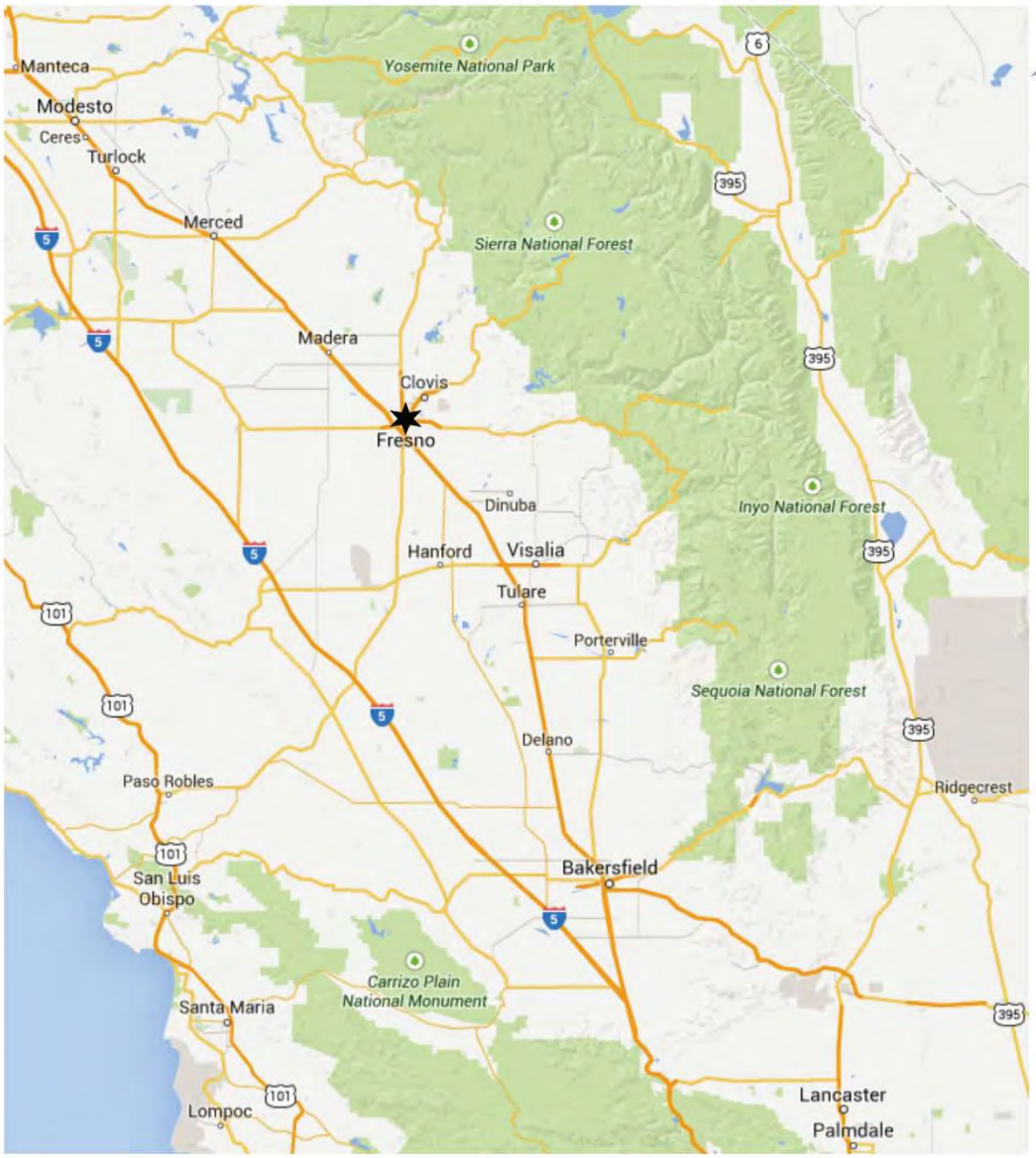
- ✓ Peach Avenue between:
  - Hamilton Avenue and Church Avenue
  - Church Avenue and Jensen Avenue

### 1.1.2 *Study Scenarios*

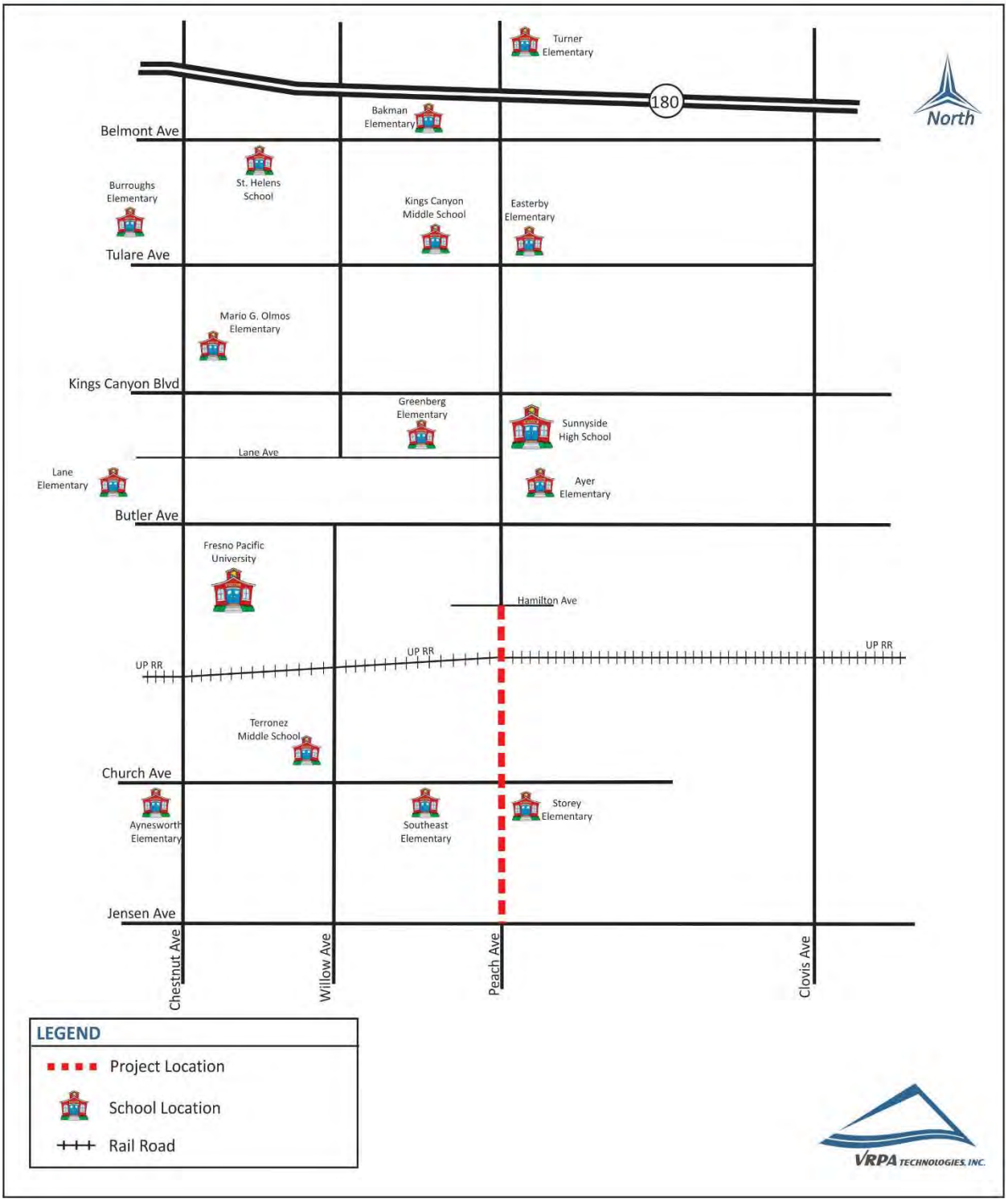
The Traffic Technical Report completed for the proposed Project includes level of service (LOS) analysis for the following traffic scenarios:

- ✓ Existing 2018 Conditions
- ✓ Existing 2018 Plus Build Conditions
- ✓ Cumulative Year 2040 Conditions
- ✓ Cumulative Year 2040 Plus Build Conditions

**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 1-1**
**Regional Location**



**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 1-2**
**Project Location**



## 1.2 Methodology

When preparing a Traffic Technical Report, guidelines set by affected agencies are followed. In analyzing street segment capacities, the Level of Service (LOS) methodologies are applied. LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance. In addition, safety concerns are analyzed to determine the need for appropriate mitigation resulting from increased traffic near sensitive uses and other evaluations such as the need for signalized intersections or other improvements.

### 1.2.1 *Roadway Segment Analysis*

According to the HCM, LOS is categorized by two parameters of traffic: uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities do have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections along arterial roads. A roadway segment is defined as a stretch of roadway generally located between signalized or controlled intersections.

Segment LOS is important in order to understand whether the capacity of a roadway can accommodate future traffic volumes. Table 1-1 provides a definition of segment LOS. The performance criteria used for evaluating volumes and capacities on the road and highway system for this study were estimated using the Modified HCM-Based LOS Tables (Florida Tables), which are commonly utilized in the central valley. The tables consider the capacity of individual road and highway segments based on numerous roadway variables (design speed, passing opportunities, signalized intersections per mile, number of lanes, saturation flow, etc.). These variables were identified and applied to reflect segment LOS conditions. Additional information is included in Appendix A.

## 1.3 Policies to Maintain Level of Service

An important goal is to maintain acceptable levels of service along the highway, street, and road network. To accomplish this, the City of Fresno and other agencies adopt minimum levels of service in an attempt to control congestion that may result as new development occurs. The City of Fresno's 2035 General Plan, policy number MT-1-k, identifies a minimum LOS standard of D. All City intersections and roadway segments shall operate at a LOS D or better under the near-term conditions, unless a finding of overriding consideration was adopted in the Master General Plan EIR. Under long-term conditions (Year 2035 conditions) all city intersections and roadway segments shall operate at a LOS D or better, except for the roadway segments adopted in the Master General Plan EIR that were projected to operate at LOS E or F. In the study area covered under this report, a minimum LOS of D was used as the LOS standard.

## Table 1-1
### Roadway Segment Level of Service Definitions
### (Highway Capacity Manual)

| LEVEL OF SERVICE | DEFINITION | |
|---|---|---|
| A | Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream. |  |
| B | Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver. |  |
| C | Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream. |  |
| D | Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience. |  |
| E | Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement. |  |
| F | Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable. |  |

# 2.0 Existing Conditions

## 2.1 Existing Traffic Counts and Roadway Geometrics

The first step toward assessing Project impacts is to assess existing traffic conditions. Existing Daily and AM and PM peak hour segment counts were collected at each study street segment by National Data and Surveying Services. Traffic counts were conducted for a 24-hour period from 12:00 AM - 11:59 PM for all study street segments on October 10, 2018. Traffic counts were conducted on a Wednesday while schools were in session. Traffic count data worksheets are provided in Appendix B.

Existing lane geometry is shown in Figures 2-1a – 2-1e. Existing 2018 Daily and AM and PM peak hour traffic volumes are shown in Figure 2-2.

## 2.2 Existing Functional Roadway Classification System

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.

Streets and highways shown on the City of Fresno 2035 General Plan Land Use and Circulation Element (reference Mobility and Transportation section) are described and classified according to their primary function. The current hierarchal system of roadways consists of the following six basic classifications[3]:

- ✓ **Freeways** – serve regional and inter-city travel and should not become the optimum route for intra-city trips. Access is fully controlled, grade crossings are separated, and medians separate lanes moving in opposite directions. Caltrans manages more than 50,000 miles of California's highway and freeway systems. State Route 180, the nearest state facility to the Project, is located approximately 2.5 miles north of the Project.

- ✓ **Expressways** – are high-speed, four- to six-lane divided roadways, primarily servicing through and cross-town traffic, with no direct access to abutting property and at-grade intersections located at approximately half-mile intervals.

    - **Jensen Avenue –** currently a divided four-lane arterial without bike lanes with a posted speed limit of 55 mph in the study area.

- ✓ **Super Arterials** – Four-to six-lane divided roadways with a primary purpose of moving traffic to and from major traffic generators and between community plan areas. A select number

3: City of Fresno 2035 General Plan, Chapter 4, Mobility and Transportation, Page 4-9

of access points to adjacent properties or local streets between the major street intersections may be approved by the City of Fresno. Access will typically be limited to right-turn entrance and exit vehicular movements. Special circumstances, as determined by the City of Fresno, may justify a median island opening between intersections, which allow left-turn movement from the super arterial street to an adjoining property or local street. No super arterials are located near the Project site.

- ✓ **Arterials** – Four- to six-lane divided (median island separation) roadways, with somewhat limited motor vehicles access to abutting properties, and with the primary purpose of moving traffic within and between neighborhoods and to and from freeways and expressways. In addition to major street intersection, appropriately designed and spaced local street intersections may allow left-turn movements to and from the arterial streets.

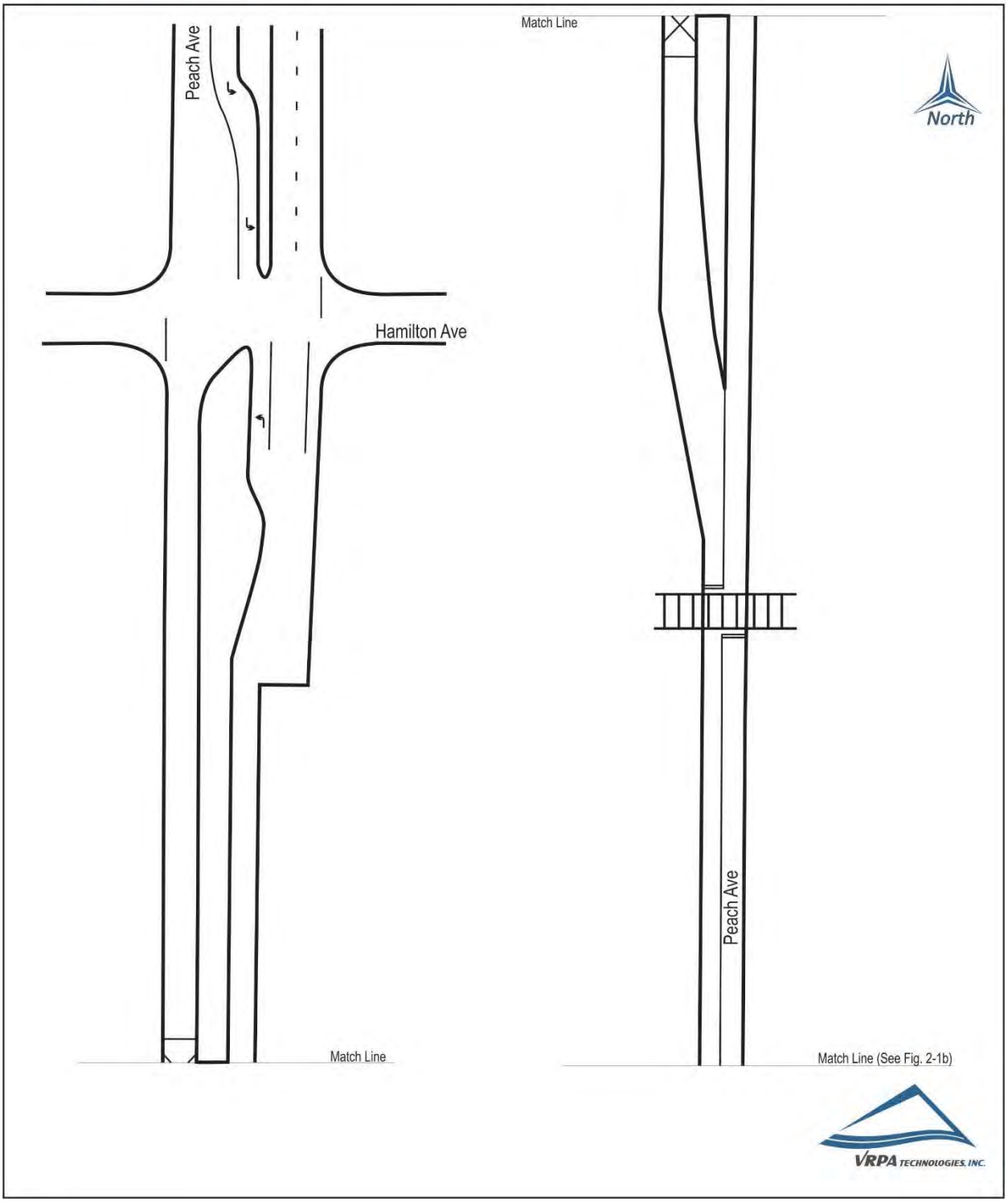
  - **Peach Avenue –** currently an undivided two-lane arterial with bike lanes with a posted speed limit of 40 to 45 mph in the study area.

- ✓ **Collectors** – Two- to four-lane undivided (opposing travel lanes generally not separated by a median island) roadways, with the primary function of connecting local streets and arterials and neighborhood traffic generators and providing access to abutting properties. Local street intersections and motor vehicle access points from abutting properties are allowed consistent with the City's engineering standards and accepted traffic engineering practices. Collectors typically have a center two-way left-turn lane.

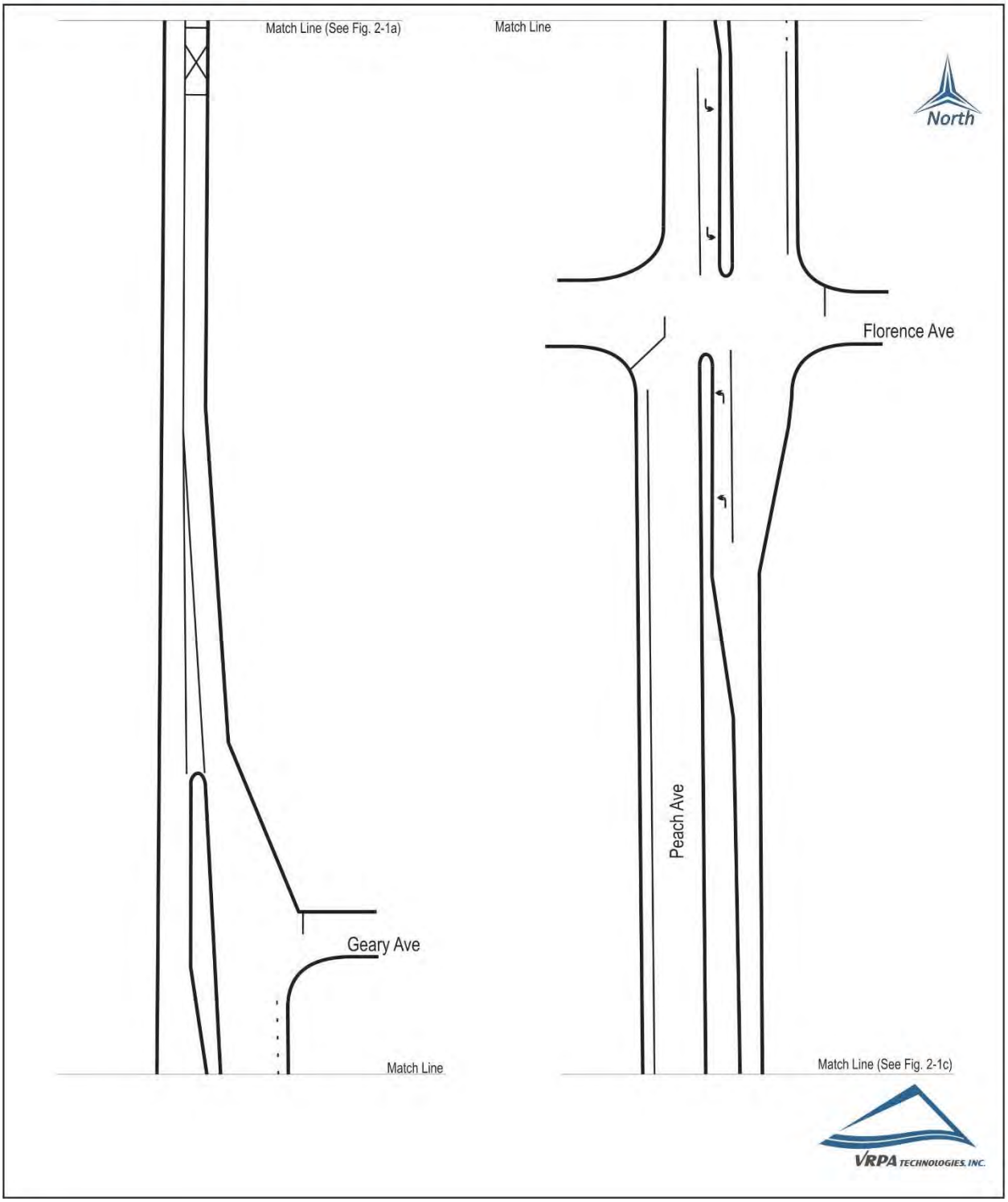
  - **Church Avenue –** currently an undivided two-lane arterial with bike lanes with a posted speed limit of 45 mph in the study area.

- ✓ **Local Streets** – Two- to three-lane roadways designed to provide direct access to properties, while discouraging excessive speeds and volumes of motor vehicle travel incompatible with neighborhoods being served through the implementation of multiple, well connected routes and traffic calming measures. The alignments of future local streets are typically not specified by the General Plan Circulation Diagram, but existing local streets may be depicted for informational purposes. In specific circumstances local street are designated where necessary to assure adequate access and implementation of Complete Neighborhoods with well-connected routes for motor vehicle, bicycle and pedestrian travel.

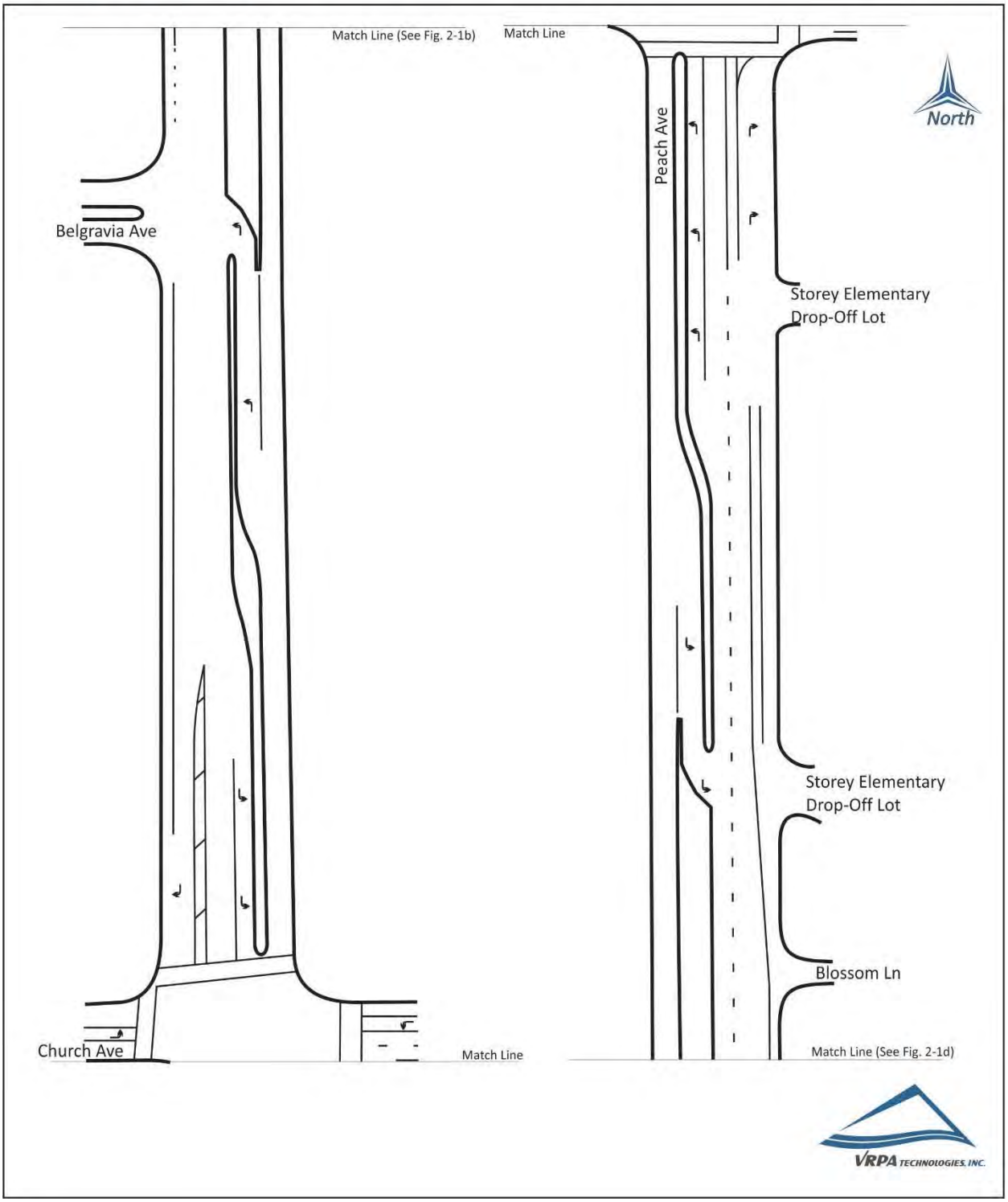
**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-1a**
**Existing Lane Geometry**



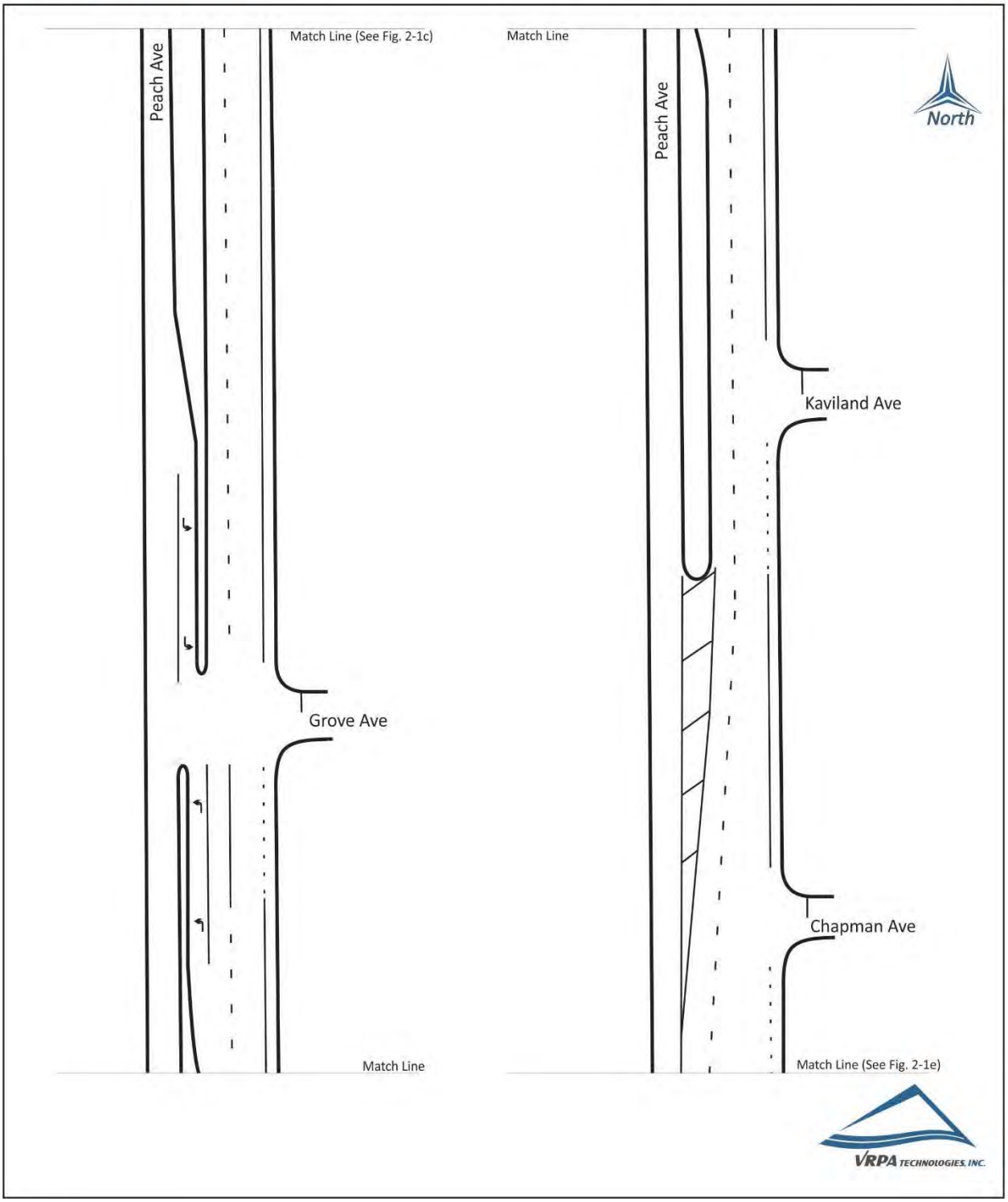
**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-1b**
**Existing Lane Geometry**



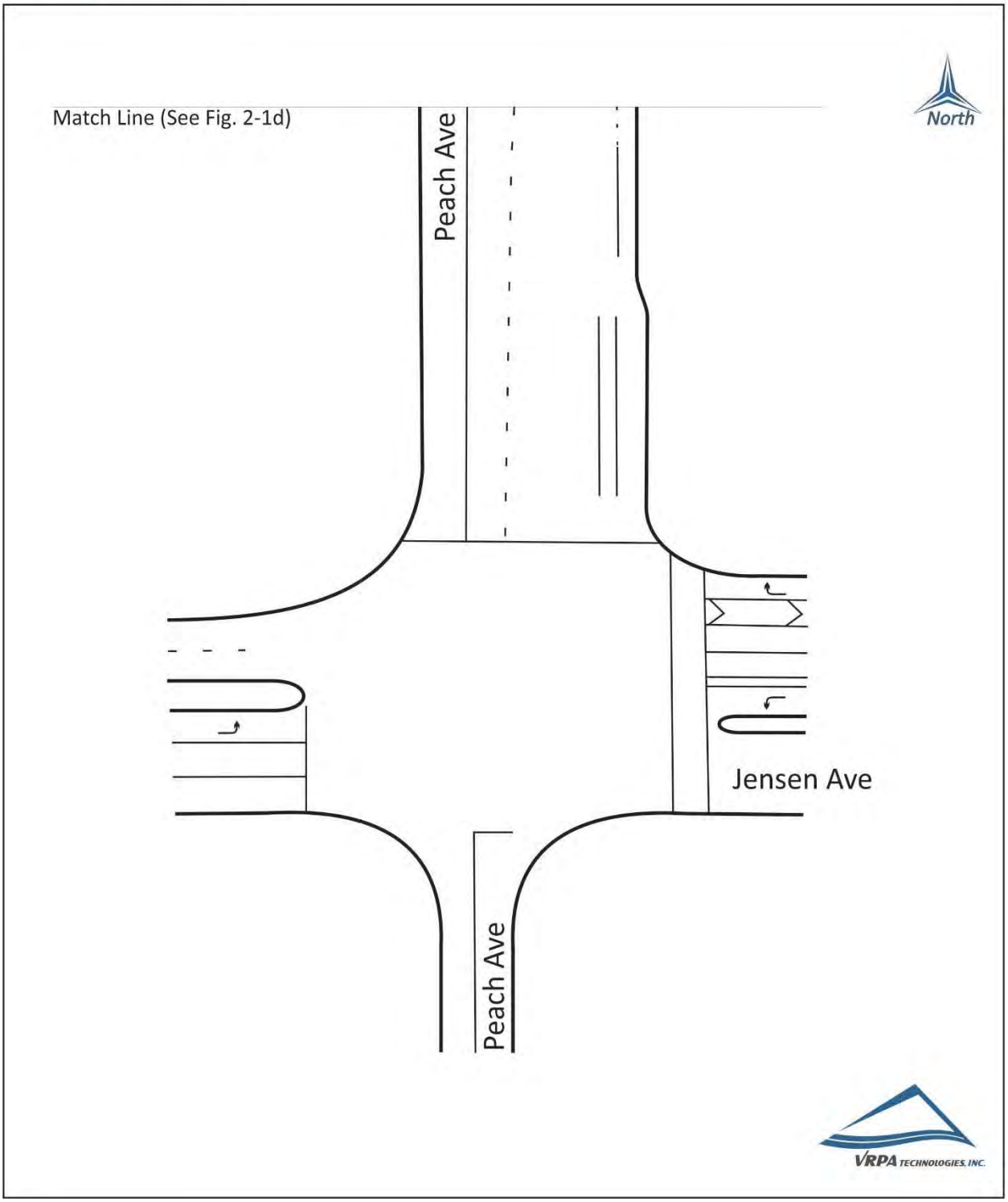
**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-1c**
**Existing Lane Geometry**



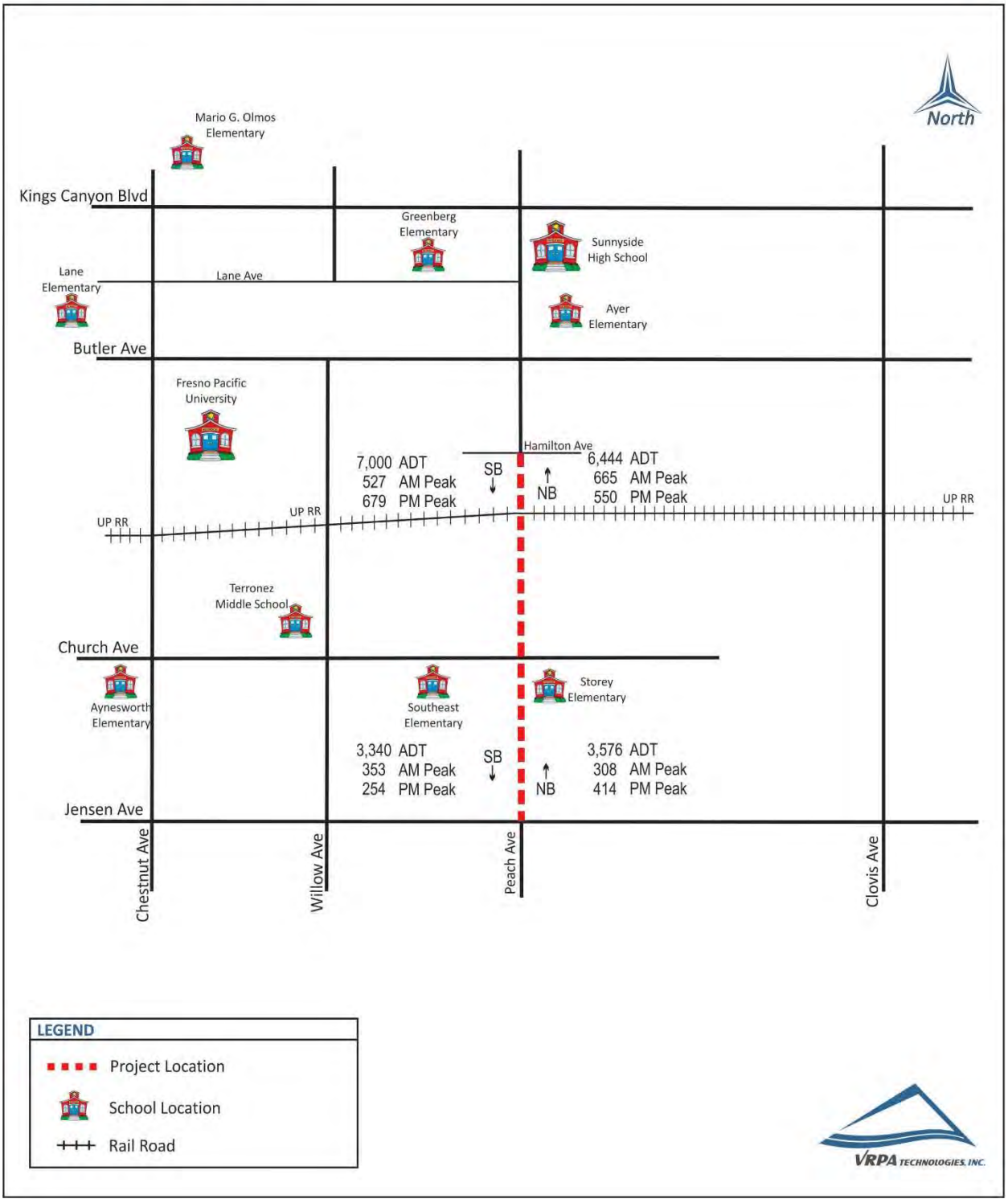
**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-1d**
**Existing Lane Geometry**



**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-1e**
**Existing Lane Geometry**



**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 2-2**
**Existing 2018 Traffic Volumes**



## 2.3 Level of Service

### 2.3.2 *Roadway Segment Capacity Analysis*

Results of the Daily and AM and PM peak hour LOS segment analysis along the existing street and highway system in the project area are reflected in Table 2-1. Street segment capacity was determined using information shown in Tables 2-2 and 2-3, which comes from the Modified Arterial Level of Service Tables included in Appendix A. Results of the analysis show that one of the study segments is currently operating at unacceptable levels of service.

**Table 2-1**
**Existing Street Segment Operations**

| SEGMENT | DESCRIPTION | DIRECTION | TIME PERIOD | EXISTING 2018 | |
|---|---|---|---|---|---|
| | | | | VOLUME | LOS |
| 1. Peach Avenue: Hamilton Avenue to Church Avenue | Two-Lane Undivided to Two-lane Divided* | Two-Way | DAILY | **13,444** | **E** |
| | | NB | AM PEAK | **665** | **E** |
| | | | PM PEAK | 550 | D |
| | | SB | AM PEAK | 527 | D |
| | | | PM PEAK | **679** | **E** |
| | | | | | |
| 2. Peach Avenue: Church Avenue to Jensen Avenue | Three-Lane Divided (2 lanes NB / 1 lane SB) | Two-Way | DAILY | 6,916 | D |
| | | NB | AM PEAK | 308 | D |
| | | | PM PEAK | 414 | D |
| | | SB | AM PEAK | 353 | D |
| | | | PM PEAK | 254 | D |

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded
* Segments were conservatively analyzed assuming two-lane undivided thresholds.

**Table 2-2**
**Average Daily Traffic Two-Way Volumes**

| LEVEL OF SERVICE | | | | | | |
|---|---|---|---|---|---|---|
| LANES | DIVIDED | TIME PERIOD | B | C | D | E |
| 2 | Undivided | Daily | * | 3,600 | 12,510 | 16,920 |
| 2 | Divided | Daily | * | 3,800 | 13,205 | 17,860 |
| 4 | Divided | Daily | 900 | 24,570 | 32,580 | 34,020 |

* Cannot be achieved using table input value defaults

**Table 2-3**
**Peak Hour One-Way Volumes**

| LEVEL OF SERVICE | | | | | | |
|---|---|---|---|---|---|---|
| LANES | DIVIDED | TIME PERIOD | B | C | D | E |
| 1 | Undivided | Peak Hour | * | 180 | 621 | 837 |
| 1 | Divided | Peak Hour | * | 190 | 656 | 884 |
| 2 | Divided | Peak Hour | 45 | 1,215 | 1,611 | 1,683 |

* Cannot be achieved using table input value defaults

## 2.4 Existing Plus Build Conditions

An Existing Plus Build Scenario was analyzed to include existing traffic plus potential improvements for the Project. The resulting LOS is shown in Tables 2-4. Results of the analysis show that none of the study segments are operating worse than the minimum level of service.

**Table 2-4**
**Existing Plus Build Street Segment Operations**

| SEGMENT | DESCRIPTION | DIRECTION | TIME PERIOD | EXISTING 2018 PLUS BUILD | |
|---|---|---|---|---|---|
| | | | | VOLUME | LOS |
| 1. Peach Avenue: Hamilton Avenue to Church Avenue | Four-Lane Divided | Two-Way | DAILY | 13,444 | C |
| | | NB | AM PEAK | 665 | C |
| | | | PM PEAK | 550 | C |
| | | SB | AM PEAK | 527 | C |
| | | | PM PEAK | 679 | C |
| | | | | | |
| 2. Peach Avenue: Church Avenue to Jensen Avenue | Four-Lane Divided | Two-Way | DAILY | 6,916 | C |
| | | NB | AM PEAK | 308 | C |
| | | | PM PEAK | 414 | C |
| | | SB | AM PEAK | 353 | C |
| | | | PM PEAK | 254 | C |

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

# 3.0 Cumulative Year 2040 Conditions

This chapter provides an assessment of the expected traffic in the year 2040 and the impact of that traffic on the surrounding street system.

## 3.1 Future Year Traffic Forecasts

The impacts of the Project were analyzed considering future traffic conditions in the year 2040. The levels of traffic expected in 2040 relate to the cumulative effect of traffic increases resulting from the implementation of the General Plans of local agencies, including the City of Fresno and Fresno County. Traffic conditions without the Project in the Year 2040 were estimated using the Fresno Council of Governments (Fresno COG) regional travel model. Future traffic forecasts along study area roadway segments were estimated by utilizing methodologies published by Fresno COG. This process can be summarized as follows:

- ✓ The Fresno COG model for the year 2018 and 2040 was used to estimate the future traffic forecasts for study area roadway segments.

- ✓ Existing Daily and AM and PM peak hour segment volumes were added to the increment volume (Future Year Model Volume – Current Year Model Volume), which resulted in the adjusted 2040 roadway segment volume for the Daily and AM and PM peak hour conditions. This process is described in the Fresno COG's *Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model* and is the current procedure for determining future year turning movement forecasts (Incremental Method).

Traffic conditions resulting from this scenario are shown in Figure 3-1.

## 3.2 Level of Service

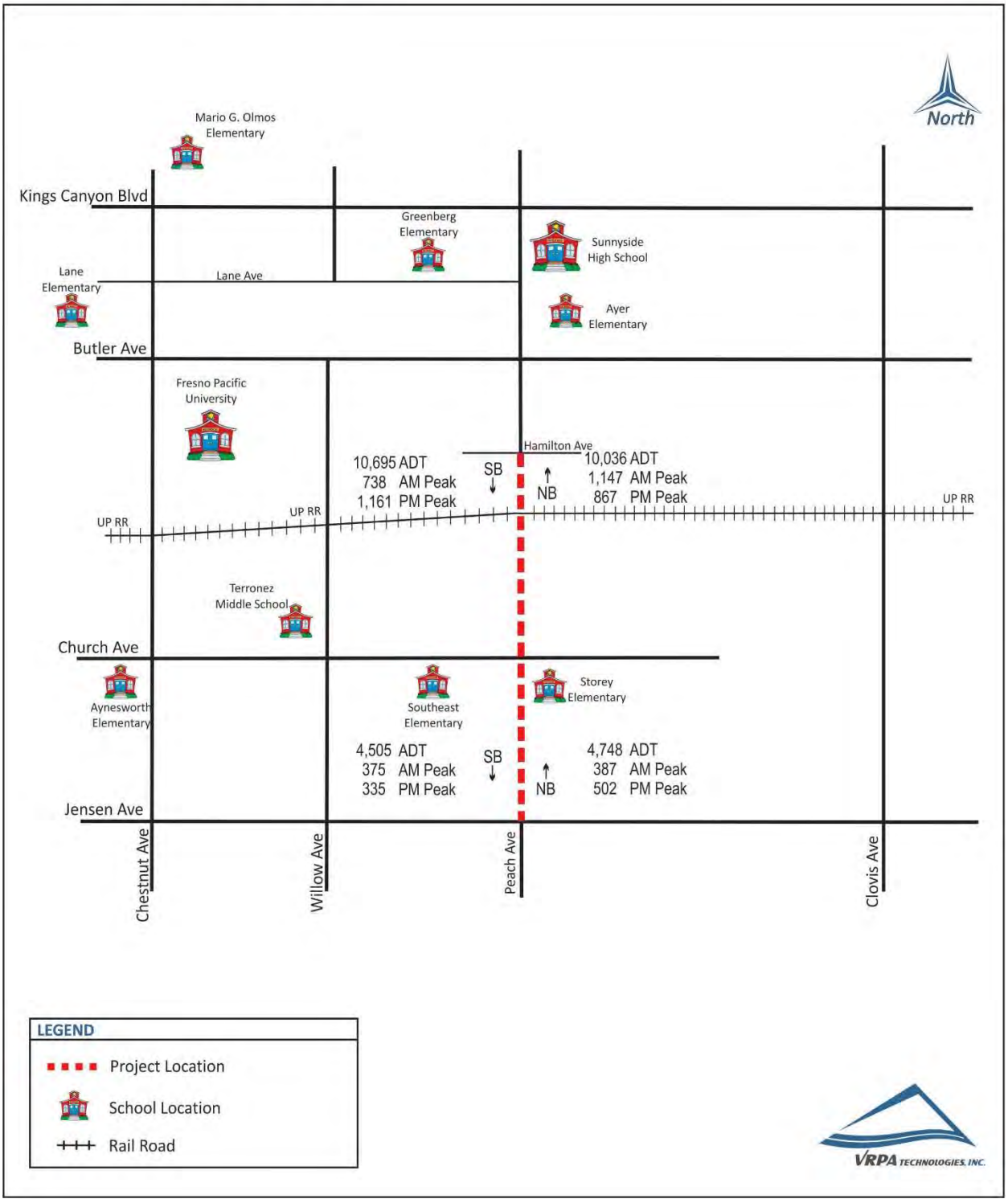
### 3.2.1 *Roadway Segment Capacity Analysis*

Results of the Daily and AM and PM peak hour LOS segment analysis along the future year street and highway system in the project area are reflected in Table 3-1. Street segment capacity was determined using information shown in Tables 2-2 and 2-3, which comes from the Modified Arterial Level of Service Tables included in Appendix A. Results of the analysis show that one of the study segments is currently operating at unacceptable levels of service.

## 3.3 Cumulative Year 2040 Plus Build

A Cumulative Year 2040 Plus Build Scenario was analyzed to include future year traffic plus potential improvements for the Project. The resulting LOS is shown in Tables 3-2. Results of the analysis show none of the study segments are operating worse than the minimum level of service. As a result, no additional mitigations measures are required in conjunction with this Project.

**Peach Avenue Widening between Hamilton Avenue and Jensen Avenue** **Figure 3-1**
**Cumulative Year 2040 Traffic Volumes**



## Table 3-1
### Cumulative Year 2040 Street Segment Operations

| SEGMENT | DESCRIPTION | DIRECTION | TIME PERIOD | CUMULATIVE YEAR 2040 | |
|---|---|---|---|---|---|
| | | | | VOLUME | LOS |
| 1. Peach Avenue: Hamilton Avenue to Church Avenue | Two-Lane Undivided to Two-lane Divided* | Two-Way | DAILY | **20,731** | **F** |
| | | NB | AM PEAK | **1,147** | **F** |
| | | | PM PEAK | **867** | **F** |
| | | SB | AM PEAK | **738** | **E** |
| | | | PM PEAK | **1,161** | **F** |
| | | | | | |
| 2. Peach Avenue: Church Avenue to Jensen Avenue | Three-Lane Divided (2 lanes NB / 1 lane SB) | Two-Way | DAILY | 9,253 | D |
| | | NB | AM PEAK | 387 | D |
| | | | PM PEAK | 502 | D |
| | | SB | AM PEAK | 375 | D |
| | | | PM PEAK | 335 | D |

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

* Segments were conservatively analyzed assuming two-lane undivided thresholds.

## Table 3-2
### Cumulative Year 2040 Plus Build Street Segment Operations

| SEGMENT | DESCRIPTION | DIRECTION | TIME PERIOD | CUMULATIVE YEAR 2040 PLUS BUILD | |
|---|---|---|---|---|---|
| | | | | VOLUME | LOS |
| 1. Peach Avenue: Hamilton Avenue to Church Avenue | Four-Lane Divided | Two-Way | DAILY | 20,731 | C |
| | | NB | AM PEAK | 1,147 | C |
| | | | PM PEAK | 867 | C |
| | | SB | AM PEAK | 738 | C |
| | | | PM PEAK | 1,161 | C |
| | | | | | |
| 2. Peach Avenue: Church Avenue to Jensen Avenue | Four-Lane Divided | Two-Way | DAILY | 9,253 | C |
| | | NB | AM PEAK | 387 | C |
| | | | PM PEAK | 502 | C |
| | | SB | AM PEAK | 375 | C |
| | | | PM PEAK | 335 | C |

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

# APPENDIX A

Modified HCM-Based Tables (Florida Tables)

# TABLE 1

# Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**[1]

03/14/2018

## INTERRUPTED FLOW FACILITIES

### STATE SIGNALIZED ARTERIALS

**Principal** (1 signal per half mile)

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 2 | Undivided | * | 4,000 | 13,900 | 18,800 |
| 4 | Divided | 1,000 | 27,300 | 36,200 | 37,800 |
| 6 | Divided | 1,600 | 41,200 | 54,300 | 57,000 |

**Minor** (1 signal per quarter mile)

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 2 | Undivided | * | * | 4,200 | 14,300 |
| 4 | Divided | * | 9,500 | 28,100 | 37,200 |
| 6 | Divided | * | 17,800 | 44,200 | 56,200 |

### Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

### Median & Turn Lane Adjustments

| Lanes | Median | Exclusive Left Lanes | Exclusive Right Lanes | Adjustment Factors |
|---|---|---|---|---|
| 2 | Divided | Yes | No | +5% |
| 2 | Undivided | No | No | -20% |
| Multi | Undivided | Yes | No | -5% |
| Multi | Undivided | No | No | -25% |
| – | – | – | Yes | + 5% |

### One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

### BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

| Paved Shoulder/Bicycle Lane Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-49% | * | 2,900 | 7,600 | 19,700 |
| 50-84% | 2,100 | 6,700 | 19,700 | >19,700 |
| 85-100% | 9,300 | 19,700 | >19,700 | ** |

### PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

| Sidewalk Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-49% | * | * | 2,800 | 9,500 |
| 50-84% | * | 1,600 | 8,700 | 15,800 |
| 85-100% | 3,800 | 10,700 | 17,400 | >19,700 |

### BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

| Sidewalk Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-84% | > 5 | ≥ 4 | ≥ 3 | ≥ 2 |
| 85-100% | > 4 | ≥ 3 | ≥ 2 | ≥ 1 |

## UNINTERRUPTED FLOW FACILITIES

### FREEWAYS

**Core Urbanized**

| Lanes | B | C | D | E |
|---|---|---|---|---|
| 4 | 53,700 | 72,900 | 90,500 | 92,600 |
| 6 | 78,300 | 107,600 | 133,500 | 139,000 |
| 8 | 103,100 | 142,700 | 177,800 | 185,500 |
| 10 | 140,700 | 197,600 | 231,900 | ** |
| 12 | 174,300 | 235,100 | 278,100 | ** |

**Urbanized**

| Lanes | B | C | D | E |
|---|---|---|---|---|
| 4 | 50,700 | 68,900 | 85,500 | 87,500 |
| 6 | 73,900 | 101,600 | 126,100 | 131,300 |
| 8 | 97,400 | 134,700 | 167,900 | 175,200 |
| 10 | 132,900 | 186,700 | 219,000 | ** |

### Freeway Adjustments

| Auxiliary Lanes Present in Both Directions | Ramp Metering |
|---|---|
| + 20,000 | + 5% |

### UNINTERRUPTED FLOW HIGHWAYS

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 2 | Undivided | 12,300 | 18,800 | 25,500 | 34,100 |
| 4 | Divided | 37,200 | 53,700 | 67,700 | 76,000 |
| 6 | Divided | 56,000 | 80,600 | 101,400 | 113,900 |

### Uninterrupted Flow Highway Adjustments

| Lanes | Median | Exclusive left lanes | Adjustment factors |
|---|---|---|---|
| 2 | Divided | Yes | +5% |
| Multi | Undivided | Yes | -5% |
| Multi | Undivided | No | -25% |

[1]Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

*Source:*
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 1
(continued)

# Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

03/14/2018

| INPUT VALUE ASSUMPTIONS | Uninterrupted Flow Facilities | | | | Interrupted Flow Facilities | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Freeways | Core Freeways | Highways | | Principal Arterials | | Minor Arterials | | Bicycle | Pedestrian |
| **ROADWAY CHARACTERISTICS** | | | | | | | | | | |
| Area type (urban, rural) | urban | urban | | | | | | | | |
| Number of through lanes (both dir.) | 4-10 | 4-12 | 2 | 4-6 | 2-4 | 6 | 2-4 | 6 | 4 | 4 |
| Posted speed (mph) | 70 | 70 | 50 | 50 | 50 | 50 | 40 | 40 | 45 | 45 |
| Free flow speed (mph) | 75 | 75 | 55 | 55 | 55 | 55 | 45 | 45 | 50 | 50 |
| Auxiliary Lanes (n, y) | n | n | | | | | | | | |
| Median (d, u, twlt) | | | | d | | | | | | |
| Terrain (l,r) | l | l | l | l | l | l | l | l | l | l |
| % no passing zone | | | 80 | | | | | | | |
| Exclusive left turn lane impact (n, y) | | | [n] | y | y | y | y | y | y | y |
| Exclusive right turn lanes (n, y) | | | | | n | y | n | y | | |
| Facility length (mi) | 3 | 3 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 |
| Interchange Density (intch/mi) | 1 | 1 | | | | | | | | |
| **TRAFFIC CHARACTERISTICS** | | | | | | | | | | |
| Planning analysis hour factor (K) | 0.090 | 0.085 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 |
| Directional distribution factor (D) | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.565 | 0.565 |
| Peak hour factor (PHF) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Base saturation flow rate (pcphpl) | 2,400 | 2,400 | 1,700 | 2,100 | 1,950 | 1,950 | 1,950 | 1,950 | 1,950 | 1,950 |
| Heavy vehicle percent | 4.0 | 4.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.0 |
| Speed Adjustment Factor (SAF) | 0.950 | 0.950 | | 0.950 | | | | | | |
| Capacity Adjustment Factor (CAF) | 0.939 | 0.939 | | 0.939 | | | | | | |
| % left turns | | | | | 12 | 12 | 12 | 12 | 12 | 12 |
| % right turns | | | | | 12 | 12 | 12 | 12 | 12 | 12 |
| **CONTROL CHARACTERISTICS** | | | | | | | | | | |
| Number of signals | | | | | 5 | 5 | 9 | 9 | 4 | 6 |
| Arrival type (1-6) | | | | | 3 | 3 | 3 | 3 | 4 | 4 |
| Signal type (a, c, p) | | | | | c | c | c | c | c | c |
| Cycle length (C) | | | | | 150 | 150 | 120 | 120 | 120 | 120 |
| Effective green ratio (g/C) | | | | | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| **MULTIMODAL CHARACTERISTICS** | | | | | | | | | | |
| Paved shoulder/bicycle lane (n, y) | | | | | | | | | n, 50%, y | n |
| Outside lane width | | | | | | | | | t | t |
| Pavement condition | | | | | | | | | t | |
| On-street parking | | | | | | | | | n | n |
| Sidewalk (n, y) | | | | | | | | | | n, 50%, y |
| Sidewalk/roadway separation (a, t, w) | | | | | | | | | | t |
| Sidewalk protective barrier (n, y) | | | | | | | | | | n |

**LEVEL OF SERVICE THRESHOLDS**

| Level of Service | Freeways | Highways | | Arterials | Bicycle | Ped | Bus |
|---|---|---|---|---|---|---|---|
| | Density pc/mi/ln | Two-Lane | Multilane | Principal & Minor | Score | Score | Buses/hr. |
| | | %ffs | Density pc/mi/ln | %bffs | | | |
| B | ≤ 18 | > 83.3 | ≤ 18 | > 67 | ≤ 2.75 | ≤ 2.75 | ≤ 6 |
| C | ≤ 26 | > 75.0 | ≤ 26 | > 50 | ≤ 3.50 | ≤ 3.50 | ≤ 4 |
| D | ≤ 35 | > 66.7 | ≤ 35 | > 40 | ≤ 4.25 | ≤ 4.25 | < 3 |
| E | ≤ 45 | ≤ 66.7 | ≤ 45 | > 30 | ≤ 5.00 | ≤ 5.00 | < 2 |

pc/mi/ln = passenger cars per mile per lane %ffs = percent free flow speed %bffs = percent base free flow speed

# TABLE 7

# Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**[1]

03/14/2018

## INTERRUPTED FLOW FACILITIES

### STATE SIGNALIZED ARTERIALS

**Principal** (1 signal per half mile)

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Undivided | * | 200 | 690 | 930 |
| 2 | Divided | 50 | 1,350 | 1,790 | 1,870 |
| 3 | Divided | 80 | 2,040 | 2,690 | 2,820 |

**Minor** (1 signal per quarter mile)

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Undivided | * | * | 210 | 710 |
| 2 | Divided | * | 470 | 1,390 | 1,840 |
| 3 | Divided | * | 880 | 2,190 | 2,780 |

### Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

### Median & Turn Lane Adjustments

| Lanes | Median | Exclusive Left Lanes | Exclusive Right Lanes | Adjustment Factors |
|---|---|---|---|---|
| 1 | Divided | Yes | No | +5% |
| 1 | Undivided | No | No | -20% |
| Multi | Undivided | Yes | No | -5% |
| Multi | Undivided | No | No | -25% |
| – | – | – | Yes | + 5% |

### One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

## UNINTERRUPTED FLOW FACILITIES

### FREEWAYS

| Lanes | B | C | D | E |
|---|---|---|---|---|
| 2 | 2,510 | 3,410 | 4,230 | 4,330 |
| 3 | 3,660 | 5,030 | 6,240 | 6,500 |
| 4 | 4,820 | 6,670 | 8,310 | 8,670 |
| 5 | 6,580 | 9,240 | 10,840 | ** |
| 6 | 8,150 | 10,990 | 13,000 | ** |

### Freeway Adjustments

| Auxiliary Lane | Ramp Metering |
|---|---|
| + 1,000 | + 5% |

### UNINTERRUPTED FLOW HIGHWAYS

| Lanes | Median | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Undivided | 610 | 930 | 1,260 | 1,690 |
| 2 | Divided | 1,840 | 2,660 | 3,350 | 3,760 |
| 3 | Divided | 2,770 | 3,990 | 5,020 | 5,640 |

### Uninterrupted Flow Highway Adjustments

| Lanes | Median | Exclusive left lanes | Adjustment factors |
|---|---|---|---|
| 1 | Divided | Yes | +5% |
| Multi | Undivided | Yes | -5% |
| Multi | Undivided | No | -25% |

### BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

| Paved Shoulder/Bicycle Lane Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-49% | * | 150 | 390 | 1,000 |
| 50-84% | 110 | 340 | 1,000 | >1,000 |
| 85-100% | 470 | 1,000 | >1,000 | ** |

### PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

| Sidewalk Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-49% | * | * | 140 | 480 |
| 50-84% | * | 80 | 440 | 800 |
| 85-100% | 200 | 540 | 880 | >1,000 |

### BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

| Sidewalk Coverage | B | C | D | E |
|---|---|---|---|---|
| 0-84% | > 5 | ≥ 4 | ≥ 3 | ≥ 2 |
| 85-100% | > 4 | ≥ 3 | ≥ 2 | ≥ 1 |

[1]Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

*Source:*
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 7
(continued)

# Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**

03/14/2018

| INPUT VALUE ASSUMPTIONS | Uninterrupted Flow Facilities | | | Interrupted Flow Facilities | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Freeways | Highways | | Principal Arterials | | Minor Arterials | | Bicycle | Pedestrian |
| **ROADWAY CHARACTERISTICS** | | | | | | | | | |
| Area type (urban, rural) | urban | | | | | | | | |
| Number of through lanes (both dir.) | 4-12 | 2 | 4-6 | 2-4 | 6 | 2-4 | 6 | 4 | 4 |
| Posted speed (mph) | 70 | 50 | 50 | 50 | 50 | 40 | 40 | 45 | 45 |
| Free flow speed (mph) | 75 | 55 | 55 | 55 | 55 | 45 | 45 | 50 | 50 |
| Auxiliary Lanes (n, y) | n | | | | | | | | |
| Median (d, u, twlt) | | | d | | | | | | |
| Terrain (l,r) | l | l | l | l | l | l | l | l | l |
| % no passing zone | | 80 | | | | | | | |
| Exclusive left turn lane impact (n, y) | | [n] | y | y | y | y | y | y | y |
| Exclusive right turn lanes (n, y) | | | | n | y | n | y | | |
| Facility length (mi) | 3 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 |
| Interchange Density (intch/mi) | 1 | | | | | | | | |
| **TRAFFIC CHARACTERISTICS** | | | | | | | | | |
| Planning analysis hour factor (K) | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 | 0.090 |
| Directional distribution factor (D) | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.565 | 0.565 |
| Peak hour factor (PHF) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Base saturation flow rate (pcphpl) | 2,400 | 1,700 | 2,100 | 1,950 | 1,950 | 1,950 | 1,950 | 1,950 | 1,950 |
| Heavy vehicle percent | 4.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.0 |
| Speed Adjustment Factor (SAF) | 0.950 | | 0.950 | | | | | | |
| Capacity Adjustment Factor (CAF) | 0.939 | | 0.939 | | | | | | |
| % left turns | | | | 12 | 12 | 12 | 12 | 12 | 12 |
| % right turns | | | | 12 | 12 | 12 | 12 | 12 | 12 |
| **CONTROL CHARACTERISTICS** | | | | | | | | | |
| Number of signals | | | | 5 | 5 | 9 | 9 | 4 | 6 |
| Arrival type (1-6) | | | | 3 | 3 | 3 | 3 | 4 | 4 |
| Signal type (a, c, p) | | | | c | c | c | c | c | c |
| Cycle length (C) | | | | 150 | 150 | 120 | 120 | 120 | 120 |
| Effective green ratio (g/C) | | | | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| **MULTIMODAL CHARACTERISTICS** | | | | | | | | | |
| Paved shoulder/bicycle lane (n, y) | | | | | | | | n, 50%, y | n |
| Outside lane width | | | | | | | | t | t |
| Pavement condition | | | | | | | | t | |
| On-street parking | | | | | | | | n | n |
| Sidewalk (n, y) | | | | | | | | | n, 50%, y |
| Sidewalk/roadway separation (a, t, w) | | | | | | | | | t |
| Sidewalk protective barrier (n, y) | | | | | | | | | n |

**LEVEL OF SERVICE THRESHOLDS**

| Level of Service | Freeways | Highways | | Arterials | Bicycle | Ped | Bus |
|---|---|---|---|---|---|---|---|
| | Density pc/mi/ln | Two-Lane | Multilane | Principal & Minor | Score | Score | Buses/hr. |
| | | %ffs | Density pc/mi/ln | %bffs | | | |
| B | ≤ 18 | > 83.3 | ≤ 18 | > 67 | ≤ 2.75 | ≤ 2.75 | ≤ 6 |
| C | ≤ 26 | > 75.0 | ≤ 26 | > 50 | ≤ 3.50 | ≤ 3.50 | ≤ 4 |
| D | ≤ 35 | > 66.7 | ≤ 35 | > 40 | ≤ 4.25 | ≤ 4.25 | < 3 |
| E | ≤ 45 | ≤ 66.7 | ≤ 45 | > 30 | ≤ 5.00 | ≤ 5.00 | < 2 |

pc/mi/ln = passenger cars per mile per lane %ffs = percent free flow speed %bffs = percent base free flow speed

# APPENDIX B

Traffic Count Data Sheets

Prepared by National Data & Surveying Services

# CLASSIFICATION

Peach Ave Bet. Hamilton Ave & Railroad Tracks

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_001n

**North Bound**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 00:15 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 00:30 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 00:45 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 01:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 01:15 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:30 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 02:15 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 02:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:15 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:30 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:45 | 0 | 7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 04:00 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 04:15 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:30 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 04:45 | 0 | 22 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 05:00 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 05:15 | 1 | 31 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 05:30 | 0 | 32 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 05:45 | 0 | 45 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 06:00 | 0 | 44 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 06:15 | 0 | 41 | 8 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 52 |
| 06:30 | 0 | 77 | 20 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 06:45 | 0 | 68 | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 07:00 | 0 | 96 | 12 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| 07:15 | 0 | 134 | 14 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 156 |
| 07:30 | 1 | 174 | 27 | 0 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 215 |
| 07:45 | 0 | 160 | 14 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 |
| 08:00 | 0 | 79 | 12 | 1 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 99 |
| 08:15 | 0 | 121 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 08:30 | 0 | 73 | 14 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 08:45 | 0 | 70 | 11 | 2 | 6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 91 |
| 09:00 | 0 | 49 | 6 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 09:15 | 0 | 67 | 11 | 1 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 90 |
| 09:30 | 0 | 59 | 10 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 09:45 | 0 | 50 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 10:00 | 0 | 57 | 8 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 10:15 | 0 | 51 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 10:30 | 0 | 63 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 10:45 | 0 | 60 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 11:00 | 1 | 50 | 6 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 60 |
| 11:15 | 0 | 53 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 11:30 | 0 | 66 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 11:45 | 0 | 56 | 12 | 1 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 76 |
| 12:00 PM | 0 | 65 | 10 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 12:15 | 0 | 72 | 2 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 12:30 | 0 | 59 | 10 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 12:45 | 0 | 63 | 10 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 80 |
| 13:00 | 0 | 59 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 13:15 | 0 | 68 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 13:30 | 0 | 99 | 8 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 13:45 | 0 | 64 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| 14:00 | 0 | 70 | 17 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 14:15 | 0 | 75 | 12 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 14:30 | 0 | 133 | 18 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 161 |
| 14:45 | 0 | 118 | 15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 15:00 | 0 | 90 | 15 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 15:15 | 0 | 88 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 15:30 | 0 | 94 | 24 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 |
| 15:45 | 0 | 97 | 14 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| 16:00 | 1 | 90 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 |
| 16:15 | 0 | 92 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 16:30 | 0 | 106 | 14 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| 16:45 | 0 | 115 | 12 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 |
| 17:00 | 0 | 124 | 14 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 146 |
| 17:15 | 0 | 106 | 23 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 17:30 | 0 | 110 | 20 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 135 |
| 17:45 | 0 | 114 | 9 | 1 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 130 |
| 18:00 | 0 | 113 | 19 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 |
| 18:15 | 0 | 113 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 18:30 | 0 | 89 | 14 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 18:45 | 0 | 85 | 11 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 19:00 | 0 | 61 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| 19:15 | 0 | 65 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 19:30 | 0 | 68 | 11 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 19:45 | 0 | 46 | 9 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 20:00 | 0 | 54 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 20:15 | 0 | 49 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 20:30 | 0 | 32 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 20:45 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 21:00 | 0 | 31 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 21:15 | 0 | 34 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 21:30 | 0 | 31 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 21:45 | 0 | 29 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 22:00 | 0 | 30 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 22:15 | 0 | 22 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 22:30 | 0 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 22:45 | 0 | 25 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 23:00 | 0 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 23:15 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 23:30 | 0 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 23:45 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| **Totals** | **4** | **5365** | **781** | **30** | **244** | **8** | | **7** | **5** | | | | | **6444** |
| **% of Totals** | 0% | 83% | 12% | 0% | 4% | 0% | | 0% | 0% | | | | | 100% |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Volumes** | 3 | 2099 | 316 | 15 | 104 | 3 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 2548 |
| **% AM** | 0% | 33% | 5% | 0% | 2% | 0% | | 0% | 0% | | | | | 40% |
| **AM Peak Hour** | 04:30 | 07:00 | 07:00 | 08:00 | 08:30 | 08:45 | | 08:00 | 05:30 | | | | | 07:00 |
| **Volume** | 1 | 564 | 67 | 5 | 30 | 2 | | 2 | 1 | | | | | 665 |
| **PM Volumes** | 1 | 3266 | 465 | 15 | 140 | 5 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 3896 |
| **% PM** | 0% | 51% | 7% | 0% | 2% | 0% | | 0% | 0% | | | | | 60% |
| **PM Peak Hour** | 15:15 | 16:45 | 14:45 | 13:30 | 14:15 | 12:00 | | 13:45 | 12:00 | | | | | 16:45 |
| **Volume** | 1 | 455 | 72 | 5 | 26 | 2 | | 1 | 1 | | | | | 550 |

| Directional Peak Periods | AM 7-9 | | | NOON 12-2 | | | PM 4-6 | | | Off Peak Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Classes** | Volume | | % | Volume | | % | Volume | | % | Volume | | % |
| | 1087 | ⟷ | 17% | 658 | ⟷ | 10% | 1014 | ⟷ | 16% | 3685 | ⟷ | 57% |

**Classification Definitions**

| | | | | | |
|---|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

Prepared by National Data & Surveying Services

# CLASSIFICATION

## Peach Ave Bet. Hamilton Ave & Railroad Tracks

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_001s

**South Bound**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 24 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 00:15 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 00:30 | 0 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 00:45 | 0 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 01:00 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:15 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 01:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:45 | 0 | 5 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 02:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:15 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:15 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:45 | 0 | 7 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 04:00 | 0 | 7 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 04:15 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 04:30 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 04:45 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 05:00 | 0 | 17 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:15 | 0 | 15 | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 |
| 05:30 | 0 | 24 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 05:45 | 0 | 36 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 06:00 | 1 | 27 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 06:15 | 0 | 31 | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 06:30 | 0 | 38 | 7 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 47 |
| 06:45 | 0 | 59 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 07:00 | 0 | 54 | 9 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 07:15 | 0 | 78 | 8 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 07:30 | 0 | 120 | 12 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 |
| 07:45 | 0 | 160 | 13 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 |
| 08:00 | 0 | 89 | 10 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 08:15 | 0 | 68 | 15 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 08:30 | 0 | 50 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 08:45 | 0 | 46 | 7 | 0 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 09:00 | 0 | 49 | 9 | 1 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 67 |
| 09:15 | 0 | 38 | 10 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 09:30 | 0 | 54 | 12 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| 09:45 | 0 | 38 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 10:00 | 0 | 55 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 10:15 | 0 | 54 | 9 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 10:30 | 0 | 52 | 6 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 10:45 | 0 | 60 | 8 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 11:00 | 1 | 58 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 11:15 | 0 | 61 | 10 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 11:30 | 0 | 44 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 11:45 | 0 | 59 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 12:00 PM | 1 | 62 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 12:15 | 0 | 68 | 10 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| 12:30 | 0 | 58 | 7 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 72 |
| 12:45 | 0 | 66 | 8 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 13:00 | 0 | 65 | 10 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 13:15 | 0 | 74 | 7 | 0 | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 94 |
| 13:30 | 0 | 71 | 14 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| 13:45 | 0 | 80 | 7 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 14:00 | 0 | 76 | 16 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| 14:15 | 1 | 84 | 17 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 14:30 | 0 | 96 | 8 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 14:45 | 0 | 131 | 12 | 1 | 13 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 159 |
| 15:00 | 1 | 121 | 13 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| 15:15 | 0 | 107 | 16 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 136 |
| 15:30 | 0 | 100 | 14 | 1 | 11 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 129 |
| 15:45 | 1 | 109 | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 16:00 | 0 | 128 | 8 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 142 |
| 16:15 | 1 | 123 | 19 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 |
| 16:30 | 0 | 115 | 14 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 139 |
| 16:45 | 0 | 130 | 14 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 153 |
| 17:00 | 0 | 129 | 17 | 1 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 |
| 17:15 | 0 | 178 | 17 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 205 |
| 17:30 | 0 | 144 | 16 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 166 |
| 17:45 | 0 | 112 | 9 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 18:00 | 1 | 134 | 10 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 |
| 18:15 | 0 | 136 | 15 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 |
| 18:30 | 0 | 121 | 13 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 142 |
| 18:45 | 0 | 122 | 15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 143 |
| 19:00 | 0 | 92 | 7 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 19:15 | 0 | 105 | 12 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122 |
| 19:30 | 0 | 96 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 19:45 | 0 | 87 | 3 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 20:00 | 1 | 89 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 100 |
| 20:15 | 0 | 80 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 20:30 | 0 | 76 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| 20:45 | 0 | 65 | 4 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 21:00 | 0 | 70 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 21:15 | 0 | 50 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 21:30 | 0 | 57 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 21:45 | 0 | 51 | 5 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 22:00 | 0 | 42 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 22:15 | 0 | 36 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 22:30 | 0 | 30 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 22:45 | 0 | 33 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 23:00 | 0 | 32 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 23:15 | 1 | 22 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 23:30 | 0 | 30 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 23:45 | 0 | 30 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| **Totals** | **10** | **5818** | **704** | **10** | **421** | **21** | | **8** | **8** | | | | | **7000** |
| **% of Totals** | 0% | 83% | 10% | 0% | 6% | 0% | | 0% | 0% | | | | | 100% |
| **AM Volumes** | 2 | 1705 | 253 | 3 | 151 | 9 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 2126 |
| **% AM** | 0% | 24% | 4% | 0% | 2% | 0% | | 0% | 0% | | | | | 30% |
| **AM Peak Hour** | 05:15 | 07:15 | 07:30 | 08:15 | 07:15 | 08:30 | | 05:45 | 04:30 | | | | | 07:15 |
| **Volume** | 1 | 447 | 50 | 2 | 36 | 3 | | 1 | 1 | | | | | 527 |
| **PM Volumes** | 8 | 4113 | 451 | 7 | 270 | 12 | 0 | 6 | 7 | 0 | 0 | 0 | 0 | 4874 |
| **% PM** | 0% | 59% | 6% | 0% | 4% | 0% | | 0% | 0% | | | | | 70% |
| **PM Peak Hour** | 14:15 | 16:45 | 16:15 | 14:45 | 14:15 | 14:30 | | 14:45 | 12:30 | | | | | 16:45 |
| **Volume** | 2 | 581 | 64 | 2 | 38 | 5 | | 3 | 2 | | | | | 679 |

| Directional Peak Periods | AM 7-9 | | | NOON 12-2 | | | PM 4-6 | | | Off Peak Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Classes | Volume | ↔ | % | Volume | ↔ | % | Volume | ↔ | % | Volume | ↔ | % |
| | 815 | | 12% | 672 | | 10% | 1241 | | 18% | 4272 | | 61% |

**Classification Definitions**

| | | | | |
|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

Prepared by National Data & Surveying Services

# CLASSIFICATION

Peach Ave Bet. Hamilton Ave & Railroad Tracks

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_001

**Summary**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 38 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 00:15 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 00:30 | 0 | 34 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 00:45 | 0 | 24 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 01:00 | 0 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 01:15 | 0 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 01:30 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 01:45 | 0 | 9 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:00 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:15 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 02:30 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 02:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 03:15 | 0 | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 03:30 | 0 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 03:45 | 0 | 14 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 04:00 | 0 | 16 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 04:15 | 0 | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 04:30 | 0 | 26 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 04:45 | 0 | 30 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 05:00 | 0 | 35 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 05:15 | 1 | 46 | 11 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 63 |
| 05:30 | 0 | 56 | 12 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 05:45 | 0 | 81 | 10 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 06:00 | 1 | 71 | 14 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 06:15 | 0 | 72 | 19 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 97 |
| 06:30 | 0 | 115 | 27 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 148 |
| 06:45 | 0 | 127 | 17 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154 |
| 07:00 | 0 | 150 | 21 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 |
| 07:15 | 0 | 212 | 22 | 3 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 251 |
| 07:30 | 1 | 294 | 39 | 0 | 22 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 357 |
| 07:45 | 0 | 320 | 27 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 364 |
| 08:00 | 0 | 168 | 22 | 1 | 13 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 206 |
| 08:15 | 0 | 189 | 26 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 225 |
| 08:30 | 0 | 123 | 23 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 161 |
| 08:45 | 0 | 116 | 18 | 2 | 19 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 158 |
| 09:00 | 0 | 98 | 15 | 2 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 127 |
| 09:15 | 0 | 105 | 21 | 1 | 11 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 141 |
| 09:30 | 0 | 113 | 22 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| 09:45 | 0 | 88 | 20 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 10:00 | 0 | 112 | 16 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 10:15 | 0 | 105 | 15 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 10:30 | 0 | 115 | 15 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| 10:45 | 0 | 120 | 16 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 143 |
| 11:00 | 2 | 108 | 11 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 125 |
| 11:15 | 0 | 114 | 19 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 143 |
| 11:30 | 0 | 110 | 18 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| 11:45 | 0 | 115 | 18 | 1 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 147 |
| 12:00 PM | 1 | 127 | 16 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| 12:15 | 0 | 140 | 12 | 0 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| 12:30 | 0 | 117 | 17 | 0 | 11 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 148 |
| 12:45 | 0 | 129 | 18 | 0 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 160 |
| 13:00 | 0 | 124 | 16 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 153 |
| 13:15 | 0 | 142 | 16 | 0 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 172 |
| 13:30 | 0 | 170 | 22 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 204 |
| 13:45 | 0 | 144 | 19 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171 |
| 14:00 | 0 | 146 | 33 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |
| 14:15 | 1 | 159 | 29 | 2 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 204 |
| 14:30 | 0 | 229 | 26 | 0 | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 276 |
| 14:45 | 0 | 249 | 27 | 1 | 19 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 298 |
| 15:00 | 1 | 211 | 28 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 253 |
| 15:15 | 0 | 195 | 34 | 1 | 8 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 243 |
| 15:30 | 0 | 194 | 38 | 2 | 14 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 251 |
| 15:45 | 1 | 206 | 26 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 243 |
| 16:00 | 1 | 218 | 24 | 2 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 251 |
| 16:15 | 1 | 215 | 28 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 257 |
| 16:30 | 0 | 221 | 28 | 1 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 262 |
| 16:45 | 0 | 245 | 26 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 288 |
| 17:00 | 0 | 253 | 31 | 2 | 13 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 301 |
| 17:15 | 0 | 284 | 40 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 339 |
| 17:30 | 0 | 254 | 36 | 0 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 301 |
| 17:45 | 0 | 226 | 18 | 1 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 256 |
| 18:00 | 1 | 247 | 29 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 294 |
| 18:15 | 0 | 249 | 32 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 294 |
| 18:30 | 0 | 210 | 27 | 1 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 250 |
| 18:45 | 0 | 207 | 26 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 248 |
| 19:00 | 0 | 153 | 22 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 184 |
| 19:15 | 0 | 170 | 20 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 196 |
| 19:30 | 0 | 164 | 18 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 188 |
| 19:45 | 0 | 133 | 12 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 |
| 20:00 | 1 | 143 | 15 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 161 |
| 20:15 | 0 | 129 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 |
| 20:30 | 0 | 108 | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| 20:45 | 0 | 112 | 4 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 21:00 | 0 | 101 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 21:15 | 0 | 84 | 9 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 21:30 | 0 | 88 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| 21:45 | 0 | 80 | 6 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 22:00 | 0 | 72 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 22:15 | 0 | 58 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 22:30 | 0 | 53 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 22:45 | 0 | 58 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 23:00 | 0 | 41 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 23:15 | 1 | 37 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 23:30 | 0 | 42 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 23:45 | 0 | 42 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| **Totals** | **14** | **11183** | **1485** | **40** | **665** | **29** | | **15** | **13** | | | | | **13444** |
| **% of Totals** | 0% | 83% | 11% | 0% | 5% | 0% | | 0% | 0% | | | | | 100% |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Volumes** | 5 | 3804 | 569 | 18 | 255 | 12 | 0 | 7 | 4 | 0 | 0 | 0 | 0 | 4674 |
| **% AM** | 0% | 28% | 4% | 0% | 2% | 0% | | 0% | 0% | | | | | 35% |
| **AM Peak Hour** | 05:15 | 07:15 | 07:30 | 08:15 | 07:15 | 08:45 | | 08:30 | 04:30 | | | | | 07:15 |
| **Volume** | 2 | 994 | 114 | 7 | 65 | 5 | | 3 | 1 | | | | | 1178 |
| **PM Volumes** | 9 | 7379 | 916 | 22 | 410 | 17 | 0 | 8 | 9 | 0 | 0 | 0 | 0 | 8770 |
| **% PM** | 0% | 55% | 7% | 0% | 3% | 0% | | 0% | 0% | | | | | 65% |
| **PM Peak Hour** | 15:30 | 16:45 | 16:45 | 13:30 | 14:15 | 14:30 | | 14:30 | 12:30 | | | | | 16:45 |
| **Volume** | 3 | 1036 | 133 | 5 | 64 | 5 | | 3 | 3 | | | | | 1229 |

| Directional Peak Periods | AM 7-9 | | | NOON 12-2 | | | PM 4-6 | | | Off Peak Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Classes** | Volume | | % | Volume | | % | Volume | | % | Volume | | % |
| | 1902 | ⟷ | 14% | 1330 | ⟷ | 10% | 2255 | ⟷ | 17% | 7957 | ⟷ | 59% |

**Classification Definitions**

| | | | | | |
|---|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

Prepared by National Data & Surveying Services

# CLASSIFICATION

Peach Ave Bet. Grove Ave & Kaviland Ave

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_002n

**North Bound**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 00:15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 00:30 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 00:45 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:00 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 02:15 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 02:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:00 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:15 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 04:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:30 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:45 | 0 | 14 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 05:00 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 05:15 | 0 | 23 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 27 |
| 05:30 | 0 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 05:45 | 0 | 25 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 06:00 | 0 | 24 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 06:15 | 1 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 06:30 | 0 | 21 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 06:45 | 0 | 26 | 5 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 07:00 | 0 | 25 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 07:15 | 0 | 46 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 53 |
| 07:30 | 1 | 67 | 10 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 81 |
| 07:45 | 0 | 67 | 6 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 82 |
| 08:00 | 0 | 78 | 11 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 92 |
| 08:15 | 0 | 37 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 08:30 | 0 | 29 | 6 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 39 |
| 08:45 | 0 | 38 | 8 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 54 |
| 09:00 | 0 | 24 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 09:15 | 0 | 27 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 09:30 | 0 | 28 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 09:45 | 0 | 23 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 28 |
| 10:00 | 0 | 38 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 10:15 | 0 | 19 | 7 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 29 |
| 10:30 | 0 | 27 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 10:45 | 0 | 28 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 11:00 | 0 | 26 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 11:15 | 1 | 24 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 11:30 | 0 | 39 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 11:45 | 0 | 28 | 8 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 12:00 PM | 0 | 32 | 5 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 12:15 | 0 | 37 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| 12:30 | 1 | 21 | 5 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 12:45 | 0 | 38 | 5 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 47 |
| 13:00 | 0 | 47 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 13:15 | 0 | 35 | 4 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 13:30 | 0 | 32 | 7 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 13:45 | 0 | 34 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 14:00 | 0 | 44 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 14:15 | 0 | 43 | 10 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 14:30 | 0 | 71 | 13 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 90 |
| 14:45 | 0 | 49 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 15:00 | 1 | 58 | 9 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 70 |
| 15:15 | 0 | 51 | 12 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 15:30 | 0 | 65 | 16 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 15:45 | 0 | 54 | 6 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 16:00 | 1 | 46 | 15 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 16:15 | 0 | 60 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 16:30 | 3 | 62 | 10 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 |
| 16:45 | 0 | 63 | 7 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 17:00 | 1 | 94 | 15 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 114 |
| 17:15 | 0 | 82 | 14 | 0 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 17:30 | 0 | 77 | 13 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 99 |
| 17:45 | 0 | 78 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 18:00 | 0 | 69 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 |
| 18:15 | 0 | 49 | 14 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 18:30 | 0 | 46 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 18:45 | 0 | 34 | 14 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 19:00 | 0 | 30 | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 19:15 | 0 | 29 | 10 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 19:30 | 0 | 36 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 19:45 | 0 | 30 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 20:00 | 0 | 37 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 20:15 | 0 | 15 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 20:30 | 0 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 20:45 | 1 | 26 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 21:00 | 0 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 21:15 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 21:30 | 0 | 20 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 21:45 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 22:00 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 22:15 | 0 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 22:30 | 0 | 20 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 22:45 | 0 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 23:00 | 0 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 23:15 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 23:30 | 0 | 9 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 23:45 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| **Totals** | **11** | **2857** | **454** | **10** | **216** | **10** | | **5** | **13** | | | | | **3576** |
| **% of Totals** | 0% | 80% | 13% | 0% | 6% | 0% | | 0% | 0% | | | | | 100% |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Volumes** | 3 | 1000 | 143 | 5 | 67 | 3 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 1231 |
| **% AM** | 0% | 28% | 4% | 0% | 2% | 0% | | 0% | 0% | | | | | 34% |
| **AM Peak Hour** | 05:30 | 07:15 | 07:15 | 08:00 | 11:45 | 11:15 | | 09:30 | 07:00 | | | | | 07:15 |
| **Volume** | 1 | 258 | 32 | 2 | 27 | 2 | | 2 | 3 | | | | | 308 |
| **PM Volumes** | 8 | 1857 | 311 | 5 | 149 | 7 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 2345 |
| **% PM** | 0% | 52% | 9% | 0% | 4% | 0% | | 0% | 0% | | | | | 66% |
| **PM Peak Hour** | 15:45 | 17:00 | 17:00 | 13:30 | 17:00 | 12:00 | | 14:15 | 16:45 | | | | | 17:00 |
| **Volume** | 4 | 331 | 50 | 3 | 28 | 2 | | 2 | 3 | | | | | 414 |

| Directional Peak Periods | AM 7-9 | | | NOON 12-2 | | | PM 4-6 | | | Off Peak Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Classes** | Volume | | % | Volume | | % | Volume | | % | Volume | | % |
| | 473 | ⟷ | 13% | 357 | ⟷ | 10% | 706 | ⟷ | 20% | 2040 | ⟷ | 57% |

**Classification Definitions**

| | | | | | |
|---|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

Prepared by National Data & Surveying Services

# CLASSIFICATION

Peach Ave Bet. Grove Ave & Kaviland Ave

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_002s

**South Bound**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 00:15 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 00:30 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 00:45 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 01:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:15 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 01:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 01:45 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 02:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:30 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 02:45 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:45 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 04:00 | 0 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 04:15 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:30 | 0 | 14 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 04:45 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 05:00 | 0 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:15 | 0 | 20 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 |
| 05:30 | 0 | 33 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 05:45 | 0 | 36 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 06:00 | 1 | 35 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 06:15 | 0 | 29 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 06:30 | 0 | 39 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 51 |
| 06:45 | 0 | 48 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 07:00 | 0 | 46 | 10 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 07:15 | 0 | 71 | 7 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 07:30 | 0 | 90 | 10 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| 07:45 | 0 | 83 | 13 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 08:00 | 0 | 47 | 5 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| 08:15 | 0 | 42 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 08:30 | 0 | 35 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 08:45 | 0 | 23 | 8 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 33 |
| 09:00 | 0 | 28 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 09:15 | 0 | 27 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 09:30 | 0 | 32 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 09:45 | 0 | 23 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 |
| 10:00 | 0 | 29 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 10:15 | 0 | 27 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 10:30 | 0 | 28 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 10:45 | 0 | 24 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 11:00 | 0 | 19 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 11:15 | 0 | 26 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 11:30 | 0 | 15 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 11:45 | 0 | 29 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 12:00 PM | 0 | 29 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 12:15 | 0 | 26 | 8 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 12:30 | 0 | 33 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 12:45 | 0 | 34 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 13:00 | 0 | 32 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 13:15 | 0 | 31 | 4 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 13:30 | 0 | 36 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 13:45 | 0 | 28 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 14:00 | 0 | 39 | 6 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 51 |
| 14:15 | 0 | 41 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 14:30 | 0 | 49 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 14:45 | 0 | 50 | 2 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 58 |
| 15:00 | 0 | 39 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 15:15 | 0 | 48 | 12 | 2 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 15:30 | 0 | 46 | 8 | 0 | 6 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 63 |
| 15:45 | 0 | 45 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 16:00 | 0 | 62 | 5 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 73 |
| 16:15 | 0 | 52 | 8 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 16:30 | 0 | 48 | 4 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 58 |
| 16:45 | 0 | 50 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 17:00 | 0 | 41 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 17:15 | 0 | 53 | 9 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 17:30 | 0 | 54 | 10 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 17:45 | 0 | 29 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 18:00 | 0 | 33 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 18:15 | 0 | 47 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| 18:30 | 0 | 45 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 18:45 | 0 | 30 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| 19:00 | 0 | 28 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 19:15 | 0 | 32 | 10 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 19:30 | 0 | 34 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 19:45 | 0 | 31 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 20:00 | 0 | 27 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 20:15 | 0 | 31 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 20:30 | 0 | 33 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 20:45 | 0 | 22 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 21:00 | 0 | 18 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 21:15 | 0 | 18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 21:30 | 0 | 17 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 21:45 | 0 | 17 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 22:00 | 0 | 14 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 22:15 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 22:30 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 22:45 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 23:00 | 0 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 23:15 | 0 | 9 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 23:30 | 0 | 16 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 21 |
| 23:45 | 1 | 17 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **Totals** | **2** | **2686** | **402** | **6** | **226** | **6** | | **12** | | | | | | **3340** |
| **% of Totals** | 0% | 80% | 12% | 0% | 7% | 0% | | 0% | | | | | | 100% |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Volumes** | 1 | 1123 | 198 | 2 | 81 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1411 |
| **% AM** | 0% | 34% | 6% | 0% | 2% | 0% | | 0% | | | | | | 42% |
| **AM Peak Hour** | 05:15 | 07:15 | 07:00 | 07:15 | 07:15 | 06:15 | | 04:30 | | | | | | 07:00 |
| **Volume** | 1 | 291 | 40 | 1 | 24 | 1 | | 1 | | | | | | 353 |
| **PM Volumes** | 1 | 1563 | 204 | 4 | 145 | 4 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1929 |
| **% PM** | 0% | 47% | 6% | 0% | 4% | 0% | | 0% | | | | | | 58% |
| **PM Peak Hour** | 23:00 | 16:00 | 15:15 | 14:30 | 12:45 | 14:30 | | 14:45 | | | | | | 15:15 |
| **Volume** | 1 | 212 | 29 | 2 | 24 | 2 | | 4 | | | | | | 258 |

| **Directional Peak Periods** | **AM 7-9** | | | **NOON 12-2** | | | **PM 4-6** | | | **Off Peak Volumes** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Classes** | Volume | | % | Volume | | % | Volume | | % | Volume | | % |
| | 541 | ⟷ | 16% | 323 | ⟷ | 10% | 470 | ⟷ | 14% | 2006 | ⟷ | 60% |

**Classification Definitions**

| | | | | |
|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

Prepared by National Data & Surveying Services

# CLASSIFICATION

Peach Ave Bet. Grove Ave & Kaviland Ave

**Day:** Wednesday
**Date:** 10/10/2018

**City:** Fresno
**Project #:** CA18_7359_002

**Summary**

| Time | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | # 10 | # 11 | # 12 | # 13 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 AM | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 00:15 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 00:30 | 0 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 00:45 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 01:00 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:15 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 01:30 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 01:45 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 02:00 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 02:15 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:30 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 02:45 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:15 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:30 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:45 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 13 |
| 04:00 | 0 | 13 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 04:15 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:30 | 0 | 20 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 04:45 | 0 | 29 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 05:00 | 0 | 34 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 05:15 | 0 | 43 | 7 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 54 |
| 05:30 | 0 | 57 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 05:45 | 0 | 61 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 06:00 | 1 | 59 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| 06:15 | 1 | 51 | 10 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 06:30 | 0 | 60 | 14 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 83 |
| 06:45 | 0 | 74 | 16 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 07:00 | 0 | 71 | 14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 07:15 | 0 | 117 | 12 | 0 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 140 |
| 07:30 | 1 | 157 | 20 | 0 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 189 |
| 07:45 | 0 | 150 | 19 | 0 | 12 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 182 |
| 08:00 | 0 | 125 | 16 | 2 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 149 |
| 08:15 | 0 | 79 | 16 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 |
| 08:30 | 0 | 64 | 12 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 83 |
| 08:45 | 0 | 61 | 16 | 1 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 87 |
| 09:00 | 0 | 52 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| 09:15 | 0 | 54 | 17 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 09:30 | 0 | 60 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 09:45 | 0 | 46 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 53 |
| 10:00 | 0 | 67 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 10:15 | 0 | 46 | 13 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 63 |
| 10:30 | 0 | 55 | 13 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 10:45 | 0 | 52 | 10 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 11:00 | 0 | 45 | 5 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| 11:15 | 1 | 50 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 11:30 | 0 | 54 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 11:45 | 0 | 57 | 10 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 12:00 PM | 0 | 61 | 8 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 12:15 | 0 | 63 | 11 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 82 |
| 12:30 | 1 | 54 | 8 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| 12:45 | 0 | 72 | 9 | 0 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 92 |
| 13:00 | 0 | 79 | 6 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| 13:15 | 0 | 66 | 8 | 0 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 92 |
| 13:30 | 0 | 68 | 16 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 13:45 | 0 | 62 | 7 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 14:00 | 0 | 83 | 13 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 106 |
| 14:15 | 0 | 84 | 15 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 14:30 | 0 | 120 | 21 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 148 |
| 14:45 | 0 | 99 | 8 | 0 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 116 |
| 15:00 | 1 | 97 | 13 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 114 |
| 15:15 | 0 | 99 | 24 | 2 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| 15:30 | 0 | 111 | 24 | 0 | 12 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 150 |
| 15:45 | 0 | 99 | 10 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 16:00 | 1 | 108 | 20 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 139 |
| 16:15 | 0 | 112 | 15 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 16:30 | 3 | 110 | 14 | 0 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 140 |
| 16:45 | 0 | 113 | 10 | 1 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 |
| 17:00 | 1 | 135 | 21 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 162 |
| 17:15 | 0 | 135 | 23 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 |
| 17:30 | 0 | 131 | 23 | 0 | 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 168 |
| 17:45 | 0 | 107 | 10 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| 18:00 | 0 | 102 | 21 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| 18:15 | 0 | 96 | 20 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| 18:30 | 0 | 91 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 |
| 18:45 | 0 | 64 | 20 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| 19:00 | 0 | 58 | 11 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 19:15 | 0 | 61 | 20 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 92 |
| 19:30 | 0 | 70 | 10 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| 19:45 | 0 | 61 | 14 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 20:00 | 0 | 64 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| 20:15 | 0 | 46 | 15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 20:30 | 0 | 52 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 20:45 | 1 | 48 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| 21:00 | 0 | 38 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 21:15 | 0 | 32 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 21:30 | 0 | 37 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 21:45 | 0 | 26 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 22:00 | 0 | 30 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 22:15 | 0 | 22 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 22:30 | 0 | 34 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 22:45 | 0 | 24 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 23:00 | 0 | 30 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 23:15 | 0 | 18 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 23:30 | 0 | 25 | 5 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 34 |
| 23:45 | 1 | 23 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| **Totals** | **13** | **5543** | **856** | **16** | **442** | **16** | | **17** | **13** | | | | | **6916** |
| **% of Totals** | 0% | 80% | 12% | 0% | 6% | 0% | | 0% | 0% | | | | | 100% |
| **AM Volumes** | 4 | 2123 | 341 | 7 | 148 | 5 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 2642 |
| **% AM** | 0% | 31% | 5% | 0% | 2% | 0% | | 0% | 0% | | | | | 38% |
| **AM Peak Hour** | 05:30 | 07:15 | 07:30 | 08:00 | 07:15 | 06:15 | | 09:30 | 07:00 | | | | | 07:15 |
| **Volume** | 2 | 549 | 71 | 3 | 35 | 2 | | 3 | 3 | | | | | 660 |
| **PM Volumes** | 9 | 3420 | 515 | 9 | 294 | 11 | 0 | 10 | 6 | 0 | 0 | 0 | 0 | 4274 |
| **% PM** | 0% | 49% | 7% | 0% | 4% | 0% | | 0% | 0% | | | | | 62% |
| **PM Peak Hour** | 15:45 | 16:45 | 15:15 | 15:15 | 12:30 | 16:30 | | 14:45 | 16:45 | | | | | 16:45 |
| **Volume** | 4 | 514 | 78 | 4 | 45 | 3 | | 5 | 3 | | | | | 640 |

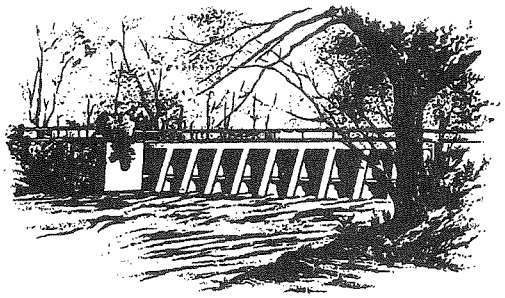
| Directional Peak Periods | AM 7-9 | | | NOON 12-2 | | | PM 4-6 | | | Off Peak Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Classes | Volume | | % | Volume | | % | Volume | | % | Volume | | % |
| | 1014 | ⟷ | 15% | 680 | ⟷ | 10% | 1176 | ⟷ | 17% | 4046 | ⟷ | 59% |

**Classification Definitions**

| | | | | |
|---|---|---|---|---|
| **1** Motorcycles | **4** Buses | **7** > =4-Axle Single Units | **10** >=6-Axle Single Trailers | **13** >=7-Axle Multi-Trailers |
| **2** Passenger Cars | **5** 2-Axle, 6-Tire Single Units | **8** <=4-Axle Single Trailers | **11** <=5-Axle Multi-Trailers | |
| **3** 2-Axle, 4-Tire Single Units | **6** 3-Axle Single Units | **9** 5-Axle Single Trailers | **12** 6-Axle Multi-Trailers | |

# APPENDIX F

## *Fresno Irrigation District Comment Letter*



YOUR MOST VALUABLE RESOURCE - WATER

OFFICE OF
FRESNO IRRIGATION DISTRICT

TELEPHONE (559) 233-7161
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2907 S. MAPLE AVENUE
FRESNO, CALIFORNIA 93725-2208

February 21, 2019

Scott Tyler
City of Fresno
Public Works Department, Engineering Division
2600 Fresno Street, 4th Floor
Fresno, CA. 93721

Scott Odell
Odell Planning and Development
49346 Road 426, Ste. 2
Oakhurst, CA 93644

RE: Peach Avenue Widening Project between Jensen and Butler avenues
N/E Jensen and Peach avenues
FID's Braly No. 14
FID's Central No. 23

Dear Mr. Odell:

The Fresno Irrigation District (FID) has reviewed the City of Fresno's Peach Avenue Widening Project between Jensen and Butler avenues proposing to widen Peach Avenue to allow for four travel lanes, curb and gutter, sidewalks, bike lanes, turn lanes and landscaped median. The project will also include traffic signals, modification to existing traffic signals, and acquiring additional rights-of-way to accommodate the project. FID has the following comments:

**Summary of Requirements:**

- FID Board Approval.
- Varying Width Grant of Easement.
- Canal Bank Improvements.
- Channel Improvements.
- Drive Approaches per FID Detail No. 1-02
- Existing Encroachments removed and/or relocated.
- Review and Approval of all Plans.
- Execute Pipeline Substitution Agreement.
- Replace existing pipeline with 30" ASTM C-361 RGRCP (with MacWrap).
- Execute additional Agreement(s), if necessary.
- Project Fees.



BOARD OF DIRECTORS President RYAN JACOBSEN, Vice-President JERRY PRIETO, JR.
CHRISTOPHER WOOLF, GEORGE PORTER, GREGORY BEBERIAN, General Manager BILL STRETCH

- No Encroachments (i.e. trees, monuments, fences, PUE, etc.).

**Area of Concern 1**

1. FID's Braly No. 14 runs westerly, traverses the project location, and crosses Peach Avenue at the California Avenue Alignment, as shown on the attached FID exhibit map, and will be impacted by the project. Records indicate FID has a 30 feet wide easement recorded on August 18, 1998 as Document No. 98115937, Official Records of Fresno County and a 30 feet wide easement recorded on August 18, 1998 as Document No. 98115938, Official Records of Fresno County.

    a. FID's records are inconsistent for the Braly the attached plans indicate the culvert section of the pipeline under the road was installed in 1974 (45 years old) as 42 inch inside diameter Rubber Gasketed Reinforced Concrete Pipe (RGRCP). RGRCP, that is not constructed to ASTM C-361 standards will not meet FID's current minimum standards for developed (residential, industrial, commercial) parcels or urban areas, however, the plans do not indicate what material was used.

    b. The attached plans for the Braly indicates a section of the pipeline was installed in 1996 (23 years old) as 42 inch inside diameter Rubber Gasketed Reinforced Concrete Pipe (RGRCP). RGRCP meet FID's current minimum standards for developed (residential, industrial, commercial) parcels or urban areas.

2. Due to the age and unknown culvert material of this pipeline, FID requires this pipeline be inspected for adequate structural integrity. Should the evaluation deem the pipeline in poor condition and/or nonstandard material, FID will require the pipeline be replaced, through the existing right-of-way, with new 42-inch inside diameter ASTM C-361 Rubber Gasketed Reinforced Concrete Pipe (RGRCP) which meets FID's standards for developed (residential, industrial, commercial) parcels or urban areas.

3. FID requires all exposed facilities (standpipes, air vents, covers, etc.) within the subject property or directly adjacent to the subject property must be adapted with additional features in order to transition from a rural setting to an urban setting, to mitigate for the effects of new development and increased population, and provide for public safety within FID's property/easement and the development/project.

4. In recent years, the most significant issue with pipelines has been caused by tree root intrusion into pipe joints. The roots enter through the rubber gasketed joint, thus creating a non-water tight joint causing leaks. If the roots continue to grow, the roots will eventually clog the pipe and reduce the flow capacity of the pipeline. This problem causes disruption to FID's customers and increases the

risk of flooding in upstream open channel sections. Subsequent pipeline repairs can be very disruptive to public infrastructure, as well as to FID's operations. The leaking pipelines and pipeline repairs also increase the liability of all parties involved. FID may require external wrap be installed at all pipeline joints within the subject property or any areas where root intrusion may be a future concern based on the proposed improvement at the time of review. This method involves using mastic material that can be externally applied to pipe joints to provide a permanent seal against root intrusion. The product that has been approved is known as MacWrap from Mar Mac. FID is open to other products, but they would need to be reviewed and approved by FID.

5. FID requires the City and/or the City's engineer meet with FID at their earliest convenience to discuss specific requirements, e.g. easement width and alignment, right-of-way width and alignment, pipeline alignment, depth and size, fees, etc.

6. Encroachments – No trees will be allowed within FID's easement. Any trees to be planted around the pipeline shall maintain a distance of 15 feet from edge of pipe. All existing trees shall be removed within FID's easement, should this pipeline be deemed acceptable.

7. Existing trees, bushes, debris, old canal structures, pumps, canal gates, and other non- or in-active FID and private structures may be required to be removed within FID's property/easement, subject to determination by FID.

8. Pipeline Access – FID will continue to access the pipeline from Peach Avenue. In order to access the maintenance road with our larger equipment, FID requires a drive approach wide enough to accommodate the equipment. Every road and canal intersection is different and therefore each access will be different. The major factors affecting the proposed width will be the angle of the road intersecting the Canal, grade of canal bank vs. City road, median vs. no median, etc.

**Area of Concern 2**

1. FID's Central No. 23 runs southwesterly, traverses the project location, and crosses Peach Avenue approximately 200 feet north of Church Avenue, and will be impacted by the project and future development. Records do not show a recorded easement, however, FID does own an easement and the width is as shown on FID's attached Standard Detail Page No. 1-01. Should this project include any street and or utility improvements along Peach Avenue, Church Avenue, or in the vicinity of the canal, FID requires it review and approve all plans.

2. FID requires that, within the limits of the proposed project [and its remainder], the landowner grant an exclusive easement for the land underlying the canal and

associated area along the canal required for maintenance pursuant to Water Code Section 22425 and FID policy. FID's District Canal Right-of-Way Requirements sheet is enclosed for your reference. The proposed easement (width) will depend on several factors including: 1) Width of canal, 2) height of canal banks, 3) final alignment of canal, 4) additional space needed where roads/avenues intersect canal, etc.

3. FID requires that the Engineer/Land Surveyor use the inside top hinge of the canal to define the edge of FID's right-of-way such that FID has a minimum of 20-feet wide right-of-way along the top of bank to be built out full width, clear of obstructions, structures, vegetation, etc. to provide clear passage and full width at all points along the canal bank. There are no minimum or suggested numbers of survey shots to take, but there must be enough survey points such that the top inside hinge of the canal bank is properly identified. Before finalizing plans, the Engineer/Land Surveyor will need to stake both the inside top hinge and the right-of-way/property for FID Staff to field evaluate an adequate width. FID staff must field verify the right-of-way/property boundary and the hinge line edge before signing plans to ensure that there are enough survey points to properly define the canal. The canal right-of-way line should be consistent with adjacent properties so long as the 20 feet minimum width and right-of-way requirements are met.

4. Canal Access – FID will continue to access the Canal from Peach Avenue. In order to access the maintenance road with our larger equipment, FID requires a drive approach wide enough to accommodate the equipment. FID requires a 50-foot wide drive approach on both banks narrowing to a 20 feet wide drive bank (See attached "Drive Approach in Urban Areas" Detail No. 1-02). The 50-foot width is defined as starting from the end portion of the bridge/railing outward (away from the bridge). Every road and canal intersection is different and therefore each access will be different. The major factors affecting the proposed width will be the angle of the road intersecting the Canal, grade of canal bank vs. City road, median vs. no median, etc.

5. It is FID's understanding that Peach Avenue will be extended along the eastern portion of the project location. Any right-of-way required for Peach Avenue, the Central No. 23, and/or FID's points of access must be reserved and obtained now as part of the project so that Peach Avenue can be constructed to the desired width and FID right-of-way(s) are not encroached upon.

6. Typically, for any type of development that impacts a large open canal or is adjacent to one such as the Central Canal, FID requires the applicant to improve the canal with either concrete lining, encasing the canal in a box culvert, or other approved means to protect the canal's integrity for an urban setting. FID does not have sufficient information to determine what kind of improvements will ultimately be required as part of the development. The engineers working on the

project and FID's engineering staff must meet to discuss specific requirements as discussed below. In order to meet the "urban" standards for the canal, FID will require the following minimum conditions:

a. Channel Stabilization: The proposed plan does not indicate any improvements to the Canal. If the applicant is not willing to concrete line the Canal or place it underground within a box culvert, they must come up with another means acceptable to and approved by FID to protect the Canal's integrity. On similar projects, Developers typically propose the following:

    i. Surrounding Development – All proposed building pad elevations must be a minimum of 12-inches above the canal's high water.

    ii. Freeboard – FID typically requires between 1.0 to 1.5 feet of freeboard. Because the Canal is used to route stormwaters, and is one of the larger canals used to convey the stormwater, FID will require a minimum of 1.5 feet of freeboard and a maximum of 2.0 feet. The Developer will be required to either import or export material to match FID's standards.

    iii. Maintenance – this reach of Canal does have a history of high loads of sediment deposits which requires periodic dredging. FID will typically dredge the Canal and deposit the spoils on top of the banks to dry out. Once the spoil has dried, FID will flatten the spoil as time permits. This reach of Canal also has large volumes of trash, debris, shopping carts that are deposited into the Canal. FID's crews will typically remove the trash at the bridge crossings at Peach Avenue and Church Avenue, and another crew will come by to remove the trash. The hauling off of this material may occur several weeks after the trash has been placed on the side of the canal, and the trash may be considered a nuisance (sight and smell). If the City require a different level of maintenance effort, they will need to enter into an agreement for that purpose. The City will be responsible to fund the "higher level" of maintenance.

b. Drive banks/maintenance roads and encroachments (both banks):

    i. All drive banks must be sloped a minimum of 2%, maximum of 4% away from the canal with provisions made for rainfall. Drainage will not be accepted into the Canal and must be routed away from FID property/drive banks. Runoff must be conveyed to nearby public streets or drainage system by drainage swales or other FID acceptable alternatives.

ii. Any drainage systems or swales proposed must be located outside FID's property/easement.

iii. Drive banks shall be built out to the required freeboard and elevation for the full width of the required Canal right-of-way width.

iv. All drive banks shall be overlaid with 3 inches of Class II aggregate base for all-weather access and for dust suppression.

v. Encroachments - All existing trees, bushes, debris, fencing, and other structures must be removed within FID's property/easement.

7. Trail - It is FID's understanding that a trail is master-planned along the Central Canal bank. As with developments with trails proposed along the canals, FID will not allow the trail to encroach/overlap FID's canal easement without an agreement in place. The following requirements are intended for trail projects adjacent to FID-owned properties and right-of-ways for open canals:

   a. FID will not allow the trail easement to be in common use with FID-owned property or easements.

   b. FID requires all trail improvements be placed outside of FID-owned properties and easements.

   c. FID will not allow any portion of a tree canopy to encroach within its properties or easements.

   d. FID's canals will not accept any drainage from the trail or the canal bank.

   e. FID may require some improvements be made to the canal depending on the existing canal condition, the proposed trail, and the adjacent development.

8. A Trail fence between Trail and Canal is required unless an agreement is in place between City of Fresno and FID.

9. If a fence will be installed between the improvements and open canal, a block/masonry wall shall be required. Chain-link and wood fencing will no longer be accepted for urban developments.

10. Construction within the Central Canal will only be allowed/permitted on or near (above or below) FID's facilities outside of the irrigation season. The allowable construction period occurs generally during the months of October through January, but is subject to change depending on hydrological conditions.

11. This canal is fairly large and therefore any extensions or additions to the existing Peach Avenue Bridge crossing must be designed to maintain existing freeboard and allow FID to continue to convey the water in a safe and efficient manner without altering the existing conditions for operations and maintenance.

**General Comments**

1. FID requires its review and approval of all improvement plans which affect its property/easements and canal/pipeline facilities including but not limited to Sewer, Water, Fresno Metropolitan Flood Control District (FMFCD), Street, Landscaping, Dry Utilities, and all other utilities.

2. FID requires the Applicant/Developer to submit for FID's approval a grading and drainage plan which shows that the proposed development will not endanger the structural integrity of the Canal, or result in drainage patterns that could adversely affect FID.

3. All existing trees, bushes, debris, old canal structures, pumps, canal gates, and other non- or in-active FID and private structures must be removed within FID's property/easement and the development project limits.

4. No large earthmoving equipment (paddle wheel scrapers, graders, excavators, etc.) will be allowed within FID's easement and the grading contractor will be responsible for the repair of all damage to the pipeline caused by contractors grading activities.

5. FID is concerned about the potential vibrations caused by construction efforts near existing District facilities as it may cause damage to FID's canals, pipelines and culverts. The City and its contractor(s) must keep all large equipment, construction material, and soil stockpile outside of FID's easement and a minimum of 30 feet away from existing concrete pipe. The City and/or its contractor(s) will be responsible for all damages caused by construction activities.

6. FID does not allow FID owned property or easements to be in common use with public utility and/or road easements and right-of-ways, but will in certain instances allow for its property to be in common use with landscape easements if the City of Fresno enters into the appropriate agreement to be determined by district.

7. FID requires its easements be shown on all maps/plans with proper recording information, and that FID be made a party to signing all final maps/plans.

8. Footings of retaining walls shall not encroach onto FID property/easement areas.

9. Trees will not be permitted within FID's property/easement areas.

10. As with most City projects, there will be considerable time and effort required of FID's staff to plan, coordinate, engineer, review plans, prepare agreements, and inspect the project. FID's cost for associated plan review will vary and will be determined at the time of the plan review.

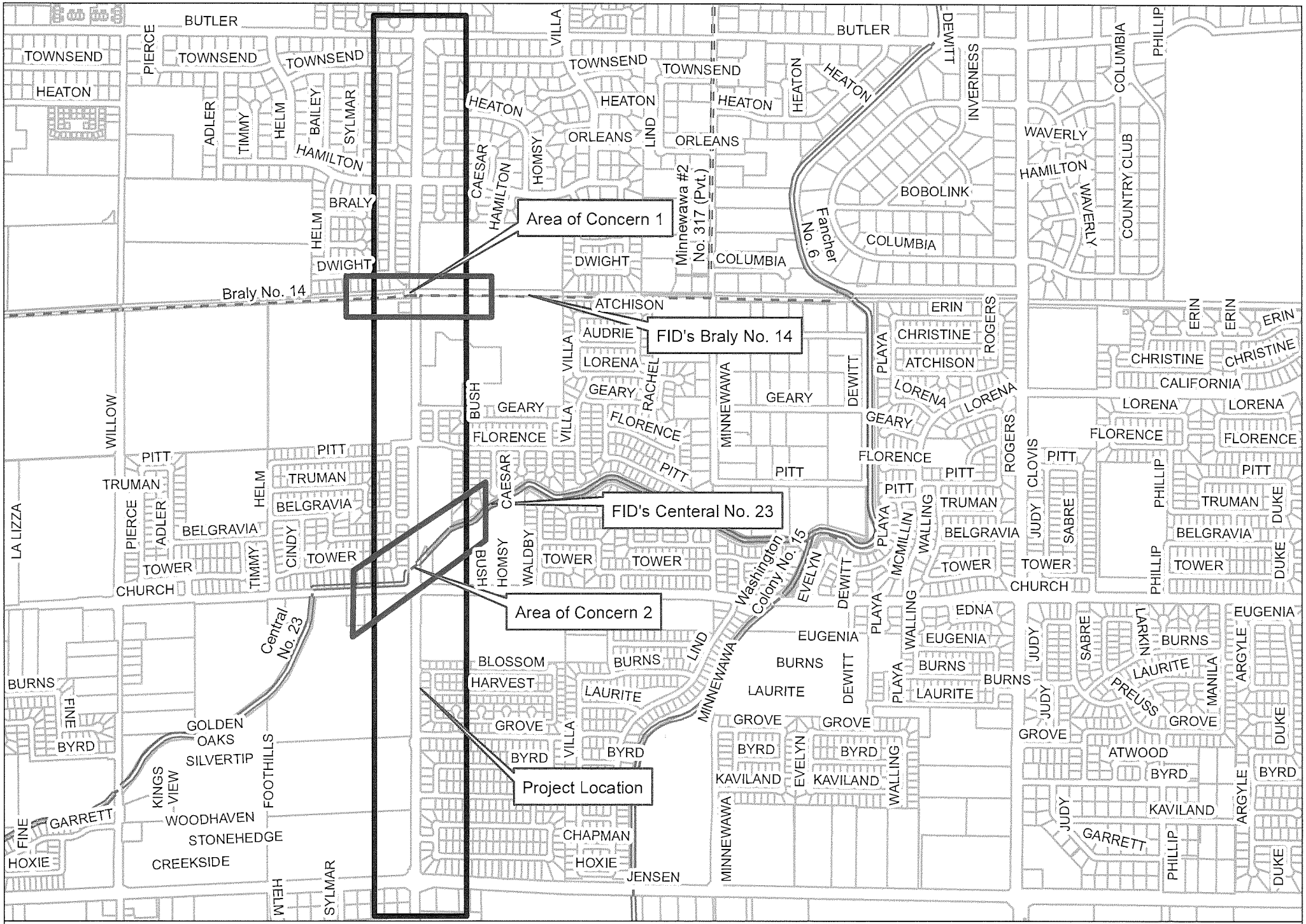
11. The above comments are not to be construed as the only requests FID will have regarding this project. FID will make additional comments and requests as necessary as the project progresses and more detail becomes available.

Thank you for submitting this for our review. We appreciate the opportunity to review and comment on the subject documents for the proposed project. If you have any questions please feel free to contact Jeremy Landrith at (559) 233-7161 extension 7407 or jlandrith@fresnoirrigation.com.

Sincerely,

Laurence Kimura, P.E.
Chief Engineer

Attachment




This map was produced by the Fresno Irrigation District and is provided for reference and informational purposes only and is not intended to show map scale accuracy or all inclusive map features, nor for legal purposes. FID makes no statements regarding the accuracy of this map as the features shown are in their approximate location. Please contact the FID Engineering Dept. at (559) 233-7161 for further information on FID facilities.

Legend

- FID Canal
- Private Canal
- Abandoned Canal
- FID Pipeline
- Private Pipeline
- Abandoned Pipeline
- Stream Group
- Other-Creek\River
- Other-Pipeline
- FID Boundary
- Railroad
- Streets & Hwys
- Parcel
- FMFCD Acquired Basins
- FMFCD Proposed Basins

0 550 1,100 Feet

1 inch = 1,096.15 feet

N S W E

Date Saved: 02/13/2019 8:24:19 AM
Path: G:\Fidgis\20190131 Master.mxd

Brad ~~Kerner~~ BC&F
Kerner

Drive Approach

**Christopher Lundeen**

**From:** Scott Odell <scott@odellplanning.com>
**Sent:** Monday, February 4, 2019 4:16 PM
**To:** Engineering Review
**Cc:** Brad Kerner; Timothy Flynn; Scott.Tyler@fresno.gov
**Subject:** Peach Avenue Widening Project
**Attachments:** 2 Peach Avenue Project Location.pdf; 8-9 Project Limits Peach North.pdf; 10-11 Project Limits Peach South.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Completed

Good Afternoon,

The City of Fresno is preparing CEQA documentation for the Peach Avenue Widening Between Jensen and Butler Avenues Project and our firm is the environmental consultant for the project. The project was originally proposed several years ago and is now being carried forward. We would like to have your preliminary review and comment on this project as soon as possible for use in the City's environmental document. Please address the letter to Scott Tyler (address below) and copy our office.

Scott Tyler, PE
City of Fresno, Public Works Manager
Engineering Division
2600 Fresno Street, 4th Floor
Fresno, CA 93721
Phone: (559) 621-8654
Email: scott.tyler@fresno.gov

A summary project description is provided below and is essentially unchanged from the earlier version. Exhibits are attached. Please let me know if you have any questions.

Thank you,

Scott B. Odell, AICP
Principal Planner/President
ODELL *Planning & Research, Inc.*
49346 Road 426, Suite 2
Oakhurst, CA 93644
(559) 472-7167
www.odellplanning.com

Project Description:

The project encompasses an approximately 1.57-mile segment of Peach Avenue in southeast Fresno. The segment extends from Butler Avenue on the north to a point approximately 730 feet south of Jensen Avenue on the south. The entire road segment is within with the City of Fresno except the portion south of Jensen Avenue, which is within the County of Fresno. The City proposes to construct improvements in the county area to allow a safe transition of Peach Avenue from a four-lane arterial street north of Jensen Avenue to a two-lane street south of Jensen Avenue.

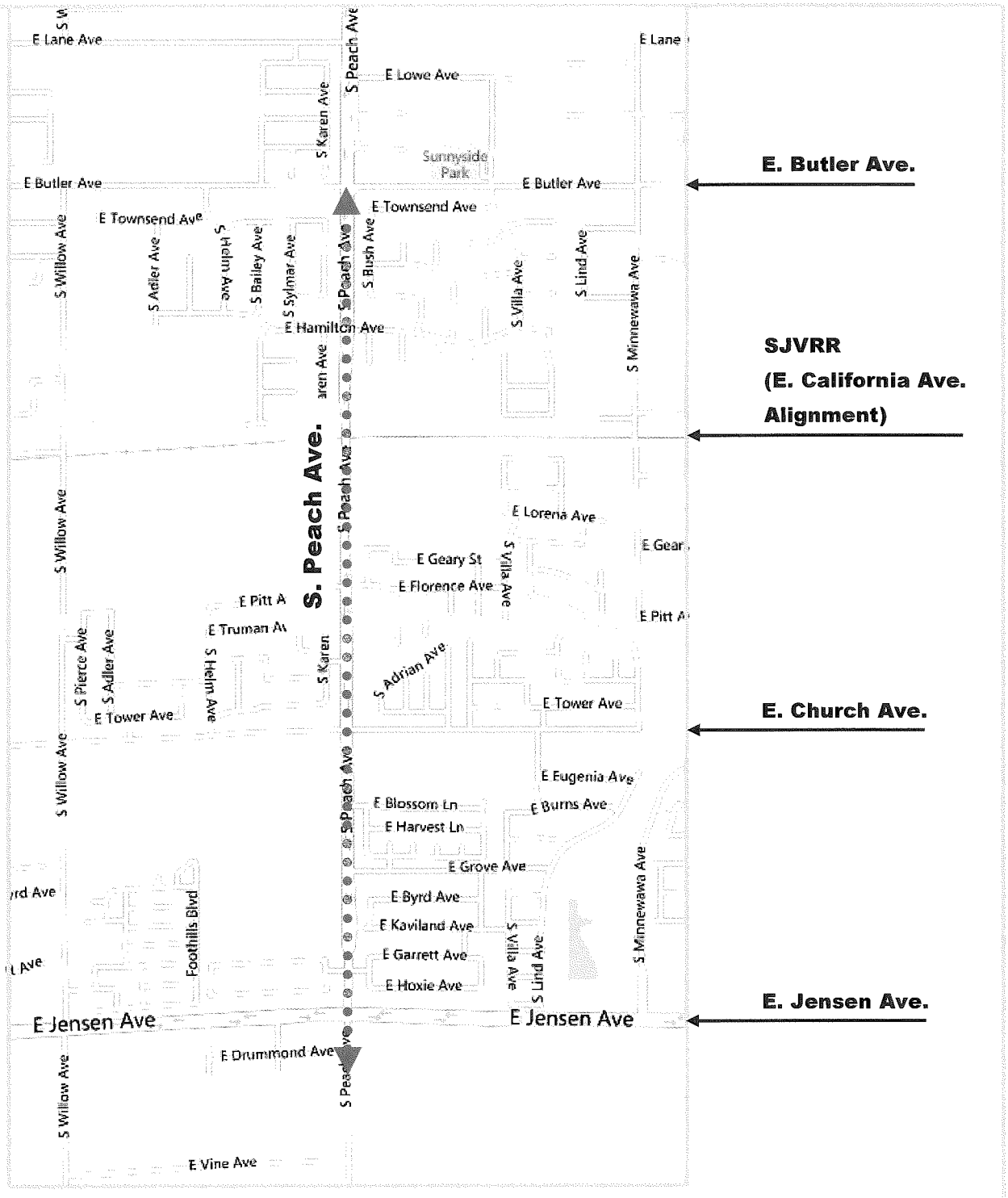
The project would result in the improvement of Peach Avenue to the City's arterial street standard. Peach Avenue would have curb, gutter, and sidewalks; bike lanes; four travel lanes; protected left-turn lanes; and landscaped median islands. The project includes a

new traffic signal at Peach and Hamilton Avenues and modifications to existing traffic signals, Fresno Irrigation District facilities, and the railroad crossing on the California Avenue alignment.

In order to widen Peach Avenue to a four-lane arterial street, the City must acquire or obtain by dedication additional land along sections of the road where the existing public right-of-way is too narrow to accommodate the proposed arterial street improvements. The locations and Assessor's Parcel Numbers of the parcels from which additional land would be required are as follows:

1) Ponding basin on the east side of Peach Avenue, south of Hamilton Avenue (Fresno County Assessor's Parcel Numbers (APN) 473-121-01, -02, -03, and -04),
2) Vacant land on the west side of Peach Avenue, between the California Avenue alignment and the Florence Avenue alignment (APNs 481-020-31 and -47),
3) Vacant land on the east side of Peach Avenue, between Florence and Church Avenues (APN 481-020-66S),
4) Vacant and agricultural land on the west side of Peach Avenue, between Church and Jensen Avenues (APNs 481-090-28, 481-030-03 and -04), and
5) Other land as may be necessary to implement the project.

The depth of the additional land needed along Peach Avenue measured from the edge of the existing right-of-way would vary from approximately 5 feet to 30 feet. No residences exist on any of the parcels from which additional right-of-way would be required. No additional right-of-way would be required south of Jensen Avenue.




N

One-half Mile

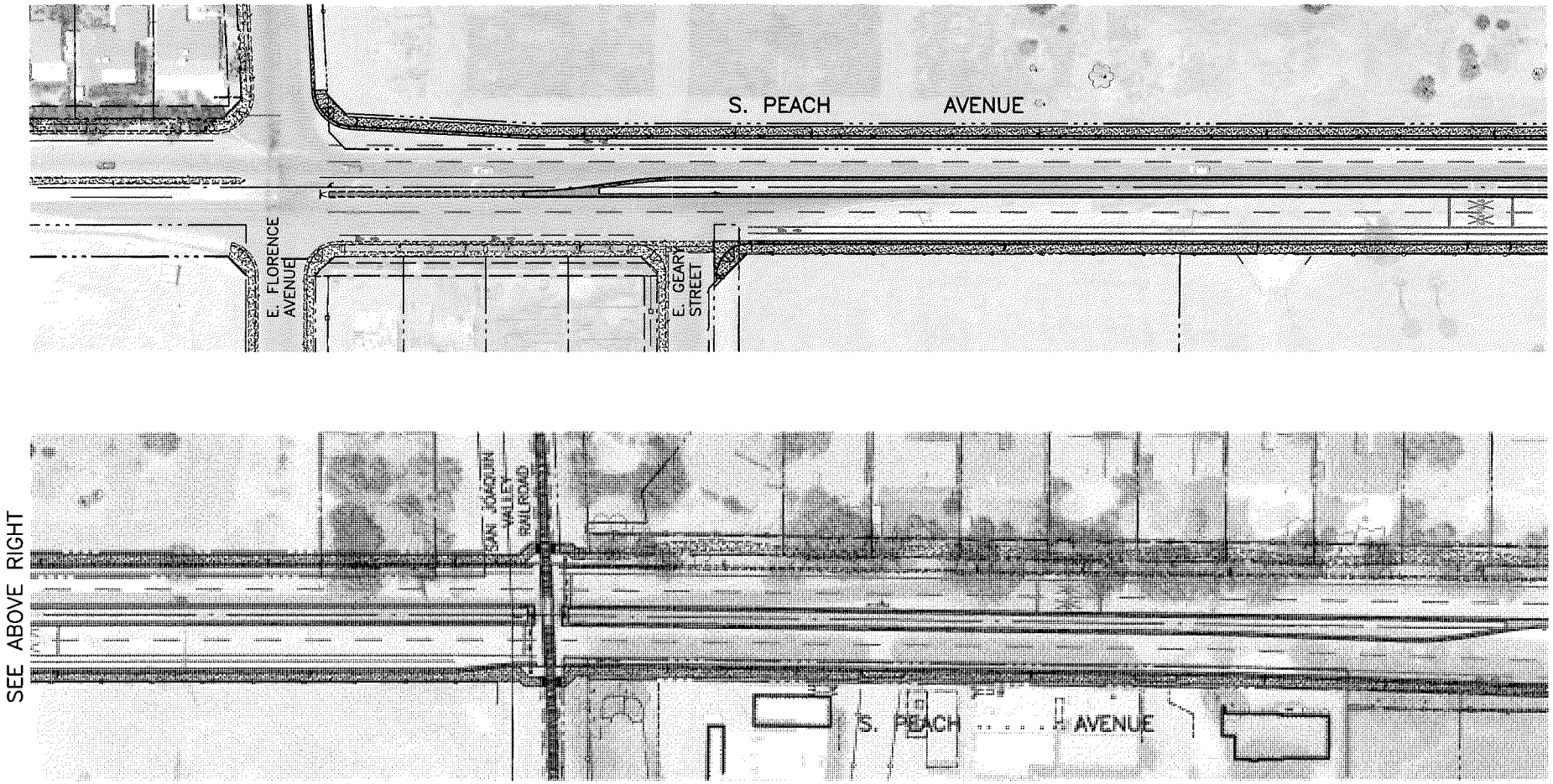
Project Location

**FIGURE 2**
**Project Location**

**City of Fresno**

**Peach Avenue Widening Between Jensen and Butler Avenues Project**

ODELL *Planning & Research, Inc.*

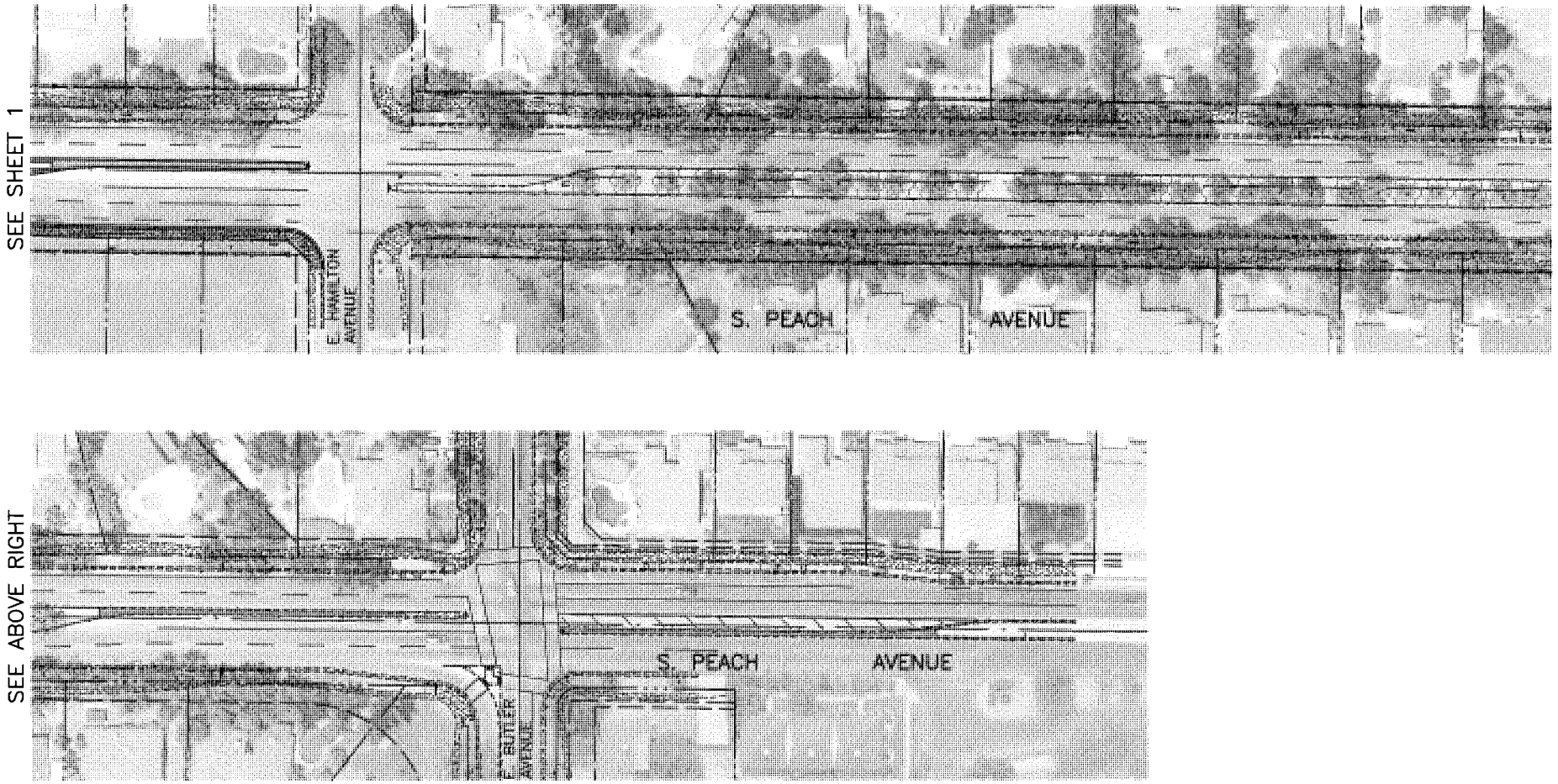



0 20 40 80 120 160
SCALE IN FEET

Figure 8

| | | | | |
|---|---|---|---|---|
| Blair, Church Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>461 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH NORTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 1<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_8744\212297_Project Limit_Peach North.dwg; Layout1 Plot by: joshua Nov 14, 2018 - 2:50pm




0 20 40 80 120 160
SCALE IN FEET

Figure 9

| | | | | |
|---|---|---|---|---|
| Blair, Church Flynn CONSULTING ENGINEERS | CONSULTANT: Blair, Church & Flynn Consulting Engineers 451 Clovis Avenue, Suite 200 Clovis, California 93612 Tel (559) 326-1400 Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH NORTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE. 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 2<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_8744\212297_Project Limit_Peach North.dwg; Layout2 Plot by: Joshua Nov 14, 2018 - 2:50pm

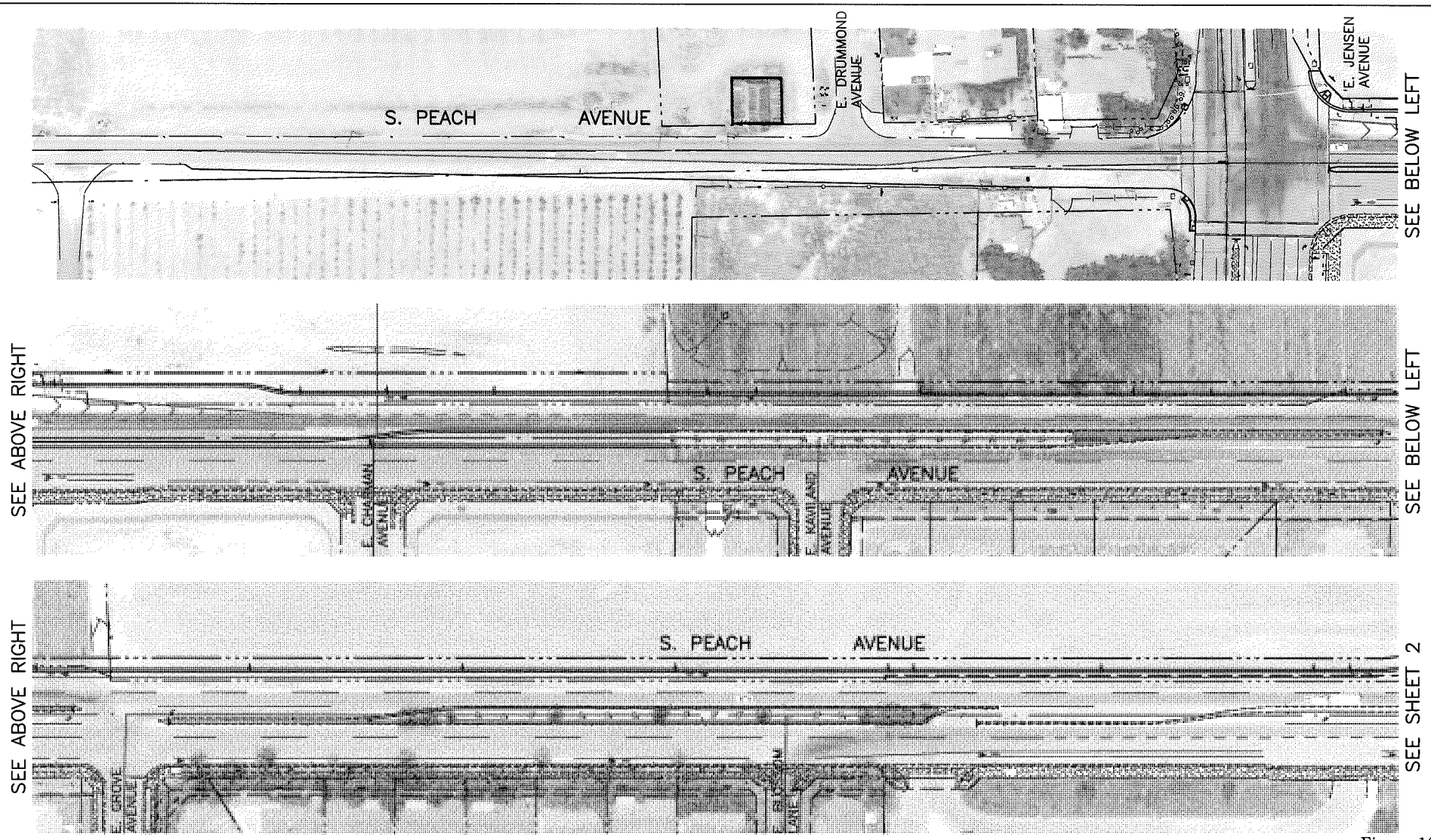
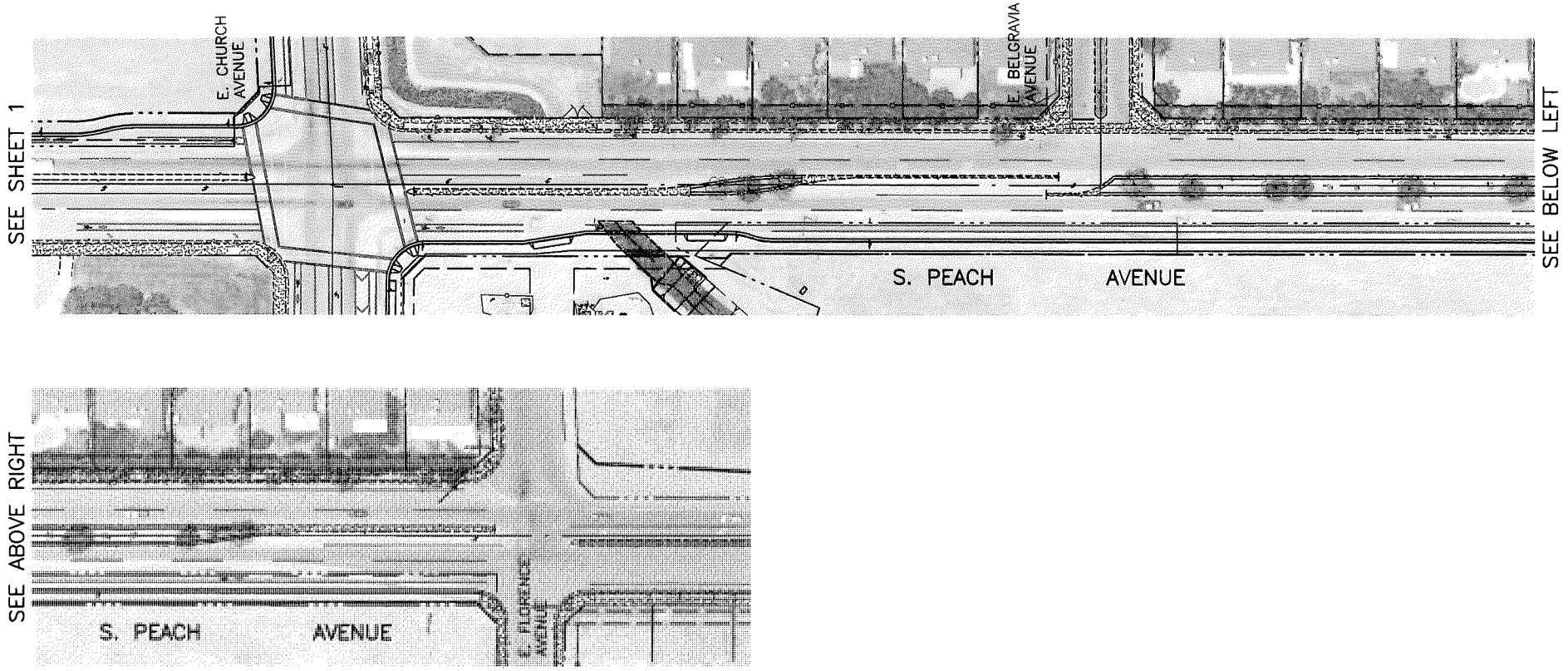



Figure 10

| | | | | |
|---|---|---|---|---|
| Blair, Church Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>481 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH SOUTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 1<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach South.dwg; Layout1 Plot by: Joshua Nov 14, 2018 - 2:47pm




0 20 40 80 120 160
SCALE IN FEET

Figure 11

| | | | | |
|---|---|---|---|---|
| Blair, Church Flynn CONSULTING ENGINEERS | CONSULTANT<br>Blair, Church & Flynn Consulting Engineers<br>461 Clovis Avenue, Suite 200<br>Clovis, California 93612<br>Tel (559) 326-1400<br>Fax (559) 326-1500 | CITY OF FRESNO<br>PEACH AVENUE WIDENING<br>PEACH SOUTH<br>PROJECT LIMITS | DR. BY JCA<br>CH. BY BRK<br>DATE 2018-11-14<br>SCALE: AS NOTED | SHEET NO. 2<br>OF 2 SHEETS |

Drawing: C:\Users\Joshua\appdata\local\temp\AcPublish_6744\212297_Project Limit_Peach South.dwg; Layout2 Plot by: joshua Nov 14, 2018 - 2:47pm

NOTES:

1. DIMENSIONS AND NOTES ARE FOR LAYOUT PURPOSES ONLY. A SCALED DRAWING SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.

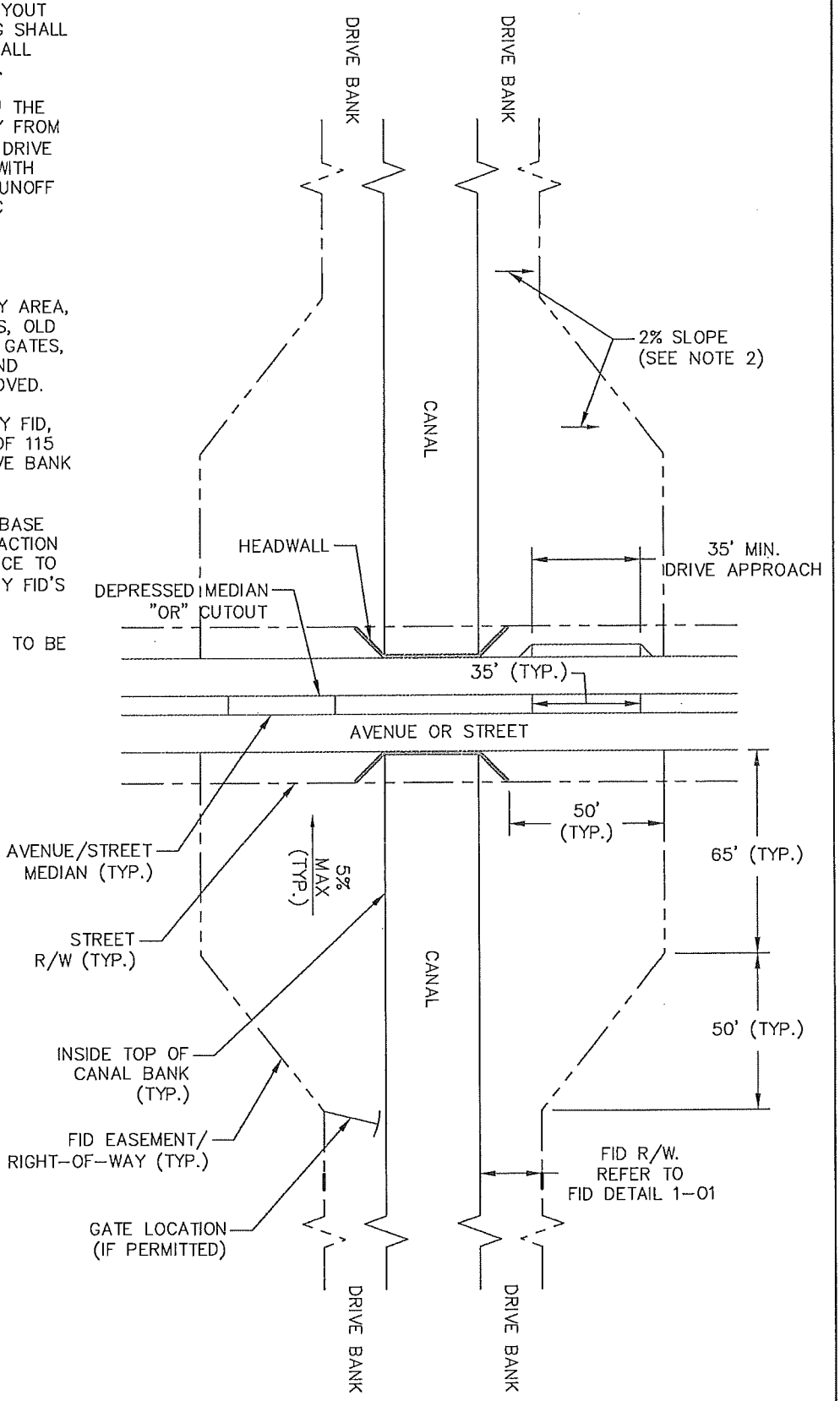
2. DRAINAGE WILL NOT BE ACCEPTED IN THE CANAL AND SHALL BE ROUTED AWAY FROM FID PROPERTY/DRIVE BANKS. SLOPE DRIVE BANKS 2% AWAY FROM THE CANAL WITH PROVISIONS MADE FOR RAINFALL. RUNOFF TO BE CONVEYED TO NEARBY PUBLIC STREETS OR DRAINAGE SYSTEM BY DRAINAGE SWALES OR OTHER FID ACCEPTABLE ALTERNATIVES.

3. WITHIN FID EASEMENT/RIGHT-OF-WAY AREA, ALL EXISTING TREES, BUSHES, DEBRIS, OLD CANAL STRUCTURES, PUMPS, CANAL GATES, AND OTHER NON OR INACTIVE FID AND PRIVATE STRUCTURES MUST BE REMOVED.

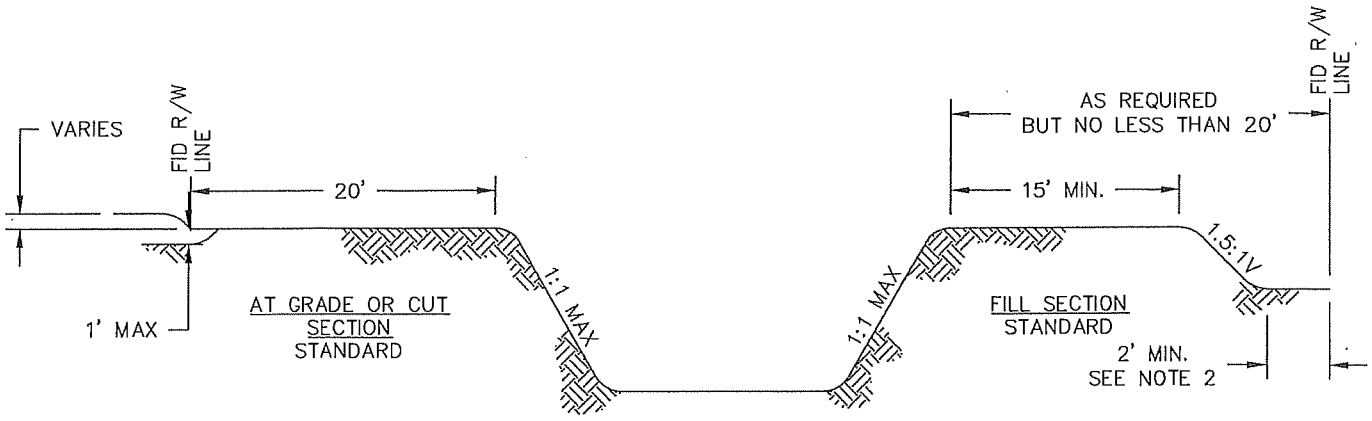
4. IF AN ACCESS GATE IS PERMITTED BY FID, GATE MUST BE PLACED A MINIMUM OF 115 FEET AWAY FROM ROAD, WHERE DRIVE BANK NARROWS TO 20 FEET.

5. THREE INCH (3") THICK AGGREGATE BASE COMPACTED TO 93% RELATIVE COMPACTION SHALL BE REQUIRED AT THE ENTRANCE TO EACH DRIVE BANK AS DETERMINED BY FID'S ENGINEER. NO REGRIND ASPHALT.

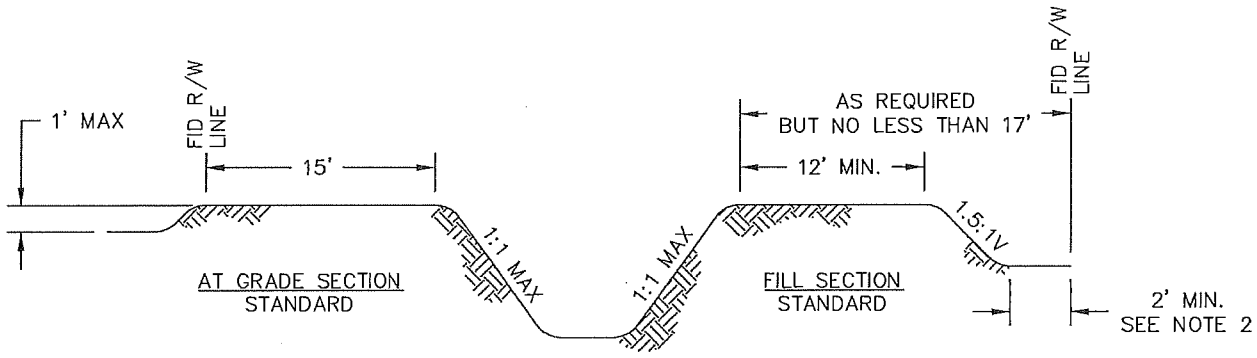
6. DRIVEWAY APPROACH MINIMUM WIDTH TO BE 35 FEET.



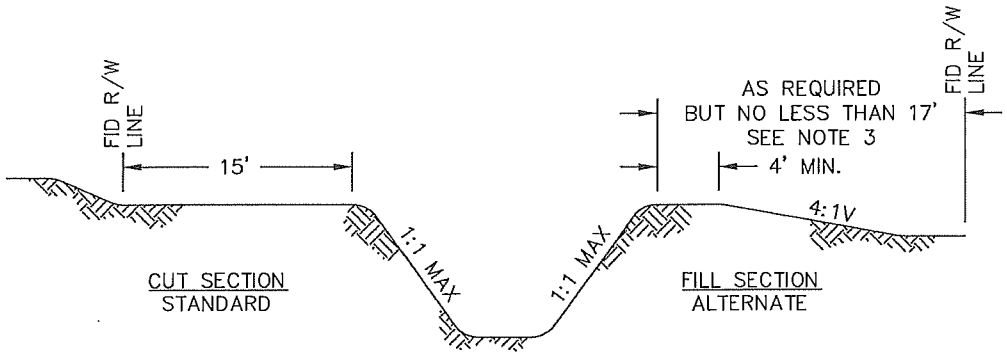

| | | | |
|---|---|---|---|
| FRESNO IRRIGATION DISTRICT | | DRIVE APPROACH – URBAN AREAS | |
| "Your Most Valuable Resource – Water" | | SCALE: NOT TO SCALE | STANDARD DETAIL 1-02 |
| | | DATE: JANUARY 2018 | SHEET 1 OF 1 |




50 C.F.S. & UP




UNDER 50 C.F.S.




UNDER 50 C.F.S.

NOTES:

1. ALL PRIVATE FACILITIES TO BE LOCATED OUTSIDE FID RIGHT-OF-WAY.
2. ADD 2 FEET TO EMBANKMENT WIDTH TO ESTABLISH OVERALL RIGHT-OF-WAY WIDTH TO ACCOMMODATE GRADER BLADE CLEARANCE.
3. THE ALTERNATE SECTION CANNOT BE USED IF THE OVERALL WIDTH EXCEEDS THE STANDARD WIDTH AND IS PERMITTED ONLY WHEN DISTRICT OPERATIONS AND MAINTENANCE FUNCTIONS DO NOT REQUIRE A STANDARD ROADWAY.

| | | | |
|---|---|---|---|
| FRESNO IRRIGATION DISTRICT | | CANAL RIGHT-OF-WAY | |
| "Your Most Valuable Resource – Water" | | SCALE: NOT TO SCALE | STANDARD DETAIL 1-01 |
| | | DATE: JANUARY 2018 | SHEET 1 OF 1 |

98115938

3

RECORDED IN OFFICIAL RECORDS OF
FRESNO COUNTY, CALIFORNIA
AT ____ MIN PAST 11 A M
AUG 18 1998
WILLIAM C. GREENWOOD
County Recorder
FEE
$

*Documentary Transfer Tax – $0.00*
M. Nichols
*For the Benefit of:*

*FRESNO IRRIGATION DISTRICT*
*2907 SOUTH MAPLE AVENUE*
*FRESNO CA 93725-2218*

*Recording Information*

**NOTICE OF ABANDONMENT OF OPEN CANAL AND SURPLUS EASEMENT AND RESERVATION OF REMAINING EASEMENT FOR PIPELINE BY FRESNO IRRIGATION DISTRICT**

Location: Peach to Willow Avenue

WHEREAS, the Fresno Irrigation District owns an irrigation canal and secondary prescriptive easement for the operation and maintenance of the Braly Canal No. 14, a portion of which crosses over certain real property, which said real property is described as follows:

> Lots 2 and 15 of Newhall Tract, according to the survey thereof, recorded in Book 2, Page 42, of the Record of Surveys, Official Records of Fresno.

WHEREAS, the location of the subject reach of said canal and secondary easement over and across said real property is described as follows:

> The North thirty five feet (35') of Lots 2 and 15 of Newhall Tract, according to the survey thereof, recorded in Book 2, Page 42, of the Record of Surveys, Official Records of Fresno.

WHEREAS, the District has pipelined the Braly Canal and no longer requires more than thirty feet (30') of its existing thirty five (35') wide easement for the maintenance of said pipeline and its appurtenant facilities, and

WHEREAS, the District wishes to abandon its surplus easement and right-of-way without affecting its existing easement rights in the portion of the right-of-way to be reserved by District.



GIS 250

NOW THEREFORE, the Board of Directors of the Fresno Irrigation District does hereby declare its intention to abandon the South five feet (5') of easement; and to reserve the North thirty feet (30') of said easement and right-of-way for the operation and maintenance of its irrigation pipeline and appurtenances. The location of the pipeline easement reserved by this Notice is more particularly described as follows:

> The North thirty feet (30') of Lots 2 and 15 of Newhall Tract, according to the survey thereof, recorded in Book 2, Page 42, of the Record of Surveys, Official Records of Fresno.

Upon recording this Notice, that portion of the easement herein abandoned will no longer constitute a public service easement.

I, Robert B. Mount, Secretary of the Board of Directors of the Fresno Irrigation District, hereby certify that abandonment of the designated portion of the District's easement was approved by the Board at a regular meeting thereof duly called and held July 22, 1998.

Dated: August 14, 1998

By: Robert B. Mount

Robert B. Mount, Secretary

# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Fresno

On August 14, 1998 (Date) before me, MAVA NICHOLS, NOTARY PUBLIC, (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared ROBERT B. MOUAT, (Name(s) of Signer(s))

☒ personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Mava Nichols
Signature of Notary Public

BBR1 MAVA NICHOLS COMM. #1090342 NOTARY PUBLIC-CALIFORNIA PRINCIPAL OFFICE IN FRESNO COUNTY My Commission Exp. March 15, 2000 BBR1

## OPTIONAL

*Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.*

### Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

### Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

© 1996 National Notary Association • 8236 Remmet Ave., P.O. Box 7184 • Canoga Park, CA 91309-7184

98115937

98115937

3

RECORDED IN OFFICIAL RECORDS OF
FRESNO COUNTY, CALIFORNIA
AT ___ MIN PAST 11 M
AUG 18 1998
WILLIAM C. GREENWOOD
County Recorder
FEE
$

*Documentary Transfer Tax -- $0.00*

M Nichols

*For the Benefit of:*

*FRESNO IRRIGATION DISTRICT*
*2907 SOUTH MAPLE AVENUE*
*FRESNO CA 93725-2218*

*Recording Information*

**NOTICE OF ABANDONMENT OF OPEN CANAL AND SURPLUS EASEMENT AND RESERVATION OF REMAINING EASEMENT FOR PIPELINE BY FRESNO IRRIGATION DISTRICT**

Location: E/O Peach Avenue

WHEREAS, the Fresno Irrigation District owns an irrigation canal and secondary prescriptive easement for the operation and maintenance of the Braly Canal No. 14, a portion of which crosses over certain real property, which said real property is described as follows:

The Northwest Quarter of the Northwest Quarter of Section 17, Township 14 South, Range 21 East, Mount Diablo Base and Meridian.

WHEREAS, the location of the subject reach of said canal and secondary easement over and across said real property is described as follows:

The North thirty five feet (35') of The Northwest Quarter of the Northwest Quarter of Section 17, Township 14 South, Range 21 East, Mount Diablo Base and Meridian.

WHEREAS, the District has pipelined the Braly Canal and no longer requires more than thirty feet (30') of its existing thirty five (35') wide easement for the maintenance of said pipeline and its appurtenant facilities, and

WHEREAS, the District wishes to abandon its surplus easement and right-of-way without affecting its existing easement rights in the portion of the right-of-way to be reserved by District.



GIS 249

NOW THEREFORE, the Board of Directors of the Fresno Irrigation District does hereby declare its intention to abandon the South five feet (5') of easement; and to reserve the North thirty feet (30') of said easement and right-of-way for the operation and maintenance of its irrigation pipeline and appurtenances. The location of the pipeline easement reserved by this Notice is more particularly described as follows:

The North thirty feet (30') of the Northwest Quarter of the Northwest Quarter of Section 17, Township 14 South, Range 21 East, Mount Diablo Base and Meridian.

Upon recording this Notice, that portion of the easement herein abandoned will no longer constitute a public service easement.

I, Robert B. Mount, Secretary of the Board of Directors of the Fresno Irrigation District, hereby certify that abandonment of the designated portion of the District's easement was approved by the Board at a regular meeting thereof duly called and held July 22, 1998.

Dated: August 14, 1998

By: Robert B Mount
Robert B. Mount, Secretary

# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Fresno

On August 14, 1998 (Date) before me, MAVA NICHOLS, NOTARY PUBLIC (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared ROBERT B. MOUNT (Name(s) of Signer(s))

☒ personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Mava Nichols
Signature of Notary Public

BBR1 MAVA NICHOLS COMM. #1090342 NOTARY PUBLIC-CALIFORNIA PRINCIPAL OFFICE IN FRESNO COUNTY My Commission Exp. March 15, 2000 BBR1

## OPTIONAL

*Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.*

### Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

### Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

Signer's Name: _____

☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

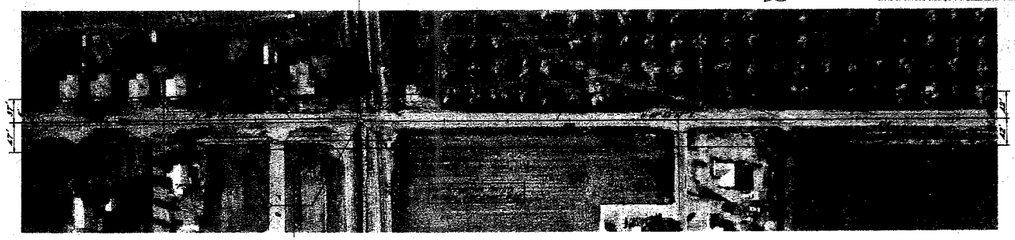
Signer Is Representing:

© 1996 National Notary Association • 8236 Remmet Ave., P.O. Box 7184 • Canoga Park, CA 91309-7184

Braly #14 @ Peach Ave

PROJECT
PEACH AVENUE

APPROVED
FRESNO COUNTY ASST. DIRECTOR OF PUBLIC WORKS
CIVIL ENGINEER LICENSE NO.



REDUCED PLAN
USE SCALE BELOW
3 INCHES ON ORIGINAL PLAN

U.S.C.&G.S. B.M. #FIAST
Bronze Cap in Concrete
Sta "F" 298+34.0, 8.0 Rt.
Elev. = 388.752

Existing Profile - "F" Line

FOR R/W DATA AND ACCURATE ACCESS DETERMINATION
SEE R/W RECORDS AT PUBLIC WORKS OFFICE

PLAN SCALE 1"=40'

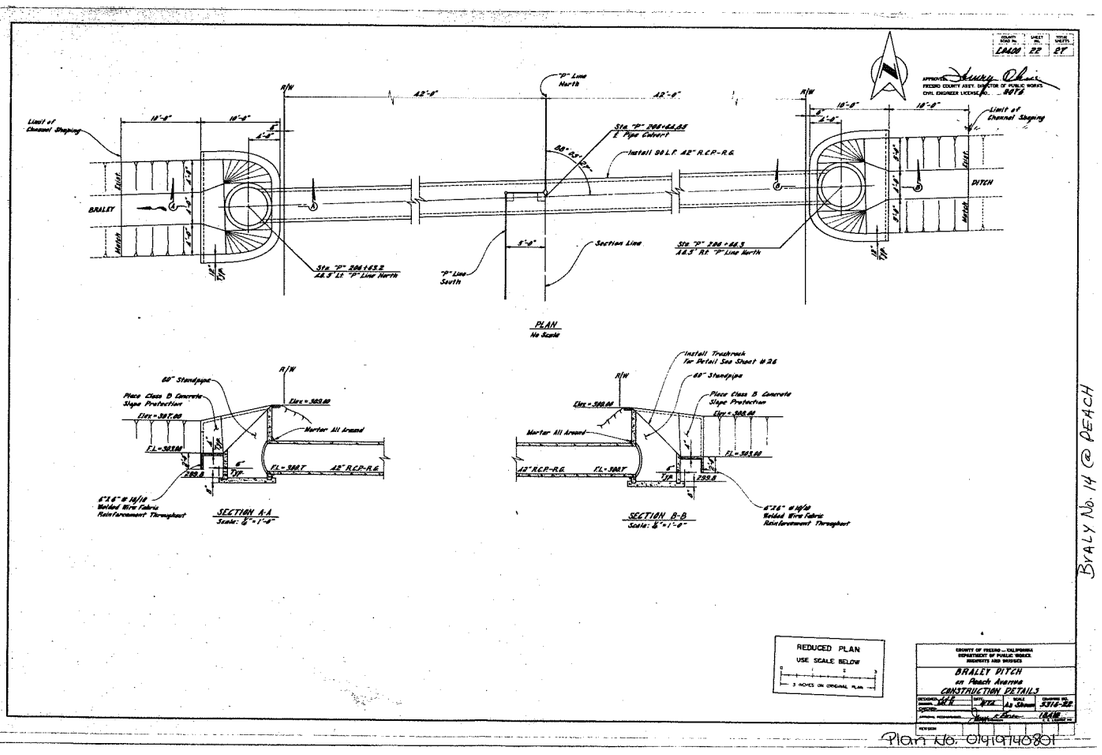
PROFILE SCALE Horizontal 1"=40'
Vertical 1"=8'

FORMAT:

DRAWING NO. 1319-21

Plan No. 01419740801

BRALY No. 14 @ PEACH




REDUCED PLAN
USE SCALE BELOW
3 INCHES ON ORIGINAL PLAN

COUNTY OF FRESNO — CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
ENGINEERS AND SURVEYORS

BRALEY DITCH
on Peach Avenue
CONSTRUCTION DETAILS

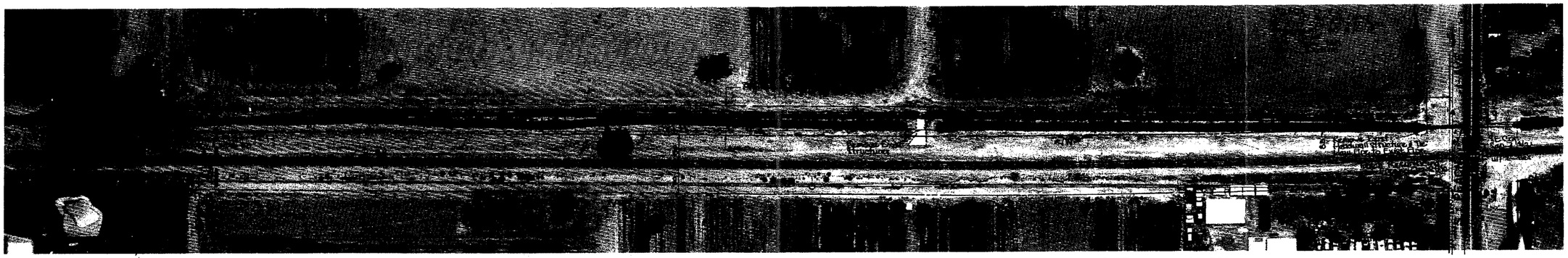
DESIGNED: GEO. K.
DRAWN: GEO. K.
CHECKED:
APPROVED RECOMMENDED:
REVISED:

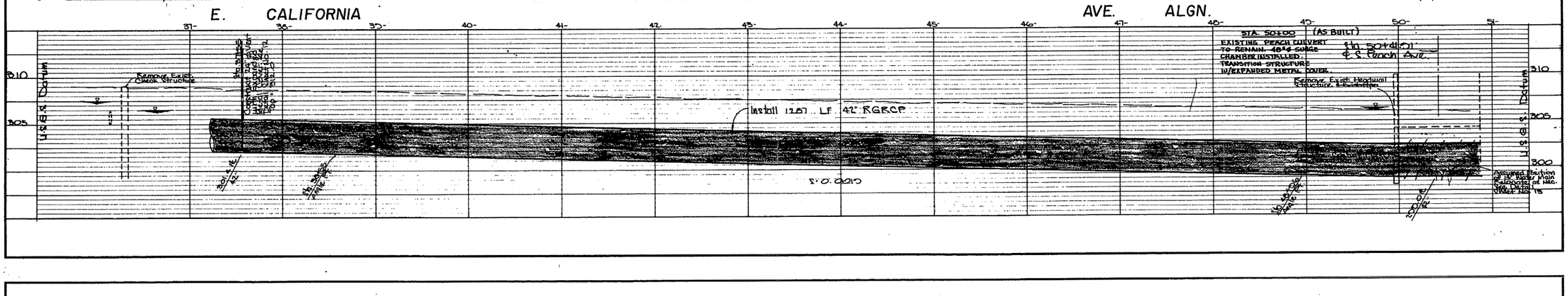
SCALE: As Shown
DRAWING NO. 1319-21
SHEET NO. 1 OF 1 SHEETS

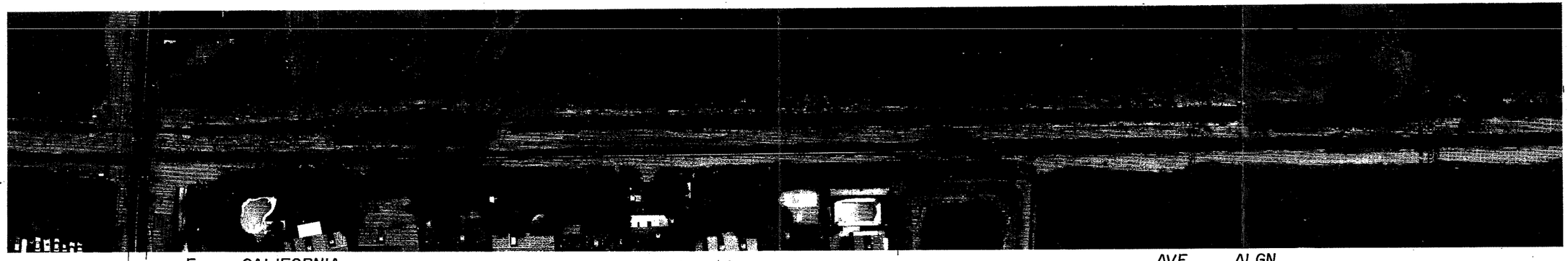
Plan No. 01419740801

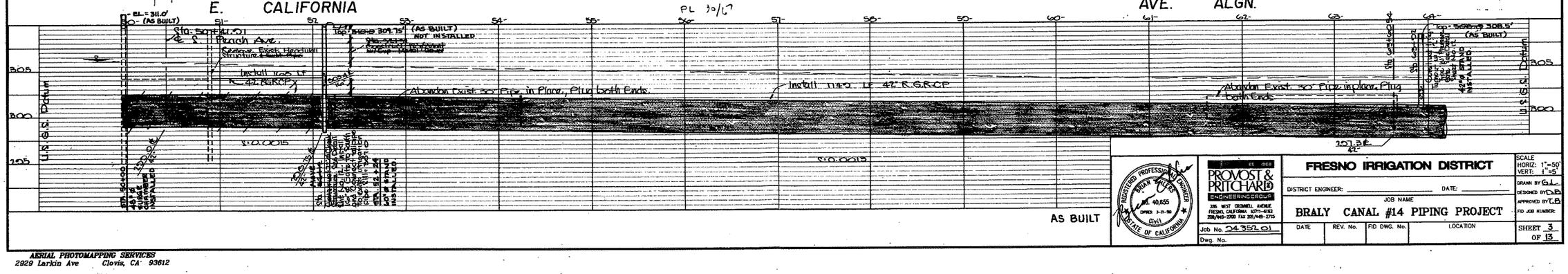
Braly No. 14 @ PEACH

Plan No. 01419740801








AERIAL PHOTOMAPPING SERVICES
2929 Larkin Ave Clovis, CA 93612

REGISTERED PROFESSIONAL ENGINEER BRIAN K. WILKINS No. 40,655 Civil STATE OF CALIFORNIA

PROVOST & PRITCHARD ENGINEERING GROUP
286 WEST CROMWELL AVENUE, FRESNO, CALIFORNIA 93711-6162
209/440-2500 FAX 209/448-2775

**FRESNO IRRIGATION DISTRICT**

DISTRICT ENGINEER: _____ DATE: _____

JOB NAME

**BRALY CANAL #14 PIPING PROJECT**

| Job No. 24352.01 | DATE | REV. No. | FID DWG. No. | LOCATION |
|---|---|---|---|---|
| Dwg. No. | | | | |

SCALE HORIZ: 1"=50' VERT: 1"=5'
DRAWN BY G.L.
DESIGNED BY D.B.
APPROVED BY L.B.
FID JOB NUMBER:
SHEET 3 OF 13

# APPENDIX G

## *Fresno Metropolitan Flood Control District Comment Letter*

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

File 550.10
"BD", "BE",
"BF", "PP"

August 26, 2013

Mr. Michael W. Holly
City of Fresno, Capital Management Division
2600 Fresno Street, Room 4016
Fresno, CA 93721

Dear Mr. Holly,

**Environmental Assessment (EA) No. EA-13-013**
**Peach Avenue Widening Between Jensen and Butler Avenues**
**Drainage Areas "BE"," BD", "BF" and "PP"**

The Fresno Metropolitan Flood Control District (District) bears responsibility for storm water management within the Fresno-Clovis metropolitan area, including the area of the project site. Within the metropolitan area, storm runoff produced by land development is to be controlled through a system of pipelines and storm retention basins. The proposed project lies within the District's Drainage Areas "BE"," BD", "BF" and "PP".

The project will require construction of Storm Drainage and Flood Control Master Plan facilities as shown on Exhibit Nos. 1, 2 and 3. A Development Agreement shall be executed with the District to effect any construction reimbursement costs. Construction of the Master Plan facilities identified on Exhibit Nos. 1 and 2 as "Master Plan Facilities to be Constructed by Developer", will provide permanent drainage service to the portion of the project located in Drainage Area "BE". The portion of the project located in Drainage Area "BD" will not have permanent service. The District recommends temporary facilities until permanent service is available in Drainage Area "BD". Drainage Areas "BF" and "PP" should not be affected provided the project maintains the conformity to the Master Plan. The City of Fresno and the District's Operations Department will need to coordinate the project and identify the District manhole locations for protection and adjustment to the new surface elevation. Please contact the District's Operations Engineer, Peter Sanchez, prior to commencing the projects construction.

Should the City desire the District to fund the Master Plan facilities the City shall give a minimum of twelve (12) months prior notice of construction of the project. If funding is unavailable, the City shall construct the Master Plan facilities and the District will provide reimbursement from future drainage fees paid within the corresponding Drainage Area.



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The District will need to review and approve the project's final improvement plans for all proposed development (i.e. grading, street improvement and storm drain) for conformance to the Master Plan prior to implementation.

The proposed project, with the exception of the area around the Central Canal north of Church Avenue which is designated FEMA Flood Zone "AE", does not appear to be located within a flood prone area according to the latest Flood Insurance Rate Maps available to the District.

Additionally, the subject site contains a portion of a canal or pipeline that is used to manage recharge, storm water, and/or flood flows. The existing capacity must be preserved as part of project development. Additionally, project development may not interfere with the ability to operate and maintain the canal or pipeline.

Construction activity, including grading, clearing, grubbing, filling, excavation, development or redevelopment of land that results in a disturbance of one (1) acre or more of the total land area, or less if part of a larger plan of development or sale, must secure a storm water discharge permit in compliance with the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System regulations (CFR Parts 122-124, Nov. 1990). The permit must be secured by filing a Notice of Intent for the State General Permit for Construction Activity with the State Water Resources Control Board. The notice must be filed prior to the start of construction. Copies of the State General Permit and Notice of Intent are available at the District.

Thank you for the opportunity to comment. Please keep our office informed on the development of this project. Should you have any further questions or need additional information; please contact the District at (559) 456-3292.

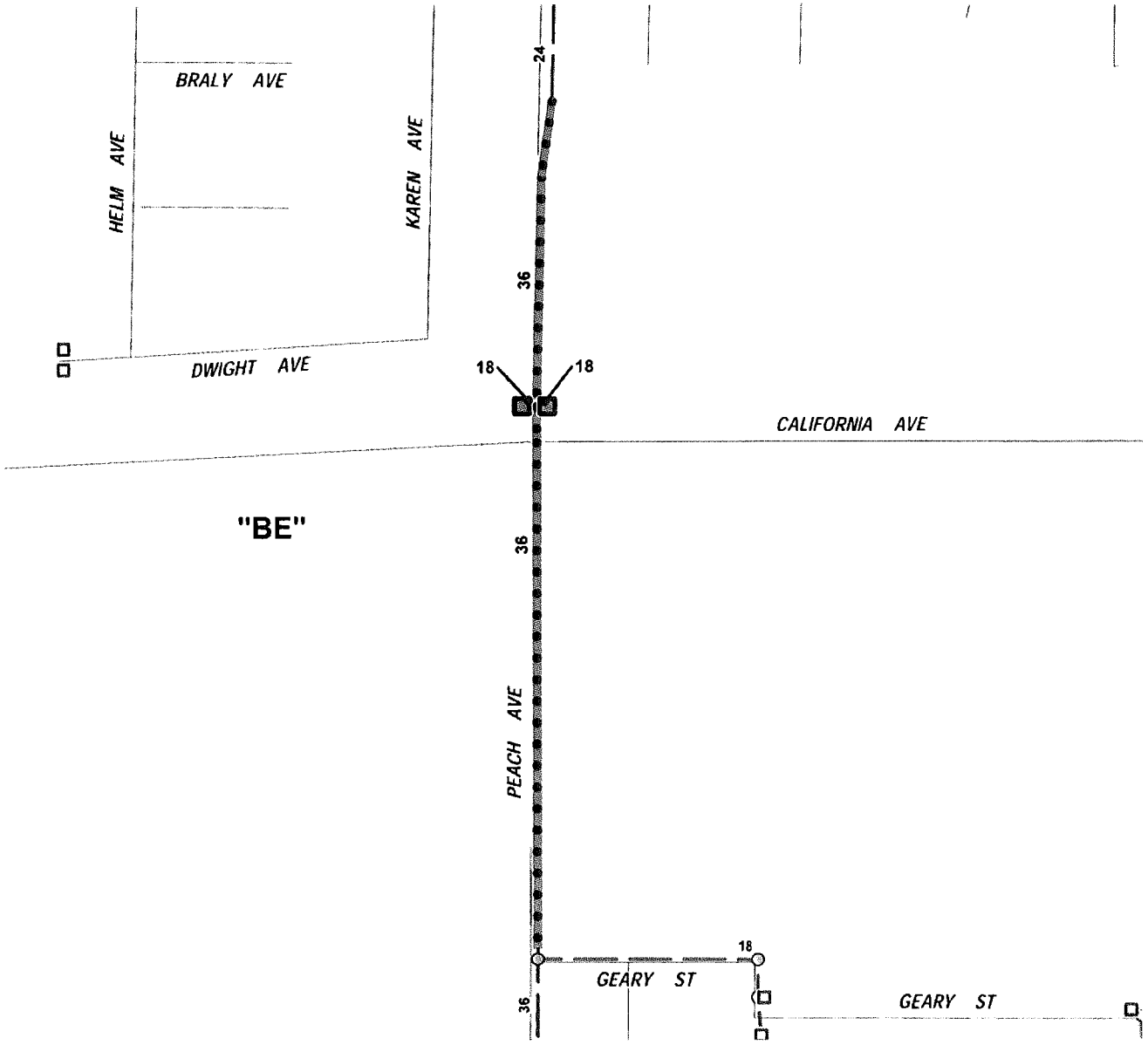
Very Truly Yours,

Gary Chapman

Gary Chapman
Engineering Technician III

GC/lrl

NOTE:
THIS MAP IS SCHEMATIC
DISTANCES ARE APPROXIMATE.




## LEGEND

Creditable Facilities (Master Plan Facilities To Be Constructed By Developer)-Pipeline (Size Shown) & Inlet.

Existing Master Plan Facilities

1 " = 300 '

**EA-2013-013**

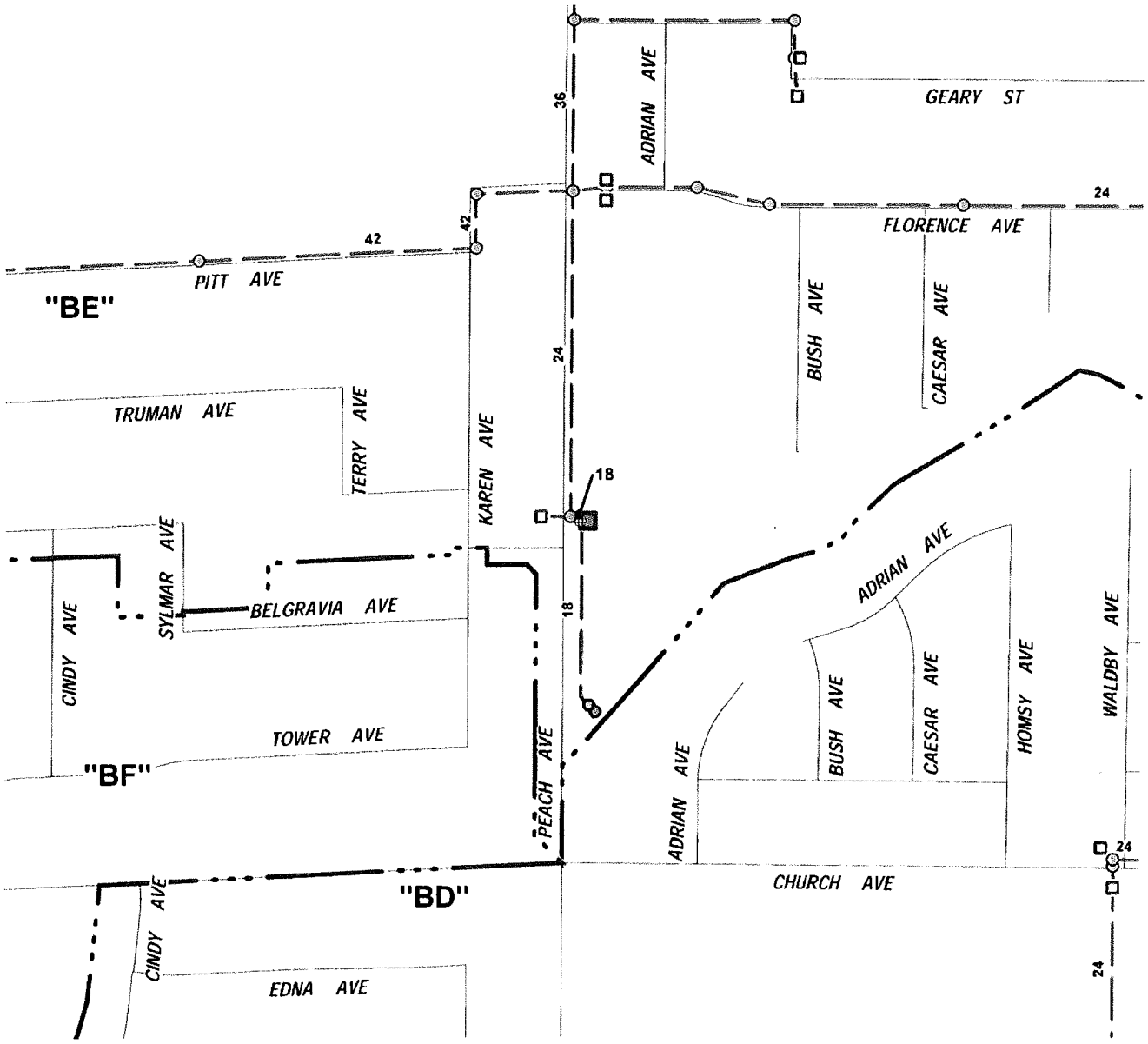
**DRAINAGE AREA "BE"**

**EXHIBIT NO. 1**

**FRESNO METROPOLITAN FLOOD CONTROL DISTRICT**

Prepared by: wadet
Date: 8/21/2013
Path: K:\Autocad\DWGS\0EXHIBIT\ENVIRON\EA-2013-013.mxd

NOTE:
THIS MAP IS SCHEMATIC
DISTANCES ARE APPROXIMATE.




## LEGEND

Creditable Facilities (Master Plan Facilities To Be Constructed By Developer)-Pipeline (Size Shown) & Inlet.

Existing Master Plan Facilities

Existing Temporary Inlet

1 " = 300 '

**EA-2013-013**

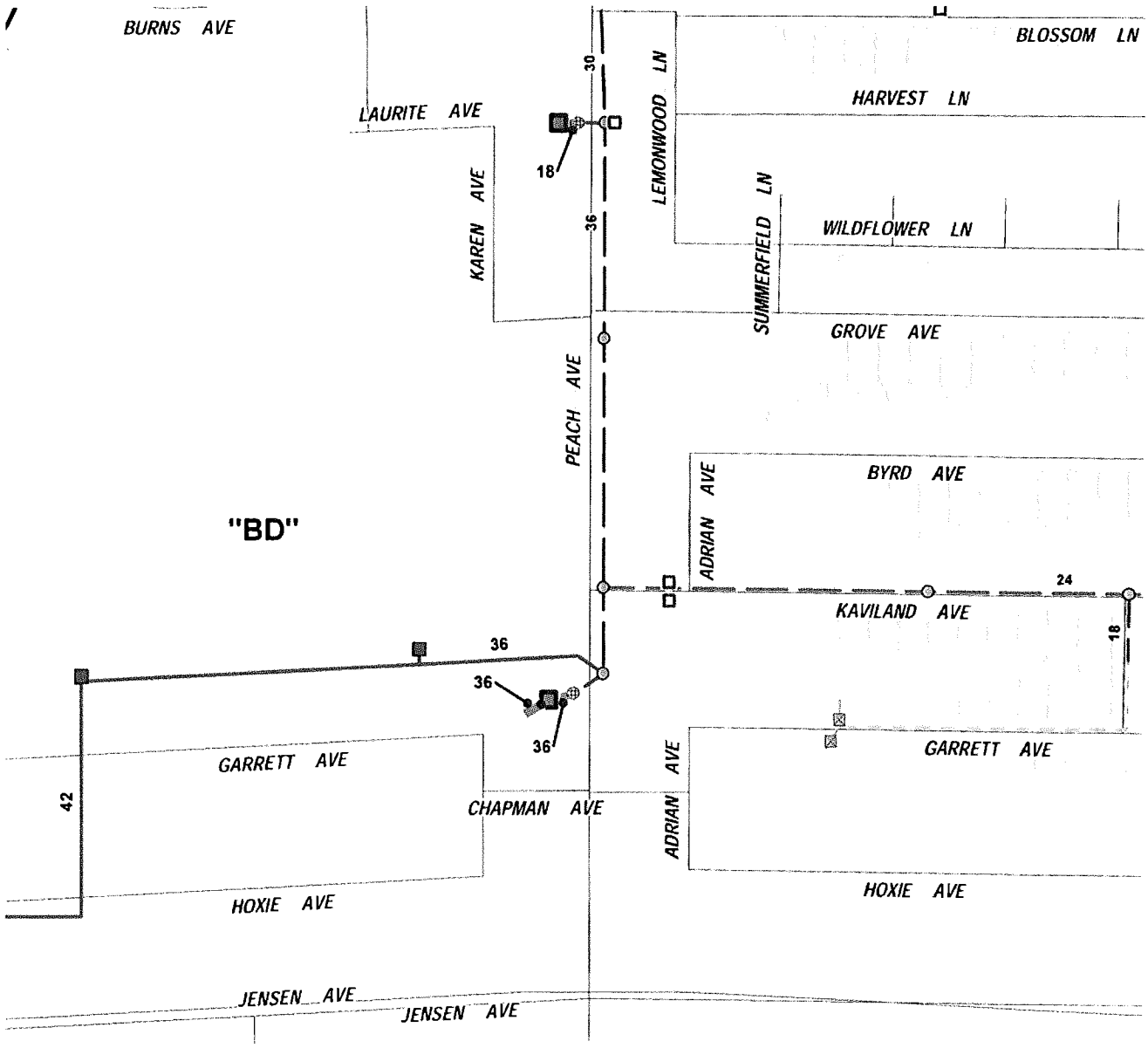
**DRAINAGE AREA "BE"**

**EXHIBIT NO. 2**

**FRESNO METROPOLITAN FLOOD CONTROL DISTRICT**

Prepared by: wadet
Date: 8/21/2013
Path: K:\Autocad\DWGS\0EXHIBIT\ENVIRON\EA-2013-013(2).mxd

NOTE:
THIS MAP IS SCHEMATIC
DISTANCES ARE APPROXIMATE.




## LEGEND

- Creditable Facilities (Master Plan Facilities To Be Constructed By Developer)-Pipeline (Size Shown) & Inlet.
- Existing Master Plan Facilities
- Future Master Plan Facilities
- Existing Temporary Inlet

1 " = 300 '

**EA-2013-013**

**DRAINAGE AREA "BD"**

**EXHIBIT NO. 3**

**FRESNO METROPOLITAN FLOOD CONTROL DISTRICT**

Prepared by: wadet
Date: 8/21/2013
Path: K:\Autocad\DWGS\0EXHIBIT\ENVIRON\EA-2013-013(3).mxd