Iron Ridge Development

Air Quality & Greenhouse Gas Impact Assessment
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Executive Summary

This Air Quality and Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts related to the Iron Ridge Development (Project). The Project site is generally located along Shirk Road (Road 92) between Hurley Avenue and Goshen Avenue, two-thirds of a mile north of State Route (198). Regional access to the site is provided by SR 198. The Project seeks to develop approximately 243 single family dwelling units on roughly 50 acres of land. In the current set-up the project is partially within the City of Visalia and partially within Tulare County. However, the project entails an annexation entitlement to bring the entire project site into the City Jurisdiction.

The City of Visalia is located in the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Visalia is classified as Mediterranean, with moist cool winters and dry warm summers.

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs.

IMPACTS

Short-Term (Construction) Emissions

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Table E-1 shows the estimated construction emissions that would be generated from the Project. Results of the analysis show that emissions generated from the construction phase of the Project will not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) emission thresholds.

Table E-1
Project Construction Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Construction Emissions	3.10	3.76	4.22	0.01	1.13	0.57	569.46
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod, VRPA 2021

Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

1. Localized Mobile Source Emissions – Ozone/Particulate Matter

Operational emissions associated with the Project are shown in Table E-2. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants considering adherence to all applicable SJVAPCD Rules. Compliance with Rule 9510 will reduce Project Operational NOx Emissions by an additional 33.3% and PM10 emissions by 50% according to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015.

Table E-2
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	11.54	2.05	3.25	0.03	2.44	0.70	2885.84
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod, VRPA 2021

2. Toxic Air Contaminants (TAC)

An evaluation of nearby land uses shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

3. Odors

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin.

4. Naturally Occurring Asbestos (NOA)

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also

found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

5. Greenhouse Gas Emissions

The California Air Resources Board (CARB), in consultation with Metropolitan Planning Organization (MPOs), has provided each affected region with reduction targets for Greenhouse Gas (GHGs) emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Tulare County Association of Government (TCAG) region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005. TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Tulare County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions.
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the

SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is roughly 70% less than the threshold identified by the SCAQMD.

Table E-3
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	2,905 MT/yr

Source: CalEEMod, VRPA 2021

CEQA ENVIRONMENTAL CHECKLIST

In accordance with the California Environmental Quality Act (CEQA), the effects of the Project were evaluated to determine if they will result in Project-Specific significant adverse impacts on the environment that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an impact with respect to air quality and greenhouse gas emissions are summarized below.

1. Air Quality

The criteria used to determine the significance of an air quality impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, air quality impacts resulting from the Project are considered significant if the Project would:

- ✓ Conflict with or obstruct implementation of the applicable air quality plan?

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the growth projections and land use information in adopted general plans to estimate future average

daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014. The Project would be consistent with the General Plan upon preparation and approval of a general plan amendment in accordance with General Plan Policy LU-P-55, which addresses development of project sites that are located within the Urban Boundary and are currently zoned Low density Residential. Therefore, the Project would be consistent with the population growth and VMT applied in the plan and the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

- ✓ 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?

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Visalia and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed above in Section 3.2 and 3.3, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

- ✓ Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 3,000 feet from the SR 198 freeway. In addition, the Project is not located within the specified boundary for the source category identified in Table 4. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants as shown in Table E-1. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table E-2 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

- ✓ Result in other emissions such as those leading to odors adversely affecting a substantial number of people?

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. As shown in Table 5, Chemical Manufacturing facilities are known to generate odorous emissions and include a screening distance of one (1) mile. There is a Hydrite Chemical Company facility (SJVAPCD Facility ID 8199) located a third of a mile to the north of the Project site which falls within the 1-mile screening distance set by the SJVAPCD. It should be noted that the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule.

While the Hydrite Chemical facility is located within the 1-mile screening distance as depicted in Table 5, it should be noted that there are other residential and school land uses in the vicinity of the Project that also fall within the 1-mile boundary. In addition, prevailing wind patterns in the area indicate that wind blows primarily from the northwest and southwest depending upon the time of year (see appendices). As a result, potential odors from the Hydrite Chemical facility would have minimal impact on the Project given the location of the facility with respect to the Project. Lastly, the lack of odor complaints logged for the Hydrite Chemical facility for the previous three (3) years indicate that odorous emissions from the facility would have a significant impact on the Project.

Based on the assessment above, the Project will not generate potential odorous emissions or attract receivers and other sensitive receptors near existing odor sources. Therefore, no mitigation is needed.

2. *Greenhouse Gas Emissions*

The criteria used to determine the significance of a greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, greenhouse gas impacts resulting from the Project are considered significant if the Project would:

- ✓ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in

which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;

ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and

iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is roughly 70% less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

✓ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030

and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014.

The Project would be consistent with the City of Visalia General Plan upon preparation and approval of a general plan amendment in accordance with General Plan Policy LU-P-55 and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table E-3) are less than the threshold identified by the SCAQMD (see the discussion above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

- Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

    - The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

- Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

- The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

1.0 Introduction

1.1 Description of the Region/Project

This Air Quality and Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts related to the Iron Ridge Development (Project). The Project site is generally located along Shirk Road (Road 92) between Hurley Avenue and Goshen Avenue, two-thirds of a mile north of State Route (198). Regional access to the site is provided by SR 198. In the current set-up the project is partially within the City of Visalia and partially within Tulare County. However, the project entails an annexation entitlement to bring the entire project site into the City Jurisdiction. The Project seeks to develop approximately 243 single family dwelling units on roughly 50 acres of land. Figure 1 shows the site's regional context while Figure 2 shows the Project location within the City of Visalia.

The City of Visalia is located in the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Visalia is classified as Mediterranean, with moist cool winters and dry warm summers.

1.2 Regulatory

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the City of Visalia are discussed below along with their individual responsibilities.

1.2.1 *Federal Agencies*

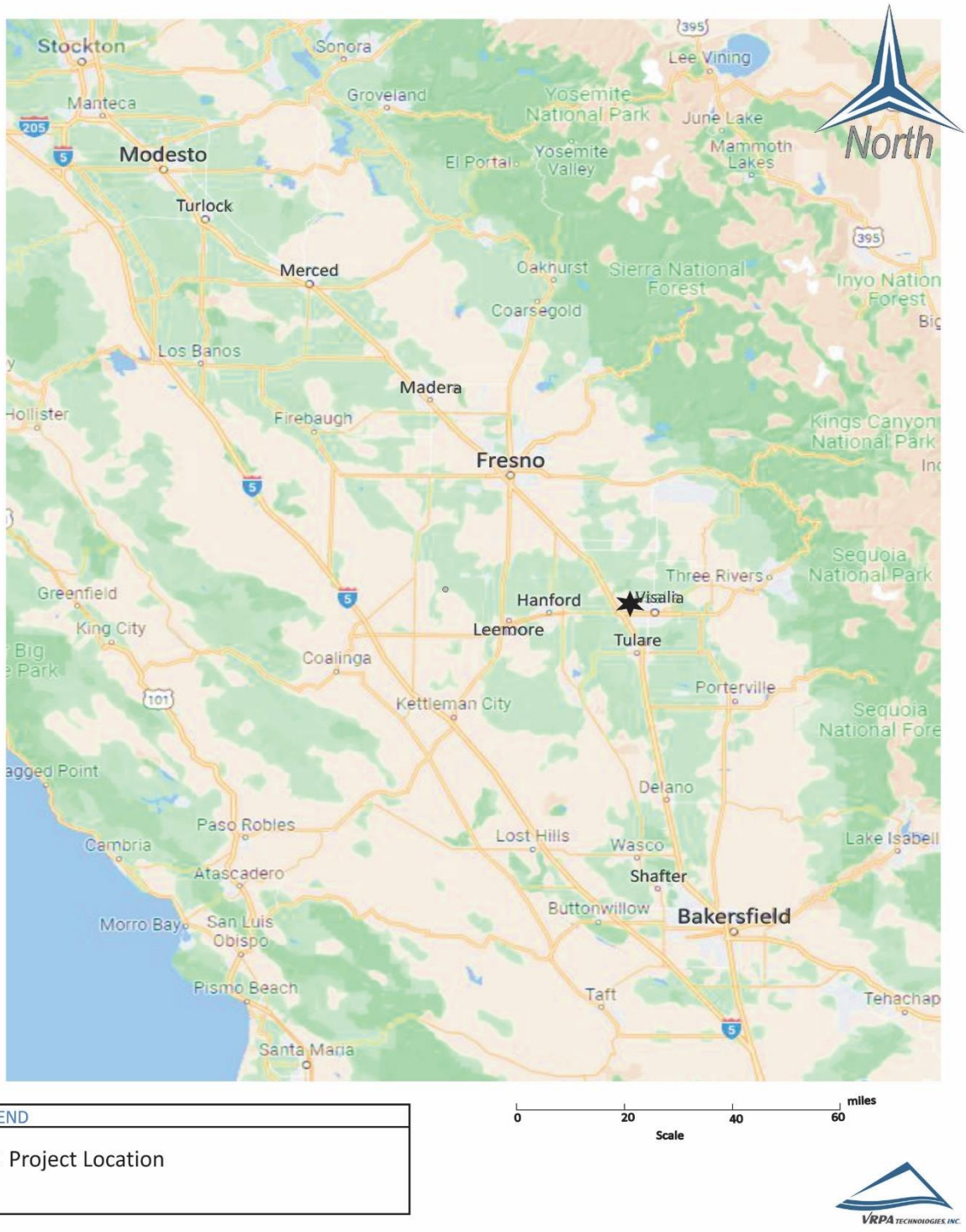
✓ **U.S. Environmental Protection Agency (EPA)**

The Federal Clean Air Bill first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other Clean Air Act (CAA) Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments.

The CAA and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

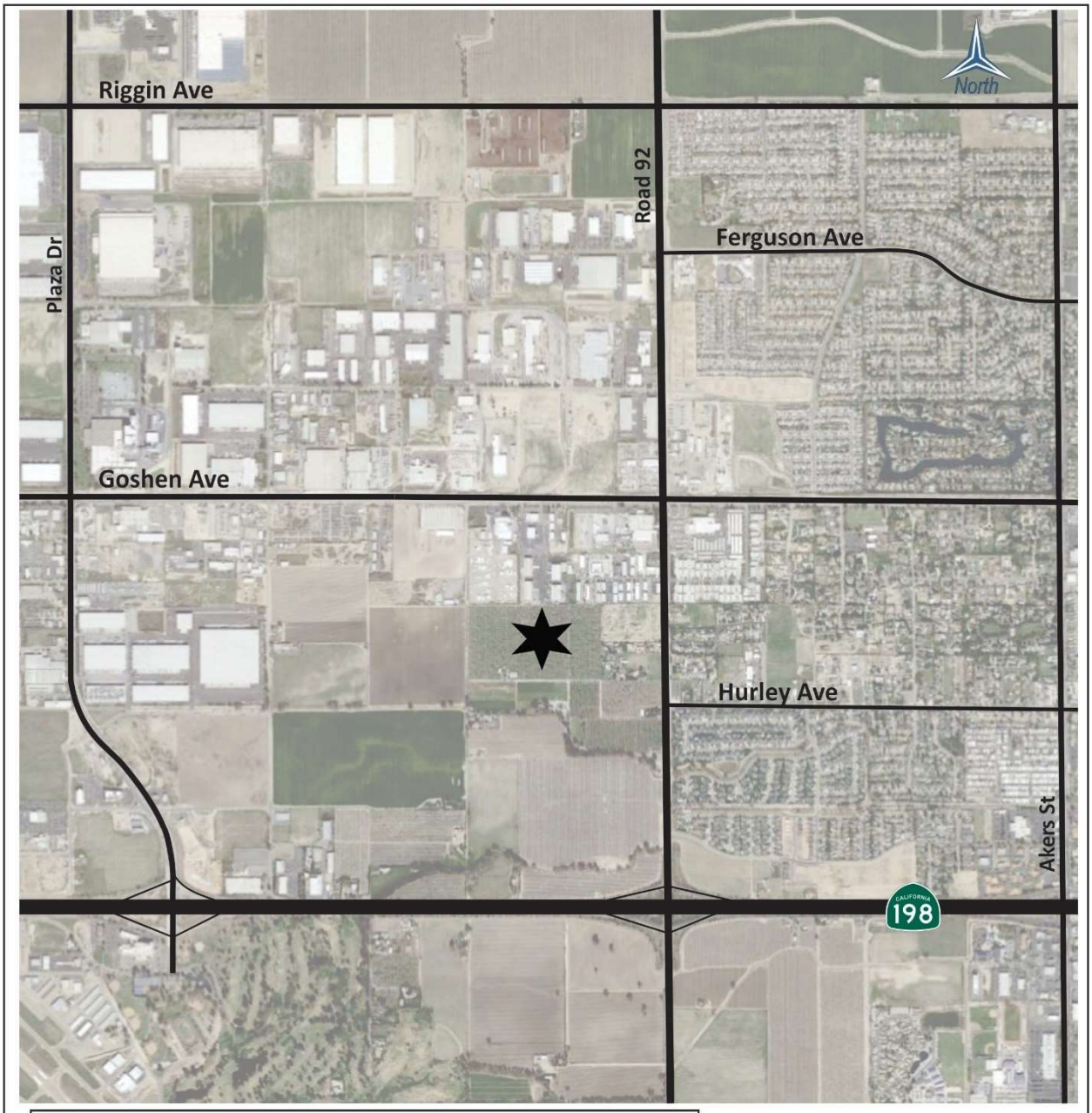
Iron Ridge Development
Regional Location

Figure 1



Iron Ridge Development
Project Location

Figure 2



CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). However, because the State Implementation Plan (SIP) for particulate matter 10 microns or less in diameter (PM10), particulate matter 2.5 microns or less in diameter (PM2.5), and Ozone address attainment of both the State and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is provided on the pages following this federal conformity discussion.

The EPA approved San Joaquin Valley reclassification of the ozone (8-hour) designation to extreme nonattainment in the Federal Register on May 5, 2010, even though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard. In accordance with the CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. In the Federal Register on October 26, 2015, the EPA revised the primary and secondary standard to 0.070 parts per million (ppm) to provide increased public health protection against health effects associated with long- and short-term exposures.

1.2.2 *Federal Regulations*

✓ **State Implementation Plan (SIP)/ Air Quality Management Plans (AQMPs)**

To ensure compliance with the NAAQS, EPA requires states to adopt SIP aimed at improving air quality in areas of nonattainment or a Maintenance Plan aimed at maintaining air quality in areas that have attained a given standard. New and previously submitted plans, programs, district rules, state regulations, and federal controls are included in the SIPs. Amendments made in 1990 to the federal CAA established deadlines for attainment based on an area's current air pollution levels. States must enact additional regulatory programs for nonattainment's areas in order to adhere with the CAA Section 172. In California, the SIPs must adhere to both the NAAQS and the California Ambient Air Quality Standards (CAAQS).

To ensure that State and Federal air quality regulations are being met, Air Quality Management Plans (AQMPs) are required. AQMPs present scientific information and use analytical tools to identify a pathway towards attainment of NAAQS and CAAQS. The San Joaquin Valley Air Pollution Control District (SJVAPCD) develops the AQMPs for the region where the Tulare County Association of Governments (TCAG) operates. The regional air districts begin the SIP process by submitting their AQMPs to the California Air Resources Board (CARB). CARB is responsible for revising the SIP and submitting it to EPA for approval. EPA then acts on the SIP in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations Title 40, Chapter 1, Part 52, Subpart 7, Section

52.220.

✓ **Transportation Control Measures**

One particular aspect of the SIP development process is the assessment of available transportation control measures (TCMs) as a part of making progress towards clean air goals. TCMs are defined in Section 108(f)(1) of the CAA and are strategies designed to reduce vehicle miles traveled, vehicle idling, and associated air pollution. These goals are generally achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

✓ **Energy Policy Act of 1992 (EPAct)**

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of alternative fueled vehicles (AFVs). States are also required by the act to consider a variety of incentive programs to help promote AFVs.

1.2.3 *State Agencies*

✓ **California Air Resources Board (CARB)**

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management District's (AQMDs) and approved by CARB.

States may establish their own standards, provided the State standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to California Health and Safety Code (CH&SC) [§39606(b)] and its

predecessor statutes.

The CH&SC [§39608] requires CARB to "identify" and "classify" each air basin in the State on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs. Designations and classifications specific to the SJVAB can be found in the next section of this document. Areas in the State were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA mandates.

Other CARB duties include monitoring air quality. CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations (called the State and Local Air Monitoring [SLAMS] network), which monitor the present pollutant levels in the ambient air.

Tulare County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3. In addition to Tulare County, the SJVAB includes Fresno, Kern, Kings, Tulare, Merced, San Joaquin, and Stanislaus Counties. Federal and State standards for criteria pollutants are provided in Table 1.

1.2.4 *State Regulations*

✓ **CARB Mobile-Source Regulation**

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARB's motor vehicle standards specify the allowable grams of pollutant per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved.

✓ **California Clean Air Act**

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the Federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the CH&SC [§39606(b)], which are similar to the federal standards. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to accomplish a five percent (5%) annual reduction in emissions documenting progress toward the State ambient air quality standards.

Iron Ridge Development
San Joaquin Valley Air Basin

Figure 3

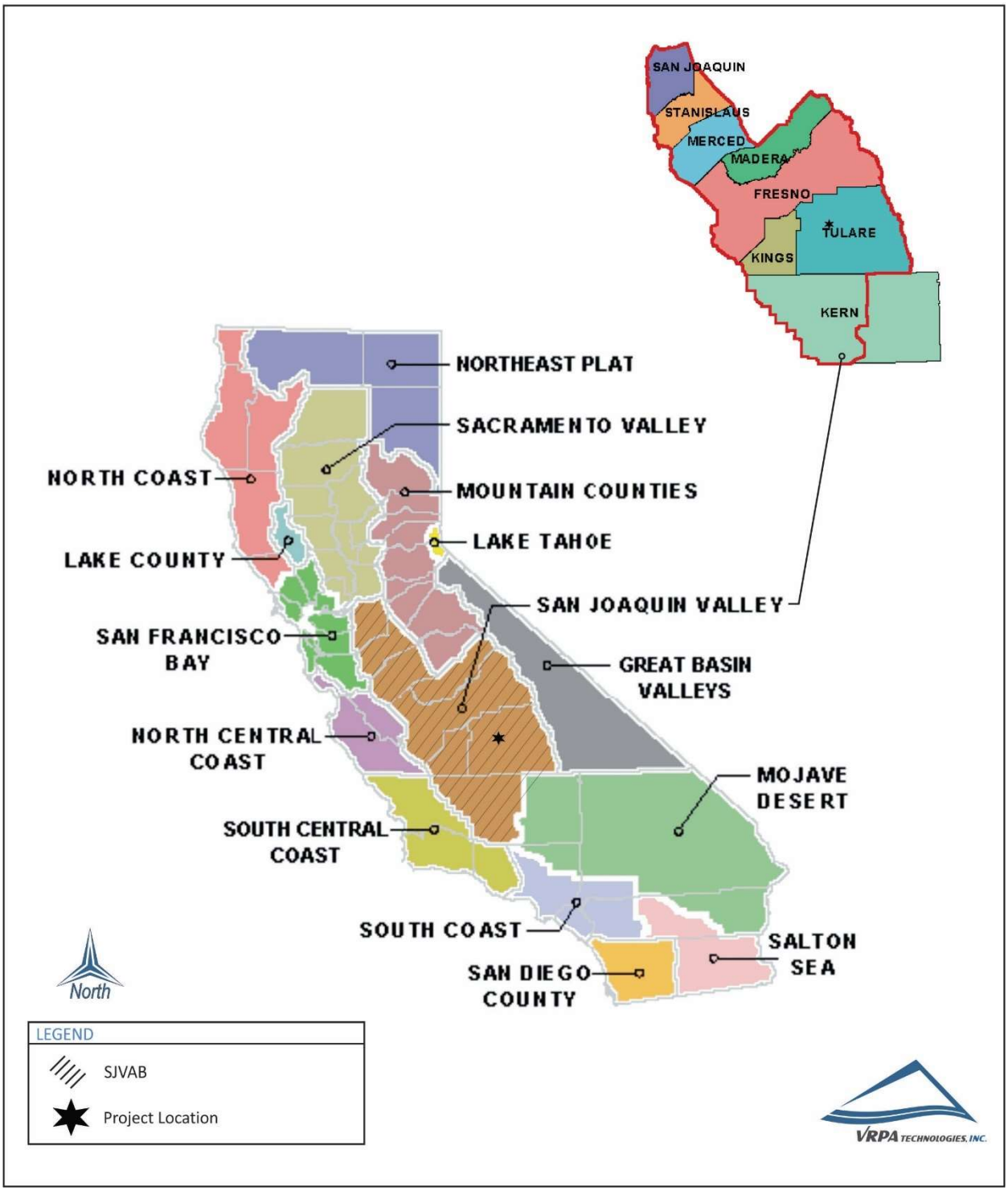


Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter (PM2.5) [9]	24 Hour	--	--	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		--	--	
Nitrogen Dioxide (NO_2) [10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for cetain areas) [11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for cetain areas) [11]	--	
Lead [12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m^3 (for certain areas) [11]	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m^3		
Visibility Reducing Particles [14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

Footnotes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: CARB, 2021

✓ **Tanner Air Toxics Act**

California regulates Toxic Air Contaminants (TACs) 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 CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of Hazardous Air Pollutants (HAPs) as TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

These rules and standards provide for:

- More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
- Zero-emission bus demonstration and purchase requirements applicable to transit agencies
- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

✓ **AB 1493 (Pavley)**

AB 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 [Association of Environmental Professionals (AEP) 2007)]. In 2005, the CARB requested a waiver from U.S. EPA to enforce the regulation, as required under the CAA. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the Federal Register. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30,

2009, EPA granted a waiver of CAA preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. December 31, 2020 is the deadline for achieving the 2020 GHG emissions cap. To effectively implement the cap, AB 32 directs CARB 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 CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions.

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan adopted in December of 2008. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

✓ **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region 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. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

✓ **Executive Order B-30-15**

Executive Order B-30-15, which was signed by Governor Brown in 2016, establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

✓ **California Global Warming Solutions Act of 2006: emissions limit, or SB 32**

SB 32 is a California Senate bill expanding upon AB 32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley and the principal co-author is Assembly member Eduardo Garcia. SB 32 was signed into law on September 8, 2016, by Governor Brown. SB 32 sets into law the mandated reduction target in GHG emissions as written into Executive Order B-30-15. SB 32 requires that there be a reduction in GHG emissions to 40% below the 1990 levels by 2030. Greenhouse gas emissions include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The provisions of SB 32 were added to Section 38566 of the Health and Safety Code subsequent to the bill's approval. The bill went into effect January 1, 2017. SB 32 builds onto Assembly Bill (AB) 32 written by Senator Fran Pavley and Assembly Speaker Fabian Nunez passed into law on September 27, 2006. AB 32 required California to reduce greenhouse gas emissions to 1990 levels by 2020 and SB 32 continues that timeline to reach the targets set in Executive Order B-30-15. SB 32 provides another intermediate target between the 2020 and 2050 targets set in Executive Order S-3-05.

1.2.5 *Regional Agencies*

✓ **San Joaquin Valley Air Pollution Control District**

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Tulare County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits

for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the following State Implementation Plans to address ozone, PM-10 and PM2.5 that currently apply to the Visalia non-attainment area:

- The 2016 Ozone Plan (2008 standard) was adopted by SJVAPCD on June 16, 2016 and subsequently adopted by ARB on July 21, 2016.
- The 2013 1-Hour Ozone Plan (revoked 1997 standard) was adopted by the SJVAPCD on September 19, 2013. EPA withdrew its approval of the plan due to litigation. The District plans to submit a "redesignation substitute" to EPA to maintain its attainment status for this revoked ozone standard.
- The 2007 PM-10 Maintenance Plan (as revised in 2015) was approved by EPA on July 8, 2016 (effective September 30, 2016).
- The 2012 PM2.5 Plan (as revised in 2015) was approved by EPA on August 16, 2016 (effective September 30, 2016).

The SJVAPCD Plans identified above represent SJVAPCD's plan to achieve both state and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories.

The SJVAPCD also prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI), dated March 19, 2015. The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project

emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

1.2.6 *Regional Regulations*

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to the Project.

✓ **Regulation VIII – Fugitive PM10 Prohibitions**

Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc. The proposed Project will be required to comply with this regulation. Regulation VIII control measures are provided below:

1. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.*
2. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
3. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.*
4. *When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.*
5. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
6. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
7. *Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.*

✓ **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities**

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The

proposed Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

✓ **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations**

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

✓ **Rule 9510 – Indirect Source Review (ISR)**

The purpose of this rule is to fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans, achieve emission reductions from construction activities, and to provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures. The rule is expected to reduce nitrogen oxides and particulates throughout the San Joaquin Valley by more than 10 tons per day. Rule 9510 requires single-family development projects larger than 50 residential units to reduce smog-forming and particulate emissions generated by their projects. The Project includes the development of approximately 243 single family dwelling units and will be required to comply with this rule.

1.2.7 *Local Plans*

✓ **City of Visalia General Plan**

California State Law requires every city and county to adopt a comprehensive General Plan to guide its future development. The General Plan essentially serves as a "constitution for development"— the document that serves as the foundation for all land use decisions. The City of Visalia General Plan includes various elements, including air quality and greenhouse gases, that address local concerns and provides goals and policies to achieve its development goals.

✓ **City of Visalia Climate Action Plan[1]**

The City of Visalia Climate Action Plan (CAP) was created as one of the first key steps to guiding the development and enhancement of actions designed to reduce Visalia's GHG emissions. The CAP represents the results of a GHG emissions inventory effort which serves as a starting point for the development of a comprehensive municipal and community strategy for addressing GHG emission reduction goals.

The major long-term objectives of the City of Visalia's CAP for the City government and the community as a whole include the following:

1 City of Visalia Climate Action Plan, December 2013

- Reduce net GHG emissions from both municipal operations and community activities;
- Promote cleaner and healthier air to breathe;
- Help the City and its residents save on energy costs;
- Reduce vulnerability to changes in energy availability and price; and
- Increase public awareness of climate change issues.

The City of Visalia selected the years 2020 and 2030 to establish mitigation targets for the CAP. A reduction of 15% below the 2005 baseline year level is the target for 2020. A reduction of 30% below the 2005 baseline year level is the target for 2030. The City of Visalia established two mitigation milestones to correlate with the planning horizon of the 2030 General Plan Update, and to ensure that the City is working towards the State's goal of an 80% reduction below baseline by 2050.

The City of Visalia has instituted various actions in an effort to meet the year 2020 and 2030 mitigation targets. The measures identified to achieve mitigation targets are organized into five categories: Energy Systems, Transportation, Water and Resource Conservation, Transportation / Land Use, and Waste and Resource Conservation. Included in the Transportation category is a measure regarding the expansion of bicycle paths. The Project includes the development of a linear park and buffer (3.82 acres) along the northern edge of the Project which also includes a trail with exercise stations. In addition, the western and eastern edges of the Project will include a 10-foot landscape easement. These improvements coincide with the goals of the CAP.

2.0 Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Tulare County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter. Air quality can be directly affected by the type and density of land use change and population growth in urban and rural areas.

2.1 Geographical Location

The SJVAB is comprised of eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

2.2 Topographic Conditions

Tulare County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided in paragraph below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

2.3 Climate Conditions

Tulare County is located in one of the most polluted air basins in the country. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Tulare County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Tulare County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble so precipitation and fog tends to "reduce" CO concentrations in the atmosphere. PM10 is somewhat "washed" from the atmosphere with precipitation. Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast. In the winter, this high- pressure system moves southward, allowing Pacific storms to move through the San Joaquin Valley. These storms bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the valley floor, however, there is some down slope flow from the Coast Ranges and the resultant evaporation of moisture from associated warming results in a minimum of precipitation. Nevertheless, the majority of the precipitation falling in the San Joaquin Valley is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. It is usually associated with an influx of moisture into the San Joaquin Valley through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere. Although the hourly rates of precipitation from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the San Joaquin Valley floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year, Fresno in the center, receives about 10 inches per year, and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the state while the southern part of the state remains protected by the Pacific High. Precipitation in the San Joaquin Valley Air Basin (SJVAB) is confined primarily to the winter months with some also occurring in late summer and fall. Average annual rainfall for the entire San Joaquin Valley is approximately 5 to 16 inches. Snowstorms, hailstorms, and ice storms occur infrequently in the San Joaquin Valley and severe occurrences of any of these are very rare.

The winds and unstable air conditions experienced during the passage of storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure

and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the San Joaquin Valley's famous Tule Fogs. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog, is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM10. Ozone levels are low during these periods because of the lack of sunlight to drive the photochemical reaction. Maximum CO concentrations tend to occur on clear, cold nights when a strong surface inversion is present and large numbers of fireplaces are in use. A secondary peak in CO concentrations occurs during morning commute hours when a large number of motorists are on the road and the surface inversion has not yet broken.

The water droplets in fog, however, can act as a sink for CO and nitrogen oxides (NOx), lowering pollutant concentrations. At the same time, fog could help in the formation of secondary particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor of winter season violations of the PM10 and PM2.5 standards.

2.4 Anthropogenic (Man-made) Sources

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by anthropogenic or man-made sources. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, agriculture, and other socioeconomic activities. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contributed 34 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 20 percent in 2012 according to emission projections from the CARB. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NOx) and Reactive Organic Gases (ROG). Mobile sources contribute 84 percent of all NOx emitted from anthropogenic sources based on data provided in Appendix B of the Air District's 2016 Ozone

Plan. In addition, mobile sources contribute 26 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Tulare County are:

1. The sink effect, climatic subsidence and temperature inversions and low wind speeds
2. Automobile and truck travel
3. Increases in mobile and stationary pollutants generated by local urban growth

Automobiles, trucks, buses and other vehicles using hydrocarbon (HC) fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Tulare County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Tulare County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of PM10 emissions in the San Joaquin Valley are farming activities (22%) and road dust, both paved and unpaved (35%) in 2020 according to emission projections from the CARB. Fugitive windblown dust from “open” fields contributed 14 percent of the PM10.

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). In addition to these primary sources of air pollution, urban areas upwind from Tulare County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Tulare County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

2.4.1 *Motor Vehicles*

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

2.4.2 *Agricultural and Other Miscellaneous Activities*

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters, animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Tulare County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities.

2.4.3 *Industrial Plants*

Industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Tulare County consist of agricultural production and processing operations, wine production, and marketing operations.

2.5 San Joaquin Valley Air Basin Monitoring

SJVAPCD and the CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM2.5, and PM10. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. The closest monitoring station to the Project is located at Visalia's N Church Street Monitoring Station. The station monitors particulates, ozone, carbon monoxide, and nitrogen dioxide. Monitoring data for the past three years is summarized in Table 2.

Table 3 identifies the Tulare County's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM. In accordance with the FCAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The FCAA contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification.

On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550). The (federal) 1-hour ozone standard was revoked on June 6, 2005. However, many of the requirements in the 1-hour attainment plan (SIP) continue to apply to the SJVAB. The current ozone plan is the (federal) 8-hour ozone plan adopted in 2007. The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme" effective June 4, 2010.

Table 2
Maximum Pollutant Levels at Visalia's N Church Street Monitoring Station

Pollutant	Time Averaging	2018 Maximums	2019 Maximums	2020 Maximums	Standards	
					National	State
Ozone (O_3)	1 hour	0.112 ppm	0.093 ppm	0.127 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.094 ppm	0.082 ppm	0.102 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO_2)	1 hour	69.2 ppb	70.7 ppb	53.4 ppb	100 ppb	0.18 ppm
Nitrogen Dioxide (NO_2)	Annual Average	10.0 ppb	9.0 ppb	9.0 ppb	0.053 ppm	0.030 ppm
Particulates (PM_{10})	24 hour	153.4 µg/m^3	411.1 µg/m^3	317.4 µg/m3	150 µg/m^3	50 µg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	52.5 µg/m^3	45.7 µg/m^3	59.4 µg/m^3	-	20 µg/m^3
Particulates ($PM_{2.5}$)	24 hour	86.8 µg/m^3	47.2 µg/m^3	127.1 µg/m^3	35 µg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	17.3 µg/m^3	12.9 µg/m^3	19.6 µg/m^3	12 µg/m^3	12 µg/m^3

Source: California Air Resources Board (ADAM) Air Pollution Summaries, 2021

Table 3
Tulare County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - 1 Hour	Revoked in 2005	Nonattainment/Severe
Ozone - 8 Hour	Nonattainment/Extreme [a]	No State Standard
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: CARB Website, 2021

a. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

2.6 Air Quality Standards

The FCAA, first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 568), which set forth a program for achieving more stringent California Ambient Air Quality Standards. The CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the FCAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM10 Air Quality Standards is not currently required.

The EPA uses six "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called the NAAQS.

The SJVAPCD operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which State or federal agencies have established ambient air quality standards. Descriptions of nine pollutants of importance in Tulare County follow.

2.6.1 *Ozone (1-hour and 8-hour)*

The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NOx, and sunlight. ROG and NOx are emitted from various sources throughout Tulare County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NOx and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

- ✓ ***Health Effects***

  While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

  People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children

inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The CARB found ozone standards in Tulare County nonattainment of Federal and State standards.

2.6.2 *Suspended PM (PM10 and PM2.5)*

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM10 refers to particles less than or equal to 10 microns in aerodynamic diameter. PM2.5 refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM10. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM10 in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM10 and PM2.5 can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM10 and PM2.5. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO2) and NOx in the atmosphere to create sulfates (SO4) and nitrates (NO3). Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The District's 2008 PM2.5 Plan built upon the aggressive emission reduction strategy adopted in

the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for PM2.5. The District's 2012 PM2.5 Plan provides multiple control strategies to reduce emissions of PM2.5 and other pollutants that form PM2.5. The plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

✓ ***Health Effects***

PM10 and PM2.5 particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM10 and PM2.5 can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM10. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM10 exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM10 can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The CARB found PM10 standards in Tulare County in attainment of Federal standards and nonattainment for State standards. The CARB found PM2.5 standards in Tulare County nonattainment of Federal and State standards.

2.6.3 *Carbon Monoxide (CO)*

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall

downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

✓ ***Health Effects***

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The CARB found CO standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.4 *Nitrogen Dioxide (NO2)*

Nitrogen oxides (NOx) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NOx is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NOx is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. EPA regulates only nitrogen dioxide (NO2) as a surrogate for this family of compounds because it is the most prevalent form of NOx in the atmosphere that is generated by anthropogenic (human) activities.[2]

✓ ***Health Effects***

NOx is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone.

2 United States Environmental Protection Agency (EPA), Nitrogen Oxides (NOx). Why and How They Are Controlled, 456/F-99-006R, November 2019

See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NOx can also cause a wide range of health effects. NOx can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NOx are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NOx can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NOx can also impair visibility. NOx is a major component of acid deposition in California. NOx may affect both terrestrial and aquatic ecosystems. NOx in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NOx increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NOx contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The CARB found NO2 standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.5 *Sulfur Dioxide (SO2)*

The major source of sulfur dioxide (SO2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO2 also is a major precursor to PM2.5, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The CARB found SO2 standards in the Tulare County as unclassified/attainment for Federal standards and attainment for State standards.

2.6.6 *Lead (Pb)*

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The CARB found Lead standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.7 *Toxic Air Contaminants (TAC)*

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TAC are injurious in small quantities and are regulated despite

the absence of criteria documents. The identification, regulation and monitoring of TAC is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TAC are regulated on the basis of risk rather than specification of safe levels of contamination. The ten TAC are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Caltrans' guidance for transportation studies references the Federal Highway Administration (FHWA) memorandum titled "Interim Guidance on Air Toxic Analysis in NEPA Documents" which discusses emissions quantification of six "priority" compounds of 21 Mobile Source Air Toxics (MSAT) identified by the United States Environmental Protection Agency (USEPA). The six "priority" compounds are diesel exhaust (particulate matter and organic gases), benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein.

Some studies indicate that diesel PM poses the greatest health risk among the TAC listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to diesel PM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

Diesel PM differs from other TAC in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TAC, however, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a diesel PM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. Table 4 depicts the CARB Handbook's recommended buffer distances associated with various types of common sources.

Existing air quality concerns within Tulare County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

TABLE 4

Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads [1]	- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	- Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	- Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	- Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	- Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

1: The recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook indicating that new research has demonstrated promising strategies to reduce pollution exposure along transportation corridors.

*Notes:
• These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
• Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
• The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
• These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
• Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
• This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
• A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

Source: SJVAPCD 2021

2.6.8 *Odors*

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell 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; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to 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.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJVAB. The types of facilities that are known to produce odors are shown in Table 5 along with a reasonable distance from the source within which, the degree of odors could possibly be significant. The Project does not propose any uses that would be potential odor sources; however, the information presented in Table 5 will be used as a screening level analysis to determine if the Project would be impacted by existing odor sources in the study area. Such information is presented for informational purposes, but it is noted that the environment's effect on the Project, including exposure to potential odors, would not be an impact for CEQA purposes.

TABLE 5
Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: SJVAPCD 2021

2.6.9 *Naturally Occurring Asbestos (NOA)*

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Asbestos is commonly found in ultramafic rock and near fault zones. The amount of asbestos that is typically present in these rocks ranges from less than 1% up to approximately 25% and sometimes more. It is released from ultramafic rock when it is broken or crushed. This can happen when cars drive over unpaved roads or driveways, which are surfaced with these rocks, when land is graded for building purposes, or at quarrying operations. Asbestos is also released naturally through weathering and erosion. Once released from the rock, asbestos can become airborne and may stay in the air for long periods of time. Asbestos is hazardous and can cause lung disease and cancer dependent upon the level of exposure. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem.

The proposed Project's construction phase may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021.

2.6.10 *Greenhouse Gas Emissions*

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the

atmosphere because of human activities are:

- ✓ **Carbon Dioxide (CO2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement, asphalt paving, truck trips). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- ✓ **Methane (CH4):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- ✓ **Nitrous Oxide (N2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- ✓ **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

3.0 Air-Quality Impacts

3.1 Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Tulare County region. The SJVAPCD has established thresholds of significance for determining environmental significance. These thresholds separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project, which are recognized to be short in duration. The long-term emissions are primarily related to the activities that will occur indefinitely as a result of Project operations. Impacts will be evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction and operational emissions of criteria pollutants. The SJVAPCD has established thresholds for certain pollutants shown in Table 6.

Table 6
SJVAPCD Air Quality Thresholds of Significance

Project Type	Ozone Precursor Emissions (tons/year)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Construction Emissions	100	10	10	27	15	15
Operational Emissions (Permitted Equipment and Activities)	100	10	10	27	15	15
Operational Emissions (Non-Permitted Equipment and Activities)	100	10	10	27	15	15

Source: SJVAPCD 2021

3.1.1 *CalEEMod*

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA and NEPA documents, pre-project planning, compliance with local air quality rules and regulations, etc.

3.2 Short-Term Impacts

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NOx pollutants which are harmful to the environment.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period.

PM10 emissions can result from construction activities of the Project. The SJVAPCD has determined that compliance with Regulation VIII and other control measures will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant for most development projects. Even with implementation of District Regulation VIII and District Rule 9510, large development projects may not be able to reduce project specific construction impacts below District thresholds of significance.

Ozone precursor emissions are also an impact of construction activities and can be quantified through calculations. Numerous variables factored into estimating total construction emission include: level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported onsite or offsite. Additional exhaust emissions would be associated with the transport of workers and materials. Because the specific mix of construction equipment is not presently known for this Project, construction emissions were estimated using CalEEMod Model defaults for construction equipment.

Table 7 shows the CalEEMod estimated construction emissions that would be generated from construction of the Project. Results of the analysis show that emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds.

Table 7
Project Construction Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Construction Emissions	3.10	3.76	4.22	0.01	1.13	0.57	569.46
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod, VRPA 2021

3.3 Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

3.3.1 *Localized Operational Emissions – Ozone/Particulate Matter*

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, attainment of Federal standards for PM10 and nonattainment for State standards, and nonattainment for Federal and State standards for PM2.5. Nitrogen oxides and reactive organic gases are regulated as ozone precursors. Significance criteria have been established for criteria pollutant emissions as documented in Section 3.1. Operational emissions have been estimated for the Project using the CalEEMod Model and detailed results are included in Appendix A of this report.

Results of the CalEEMod analysis are shown in Table 8. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants considering adherence to all applicable SJVAPCD Rules. Compliance with Rule 9510 will reduce Project Operational NOx Emissions by an additional 33.3% and PM10 emissions by 50% according to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015.

Table 8
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	11.54	2.05	3.25	0.03	2.44	0.70	2885.84
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod, VRPA 2021

3.3.2 *Localized Operational Emissions*

✓ **Carbon Monoxide**

The SJVAPCD is currently in unclassified/attainment for Federal standards and attainment for State standards for CO. An analysis of localized CO concentrations is typically warranted to ensure that standards are maintained. The City of Visalia Circulation Element of the 2030 General Plan (Appendix B) was used to evaluate level of service conditions in the study area. The Circulation Element evaluated roadway segments along Shirk Road (Road 92) adjacent to the Project. As noted in the Circulation Element, Shirk Road is projected to operate at acceptable levels of service (LOS C) in the future considering planned future roadway improvements[3]. Roadways in the vicinity of the Project will continue to operate at acceptable levels of service with the addition of Project traffic (approx. 2,300 daily trips) [4]. As a result, the overall CO concentrations at roadways and intersections in the study area would be less than significant.

✓ **Toxic Air Contaminants (TAC)**

The SJVAPCD's Guidance Document, Guidance for Assessing and Mitigating Air Quality Impacts – 2015, identifies the need for projects to analyze the potential for adverse air quality impacts to sensitive receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The SJVAPCD's current thresholds of significance for TAC emissions from the operations of both permitted and non-permitted sources are presented below:

- Carcinogens: Maximally Exposed Individual risk equals or exceeds 10 in one million
- Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
- Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Carcinogenic (cancer) risk is expressed as cancer cases per one million. Noncarcinogenic (acute and chronic) hazard indices (HI) are expressed as a ratio of expected exposure levels to acceptable exposure levels.

These metrics are generally applied to the maximally exposed individual (MEI). There are separate MEIs for residential exposure (i.e., residential areas) and for worker exposure (i.e., off-site workplaces). Residential exposure is for a worst-case exposure duration of 24 hours

3 Source: TIS Prepared by VRPA Technologies November,2021.
4 Source: ITE Trip generation Manual, 10th Edition

a day, 350 days a year for 70 years. For off-site workplaces, the exposure is 8 hours a day, 245 days a year for 40 years.

Although the effects of the environment, including existing air quality conditions, on the Project are not impacts for CEQA purposes, the following analysis is presented for informational purposes and to demonstrate compliance with SJCAPCD guidance. The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 3,000 feet from the SR 198 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

✓ **Odors**

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

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Because the project is a residential development, it is not expected to generate significant odors.

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and
- Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. As shown in Table 5, Chemical Manufacturing facilities are known to generate odorous emissions and include a screening distance of one (1) mile. There is a Hydrite Chemical Company facility (SJVAPCD Facility ID 8199) located a third of a mile to the north of the Project site which falls within the 1-mile screening distance set by the SJVAPCD. It should be noted that the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule.

While the Hydrite Chemical facility is located within the 1-mile screening distance as depicted in Table 5, it should be noted that there are other residential and school land uses in the vicinity of the Project that also fall within the 1-mile boundary. In addition, prevailing wind patterns in the area indicate that wind blows primarily from the northwest and southwest depending upon the time of year (Appendix C). As a result, potential odors from the Hydrite Chemical facility would have minimal impact on the Project given the location of the facility with respect to the Project. Lastly, the lack of odor complaints logged for the Hydrite Chemical facility for the previous three (3) years indicate that odorous emissions from the facility would have a significant impact on the Project.

✓ **Naturally Occurring Asbestos (NOA)**

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

✓ **Greenhouse Gas Emissions**

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005. TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Tulare County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG threshold may be used to determine impacts. In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015)[5]. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold

5 California Public Utilities Commission (CPUC). 2015. Section 4.7, "Greenhouse Gases." Final Environmental Impact Report for the Santa Barbara County Reliability Project. May 2015. Accessed January 18, 2018.

provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is roughly 70% less than the threshold identified by the SCAQMD.

Table 9
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	2,905 MT/yr

Source: CalEEMod, VRPA 2021

3.3.3 *Indirect Source Review*

The Project is subject to the SJVAPCD's ISR program, which is also known as Rule 9510. Rule 9510 and the Administrative ISR Fee Rule (Rule 3180) are the result of state requirements outlined in the California Health and Safety Code, Section 40604 and the State Implementation Plan (SIP). The purpose of the SJVAPCD's ISR program is to reduce emissions of NOx and PM10 from new projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled.

Utilizing the ISR Fee Estimator calculator available on the SJVAPCD website, it was determined that the Project's total cost for emission reductions is $176,318.48 without implementation of emission reduction measures. The ISR Fee Estimator worksheets are included in Appendix D. The fee noted above may be reduced dependent upon the formal ISR review process.

http://www.cpuc.ca.gov/environment/info/ene/sbcrp/SBCRP_FEIR.html.

4.0 Impact Determinations and Recommended Mitigation

In accordance with CEQA, when a proposed project is consistent with a General Plan for which an EIR has been certified, the effects of that project are evaluated to determine if they will result in project-specific significant adverse impacts on the environment. Accordingly, this analysis identifies any potential environmental effects that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an air quality or greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines and the General Plan EIR. Accordingly, air quality or greenhouse gas impacts resulting from the Project are considered significant if the Project would:

Air Quality

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 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?

Greenhouse Gas Emissions

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.1 Air Quality

4.1.1 *Conflict with or obstruct implementation of the applicable air quality plan*

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the

growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014. The Project would be consistent with the General Plan upon preparation and approval of a general plan amendment in accordance with General Plan Policy LU-P-55, which addresses development of project sites that are located within the Urban Boundary and are currently zoned Low Density residential. Therefore, the Project would be consistent with the population growth and VMT applied in the plan and the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

4.1.2 *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*

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Visalia and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed above in Section 3.2 and 3.3, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

4.1.3 *Expose sensitive receptors to substantial pollutant concentrations*

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 3,000 feet from the SR 198 freeway. In addition, the Project is not located within the specified boundary for the source category identified in Table 4. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants as shown in Table 7. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table 8 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

4.1.4 *Result in other emissions such as those leading to odors adversely affecting a substantial number of people*

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- ✓ Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and

- ✓ Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. As shown in Table 5, Chemical Manufacturing facilities are known to generate odorous emissions and include a screening distance of one (1) mile. There is a Hydrite Chemical Company facility (SJVAPCD Facility ID 8199) located a third of a mile to the north of the Project site which falls within the 1-mile screening distance set by the SJVAPCD. It should be noted that the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule.

While the Hydrite Chemical facility is located within the 1-mile screening distance as depicted in Table 5, it should be noted that there are other residential and school land uses in the vicinity of the Project that also fall within the 1-mile boundary. In addition, prevailing wind patterns in the area indicate that wind blows primarily from the northwest and southwest depending upon the time of year (see appendices). As a result, potential odors from the Hydrite Chemical facility would have minimal impact on the Project given the location of the facility with respect to the Project. Lastly, the lack of odor complaints logged for the Hydrite Chemical facility for the previous three (3) years indicate that odorous emissions from the facility would have a significant impact on the Project.

Based on the assessment above, the Project will not generate potential odorous emissions or attract receivers and other sensitive receptors near existing odor sources. Therefore, no mitigation is needed.

4.2 Greenhouse Gas Emissions

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

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is roughly 70% less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

4.2.2 *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases*

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014.

The Project would be consistent with the City of Visalia General Plan upon preparation and approval of a general plan amendment in accordance with General Plan Policy LU-P-33 and LU-P-24 and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table 9) are less than the threshold identified by the SCAQMD (see the discussion for Impact 4.2.1 above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- ✓ California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.
    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.
- ✓ Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.
    - The Project is consistent with this reduction measure. Though this measure applies to

the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

✓ Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

- The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

APPENDIX A

CalEEMod Emissions Worksheets

Iron Ridge Development - Tulare County, Annual

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

Iron Ridge Development

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	243.00	Dwelling Unit	50.30	437,400.00	695

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage adjusted to Project Desciption

Construction Phase - Operational Year Estimated for 2026

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1,110.00	718.00
tblConstructionPhase	PhaseEndDate	5/31/2027	11/27/2025
tblConstructionPhase	PhaseEndDate	11/2/2026	5/1/2025
tblConstructionPhase	PhaseEndDate	2/15/2027	8/14/2025
tblConstructionPhase	PhaseStartDate	2/16/2027	8/15/2025
tblConstructionPhase	PhaseStartDate	11/3/2026	5/2/2025
tblLandUse	LotAcreage	78.90	50.30

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

tblWoodstoves	NumberCatalytic	50.30	0.00
tblWoodstoves	NumberNoncatalytic	50.30	0.00

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					
2021	0.1114	1.0864	0.7612	1.3800e-003	4.1200e-003	0.0536	0.0577	1.1000e-003	0.0497	0.0508	0.0000	120.7949	120.7949	0.0332	1.3000e-004	121.6619
2022	0.3840	3.7586	3.1025	6.4000e-003	0.9582	0.1681	1.1262	0.4189	0.1556	0.5744	0.0000	563.9849	563.9849	0.1511	5.7000e-003	569.4613
2023	0.2478	2.0500	2.4652	4.9700e-003	0.1124	0.0924	0.2048	0.0304	0.0870	0.1174	0.0000	438.5970	438.5970	0.0745	0.0122	444.0931
2024	0.2330	1.9391	2.4475	4.9700e-003	0.1133	0.0818	0.1951	0.0306	0.0769	0.1076	0.0000	438.5431	438.5431	0.0743	0.0119	443.9586
2025	4.2215	0.9674	1.4435	2.6800e-003	0.0472	0.0411	0.0883	0.0127	0.0384	0.0512	0.0000	236.2169	236.2169	0.0495	4.0600e-003	238.6628
Maximum	**4.2215**	**3.7586**	**3.1025**	**6.4000e-003**	**0.9582**	**0.1681**	**1.1262**	**0.4189**	**0.1556**	**0.5744**	**0.0000**	**563.9849**	**563.9849**	**0.1511**	**0.0122**	**569.4613**

Iron Ridge Development - Tulare County, Annual

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

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1114	1.0864	0.7612	1.3800e-003	4.1200e-003	0.0536	0.0577	1.1000e-003	0.0497	0.0508	0.0000	120.7948	120.7948	0.0332	1.3000e-004	121.6617
2022	0.3840	3.7586	3.1025	6.4000e-003	0.9582	0.1681	1.1262	0.4189	0.1556	0.5744	0.0000	563.9843	563.9843	0.1511	5.7000e-003	569.4607
2023	0.2478	2.0500	2.4652	4.9700e-003	0.1124	0.0924	0.2048	0.0304	0.0870	0.1174	0.0000	438.5967	438.5967	0.0745	0.0122	444.0928
2024	0.2330	1.9391	2.4475	4.9700e-003	0.1133	0.0818	0.1951	0.0306	0.0769	0.1076	0.0000	438.5427	438.5427	0.0743	0.0119	443.9582
2025	4.2215	0.9674	1.4435	2.6800e-003	0.0472	0.0411	0.0883	0.0127	0.0384	0.0512	0.0000	236.2166	236.2166	0.0495	4.0600e-003	238.6626
Maximum	**4.2215**	**3.7586**	**3.1025**	**6.4000e-003**	**0.9582**	**0.1681**	**1.1262**	**0.4189**	**0.1556**	**0.5744**	**0.0000**	**563.9843**	**563.9843**	**0.1511**	**0.0122**	**569.4607**

	ROG	NOx	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-28-2021**	**12-27-2021**	1.1285	1.1285
2	**12-28-2021**	**3-27-2022**	1.2185	1.2185
3	**3-28-2022**	**6-27-2022**	1.4000	1.4000
4	**6-28-2022**	**9-27-2022**	0.9273	0.9273
5	**9-28-2022**	**12-27-2022**	0.6327	0.6327
6	**12-28-2022**	**3-27-2023**	0.5724	0.5724
7	**3-28-2023**	**6-27-2023**	0.5804	0.5804

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

8	**6-28-2023**	**9-27-2023**	0.5803	0.5803
9	**9-28-2023**	**12-27-2023**	0.5762	0.5762
10	**12-28-2023**	**3-27-2024**	0.5421	0.5421
11	**3-28-2024**	**6-27-2024**	0.5443	0.5443
12	**6-28-2024**	**9-27-2024**	0.5442	0.5442
13	**9-28-2024**	**12-27-2024**	0.5405	0.5405
14	**12-28-2024**	**3-27-2025**	0.4999	0.4999
15	**3-28-2025**	**6-27-2025**	0.3879	0.3879
16	**6-28-2025**	**9-27-2025**	1.9066	1.9066
17	**9-28-2025**	**9-30-2025**	0.1188	0.1188
		Highest	1.9066	1.9066

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1836	0.1117	1.8413	6.8000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	108.2167	108.2167	4.8400e-003	1.9300e-003	108.9128
Energy	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	490.9854	490.9854	0.0350	9.2300e-003	494.6105
Mobile	1.0336	1.6684	9.5815	0.0226	2.3841	0.0192	2.4033	0.6379	0.0180	0.6559	0.0000	2,087.8897	2,087.8897	0.1097	0.1109	2,123.6708
Waste						0.0000	0.0000		0.0000	0.0000	50.7883	0.0000	50.7883	3.0015	0.0000	125.8260
Water						0.0000	0.0000		0.0000	0.0000	5.0229	11.1587	16.1816	0.5177	0.0124	32.8196
Total	**3.2486**	**2.0492**	**11.5373**	**0.0250**	**2.3841**	**0.0583**	**2.4424**	**0.6379**	**0.0571**	**0.6950**	**55.8112**	**2,698.2505**	**2,754.0618**	**3.6687**	**0.1344**	**2,885.8396**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1836	0.1117	1.8413	6.8000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	108.2167	108.2167	4.8400e-003	1.9300e-003	108.9128
Energy	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	490.9854	490.9854	0.0350	9.2300e-003	494.6105
Mobile	1.0336	1.6684	9.5815	0.0226	2.3841	0.0192	2.4033	0.6379	0.0180	0.6559	0.0000	2,087.8897	2,087.8897	0.1097	0.1109	2,123.6708
Waste						0.0000	0.0000		0.0000	0.0000	50.7883	0.0000	50.7883	3.0015	0.0000	125.8260
Water						0.0000	0.0000		0.0000	0.0000	5.0229	11.1587	16.1816	0.5177	0.0124	32.8196
Total	**3.2486**	**2.0492**	**11.5373**	**0.0250**	**2.3841**	**0.0583**	**2.4424**	**0.6379**	**0.0571**	**0.6950**	**55.8112**	**2,698.2505**	**2,754.0618**	**3.6687**	**0.1344**	**2,885.8396**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/28/2021	1/3/2022	5	70	
2	Site Preparation	Site Preparation	1/4/2022	2/28/2022	5	40	
3	Grading	Grading	3/1/2022	8/1/2022	5	110	

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

4	Building Construction	Building Construction	8/2/2022	5/1/2025	5	718	
5	Paving	Paving	5/2/2025	8/14/2025	5	75	
6	Architectural Coating	Architectural Coating	8/15/2025	11/27/2025	5	75	

Acres of Grading (Site Preparation Phase): 60

Acres of Grading (Grading Phase): 330

Acres of Paving: 0

Residential Indoor: 885,735; Residential Outdoor: 295,245; 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
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

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

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	87.00	26.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	17.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1092	1.0847	0.7440	1.3400e-003		0.0535	0.0535		0.0497	0.0497	0.0000	117.3027	117.3027	0.0330	0.0000	118.1281
Total	**0.1092**	**1.0847**	**0.7440**	**1.3400e-003**		**0.0535**	**0.0535**		**0.0497**	**0.0497**	**0.0000**	**117.3027**	**117.3027**	**0.0330**	**0.0000**	**118.1281**

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

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.6700e-003	0.0172	4.0000e-005	4.1200e-003	2.0000e-005	4.1500e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.4922	3.4922	1.4000e-004	1.3000e-004	3.5338
Total	**2.1700e-003**	**1.6700e-003**	**0.0172**	**4.0000e-005**	**4.1200e-003**	**2.0000e-005**	**4.1500e-003**	**1.1000e-003**	**2.0000e-005**	**1.1200e-003**	**0.0000**	**3.4922**	**3.4922**	**1.4000e-004**	**1.3000e-004**	**3.5338**

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	0.1092	1.0847	0.7440	1.3400e-003		0.0535	0.0535		0.0497	0.0497	0.0000	117.3026	117.3026	0.0330	0.0000	118.1280
Total	**0.1092**	**1.0847**	**0.7440**	**1.3400e-003**		**0.0535**	**0.0535**		**0.0497**	**0.0497**	**0.0000**	**117.3026**	**117.3026**	**0.0330**	**0.0000**	**118.1280**

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

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.6700e-003	0.0172	4.0000e-005	4.1200e-003	2.0000e-005	4.1500e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.4922	3.4922	1.4000e-004	1.3000e-004	3.5338
Total	**2.1700e-003**	**1.6700e-003**	**0.0172**	**4.0000e-005**	**4.1200e-003**	**2.0000e-005**	**4.1500e-003**	**1.1000e-003**	**2.0000e-005**	**1.1200e-003**	**0.0000**	**3.4922**	**3.4922**	**1.4000e-004**	**1.3000e-004**	**3.5338**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3200e-003	0.0129	0.0103	2.0000e-005		6.2000e-004	6.2000e-004		5.8000e-004	5.8000e-004	0.0000	1.6995	1.6995	4.8000e-004	0.0000	1.7115
Total	**1.3200e-003**	**0.0129**	**0.0103**	**2.0000e-005**		**6.2000e-004**	**6.2000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**1.6995**	**1.6995**	**4.8000e-004**	**0.0000**	**1.7115**

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

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0490	0.0490	0.0000	0.0000	0.0496
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0490**	**0.0490**	**0.0000**	**0.0000**	**0.0496**

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	1.3200e-003	0.0129	0.0103	2.0000e-005		6.2000e-004	6.2000e-004		5.8000e-004	5.8000e-004	0.0000	1.6995	1.6995	4.8000e-004	0.0000	1.7114
Total	**1.3200e-003**	**0.0129**	**0.0103**	**2.0000e-005**		**6.2000e-004**	**6.2000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**1.6995**	**1.6995**	**4.8000e-004**	**0.0000**	**1.7114**

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

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0490	0.0490	0.0000	0.0000	0.0496
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0490**	**0.0490**	**0.0000**	**0.0000**	**0.0496**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3931	0.0000	0.3931	0.2021	0.0000	0.2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.6617	0.3940	7.6000e-004		0.0323	0.0323		0.0297	0.0297	0.0000	66.8788	66.8788	0.0216	0.0000	67.4195
Total	**0.0634**	**0.6617**	**0.3940**	**7.6000e-004**	**0.3931**	**0.0323**	**0.4254**	**0.2021**	**0.0297**	**0.2317**	**0.0000**	**66.8788**	**66.8788**	**0.0216**	**0.0000**	**67.4195**

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

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.0100e-003	0.0108	3.0000e-005	2.8700e-003	2.0000e-005	2.8800e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.3534	2.3534	9.0000e-005	8.0000e-005	2.3797
Total	**1.3800e-003**	**1.0100e-003**	**0.0108**	**3.0000e-005**	**2.8700e-003**	**2.0000e-005**	**2.8800e-003**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**2.3534**	**2.3534**	**9.0000e-005**	**8.0000e-005**	**2.3797**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3931	0.0000	0.3931	0.2021	0.0000	0.2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0634	0.6617	0.3940	7.6000e-004		0.0323	0.0323		0.0297	0.0297	0.0000	66.8787	66.8787	0.0216	0.0000	67.4195
Total	**0.0634**	**0.6617**	**0.3940**	**7.6000e-004**	**0.3931**	**0.0323**	**0.4254**	**0.2021**	**0.0297**	**0.2317**	**0.0000**	**66.8787**	**66.8787**	**0.0216**	**0.0000**	**67.4195**

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

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.0100e-003	0.0108	3.0000e-005	2.8700e-003	2.0000e-005	2.8800e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.3534	2.3534	9.0000e-005	8.0000e-005	2.3797
Total	**1.3800e-003**	**1.0100e-003**	**0.0108**	**3.0000e-005**	**2.8700e-003**	**2.0000e-005**	**2.8800e-003**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**2.3534**	**2.3534**	**9.0000e-005**	**8.0000e-005**	**2.3797**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5062	0.0000	0.5062	0.2010	0.0000	0.2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1994	2.1364	1.5973	3.4100e-003		0.0899	0.0899		0.0827	0.0827	0.0000	299.9403	299.9403	0.0970	0.0000	302.3655
Total	**0.1994**	**2.1364**	**1.5973**	**3.4100e-003**	**0.5062**	**0.0899**	**0.5961**	**0.2010**	**0.0827**	**0.2837**	**0.0000**	**299.9403**	**299.9403**	**0.0970**	**0.0000**	**302.3655**

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

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	3.0900e-003	0.0331	8.0000e-005	8.7600e-003	5.0000e-005	8.8100e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	7.1910	7.1910	2.7000e-004	2.5000e-004	7.2713
Total	**4.2100e-003**	**3.0900e-003**	**0.0331**	**8.0000e-005**	**8.7600e-003**	**5.0000e-005**	**8.8100e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**7.1910**	**7.1910**	**2.7000e-004**	**2.5000e-004**	**7.2713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5062	0.0000	0.5062	0.2010	0.0000	0.2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1994	2.1364	1.5973	3.4100e-003		0.0899	0.0899		0.0827	0.0827	0.0000	299.9399	299.9399	0.0970	0.0000	302.3651
Total	**0.1994**	**2.1364**	**1.5973**	**3.4100e-003**	**0.5062**	**0.0899**	**0.5961**	**0.2010**	**0.0827**	**0.2837**	**0.0000**	**299.9399**	**299.9399**	**0.0970**	**0.0000**	**302.3651**

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

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	3.0900e-003	0.0331	8.0000e-005	8.7600e-003	5.0000e-005	8.8100e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	7.1910	7.1910	2.7000e-004	2.5000e-004	7.2713
Total	**4.2100e-003**	**3.0900e-003**	**0.0331**	**8.0000e-005**	**8.7600e-003**	**5.0000e-005**	**8.8100e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**7.1910**	**7.1910**	**2.7000e-004**	**2.5000e-004**	**7.2713**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0930	0.8511	0.8918	1.4700e-003		0.0441	0.0441		0.0415	0.0415	0.0000	126.2903	126.2903	0.0303	0.0000	127.0467
Total	**0.0930**	**0.8511**	**0.8918**	**1.4700e-003**		**0.0441**	**0.0441**		**0.0415**	**0.0415**	**0.0000**	**126.2903**	**126.2903**	**0.0303**	**0.0000**	**127.0467**

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

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1600e-003	0.0791	0.0226	3.0000e-004	9.3700e-003	9.0000e-004	0.0103	2.7100e-003	8.6000e-004	3.5700e-003	0.0000	28.5860	28.5860	2.0000e-004	4.3100e-003	29.8753
Worker	0.0181	0.0133	0.1425	3.4000e-004	0.0378	2.1000e-004	0.0380	0.0100	1.9000e-004	0.0102	0.0000	30.9966	30.9966	1.1500e-003	1.0600e-003	31.3424
Total	**0.0213**	**0.0925**	**0.1651**	**6.4000e-004**	**0.0471**	**1.1100e-003**	**0.0483**	**0.0128**	**1.0500e-003**	**0.0138**	**0.0000**	**59.5826**	**59.5826**	**1.3500e-003**	**5.3700e-003**	**61.2177**

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	0.0930	0.8511	0.8918	1.4700e-003		0.0441	0.0441		0.0415	0.0415	0.0000	126.2901	126.2901	0.0303	0.0000	127.0465
Total	**0.0930**	**0.8511**	**0.8918**	**1.4700e-003**		**0.0441**	**0.0441**		**0.0415**	**0.0415**	**0.0000**	**126.2901**	**126.2901**	**0.0303**	**0.0000**	**127.0465**

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

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1600e-003	0.0791	0.0226	3.0000e-004	9.3700e-003	9.0000e-004	0.0103	2.7100e-003	8.6000e-004	3.5700e-003	0.0000	28.5860	28.5860	2.0000e-004	4.3100e-003	29.8753
Worker	0.0181	0.0133	0.1425	3.4000e-004	0.0378	2.1000e-004	0.0380	0.0100	1.9000e-004	0.0102	0.0000	30.9966	30.9966	1.1500e-003	1.0600e-003	31.3424
Total	**0.0213**	**0.0925**	**0.1651**	**6.4000e-004**	**0.0471**	**1.1100e-003**	**0.0483**	**0.0128**	**1.0500e-003**	**0.0138**	**0.0000**	**59.5826**	**59.5826**	**1.3500e-003**	**5.3700e-003**	**61.2177**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8200e-003	0.1523	0.0460	6.8000e-004	0.0224	9.7000e-004	0.0233	6.4600e-003	9.3000e-004	7.3900e-003	0.0000	65.7014	65.7014	3.0000e-004	9.8800e-003	68.6537
Worker	0.0395	0.0277	0.3075	7.8000e-004	0.0901	4.7000e-004	0.0906	0.0240	4.3000e-004	0.0244	0.0000	71.5495	71.5495	2.4600e-003	2.3200e-003	72.3012
Total	**0.0433**	**0.1800**	**0.3535**	**1.4600e-003**	**0.1124**	**1.4400e-003**	**0.1139**	**0.0304**	**1.3600e-003**	**0.0318**	**0.0000**	**137.2509**	**137.2509**	**2.7600e-003**	**0.0122**	**140.9548**

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8200e-003	0.1523	0.0460	6.8000e-004	0.0224	9.7000e-004	0.0233	6.4600e-003	9.3000e-004	7.3900e-003	0.0000	65.7014	65.7014	3.0000e-004	9.8800e-003	68.6537
Worker	0.0395	0.0277	0.3075	7.8000e-004	0.0901	4.7000e-004	0.0906	0.0240	4.3000e-004	0.0244	0.0000	71.5495	71.5495	2.4600e-003	2.3200e-003	72.3012
Total	**0.0433**	**0.1800**	**0.3535**	**1.4600e-003**	**0.1124**	**1.4400e-003**	**0.1139**	**0.0304**	**1.3600e-003**	**0.0318**	**0.0000**	**137.2509**	**137.2509**	**2.7600e-003**	**0.0122**	**140.9548**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7300e-003	0.1534	0.0452	6.8000e-004	0.0225	9.9000e-004	0.0235	6.5100e-003	9.4000e-004	7.4500e-003	0.0000	65.1857	65.1857	2.9000e-004	9.7900e-003	68.1113
Worker	0.0365	0.0245	0.2845	7.6000e-004	0.0908	4.4000e-004	0.0912	0.0241	4.1000e-004	0.0245	0.0000	69.6350	69.6350	2.2200e-003	2.1400e-003	70.3294
Total	**0.0403**	**0.1779**	**0.3297**	**1.4400e-003**	**0.1133**	**1.4300e-003**	**0.1147**	**0.0307**	**1.3500e-003**	**0.0320**	**0.0000**	**134.8207**	**134.8207**	**2.5100e-003**	**0.0119**	**138.4407**

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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7300e-003	0.1534	0.0452	6.8000e-004	0.0225	9.9000e-004	0.0235	6.5100e-003	9.4000e-004	7.4500e-003	0.0000	65.1857	65.1857	2.9000e-004	9.7900e-003	68.1113
Worker	0.0365	0.0245	0.2845	7.6000e-004	0.0908	4.4000e-004	0.0912	0.0241	4.1000e-004	0.0245	0.0000	69.6350	69.6350	2.2200e-003	2.1400e-003	70.3294
Total	**0.0403**	**0.1779**	**0.3297**	**1.4400e-003**	**0.1133**	**1.4300e-003**	**0.1147**	**0.0307**	**1.3500e-003**	**0.0320**	**0.0000**	**134.8207**	**134.8207**	**2.5100e-003**	**0.0119**	**138.4407**

3.5 Building Construction - 2025

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	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8850	100.8850	0.0237	0.0000	101.4778
Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8850**	**100.8850**	**0.0237**	**0.0000**	**101.4778**

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

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0507	0.0147	2.2000e-004	7.4800e-003	3.3000e-004	7.8100e-003	2.1600e-003	3.1000e-004	2.4700e-003	0.0000	21.2632	21.2632	9.0000e-005	3.1900e-003	22.2161
Worker	0.0112	7.2000e-003	0.0870	2.4000e-004	0.0301	1.4000e-004	0.0303	8.0100e-003	1.3000e-004	8.1400e-003	0.0000	22.3386	22.3386	6.6000e-004	6.6000e-004	22.5514
Total	**0.0124**	**0.0579**	**0.1017**	**4.6000e-004**	**0.0376**	**4.7000e-004**	**0.0381**	**0.0102**	**4.4000e-004**	**0.0106**	**0.0000**	**43.6018**	**43.6018**	**7.5000e-004**	**3.8500e-003**	**44.7674**

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	0.0595	0.5424	0.6997	1.1700e-003		0.0230	0.0230		0.0216	0.0216	0.0000	100.8848	100.8848	0.0237	0.0000	101.4777
Total	**0.0595**	**0.5424**	**0.6997**	**1.1700e-003**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**100.8848**	**100.8848**	**0.0237**	**0.0000**	**101.4777**

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

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0507	0.0147	2.2000e-004	7.4800e-003	3.3000e-004	7.8100e-003	2.1600e-003	3.1000e-004	2.4700e-003	0.0000	21.2632	21.2632	9.0000e-005	3.1900e-003	22.2161
Worker	0.0112	7.2000e-003	0.0870	2.4000e-004	0.0301	1.4000e-004	0.0303	8.0100e-003	1.3000e-004	8.1400e-003	0.0000	22.3386	22.3386	6.6000e-004	6.6000e-004	22.5514
Total	**0.0124**	**0.0579**	**0.1017**	**4.6000e-004**	**0.0376**	**4.7000e-004**	**0.0381**	**0.0102**	**4.4000e-004**	**0.0106**	**0.0000**	**43.6018**	**43.6018**	**7.5000e-004**	**3.8500e-003**	**44.7674**

3.6 Paving - 2025

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	0.0343	0.3218	0.5467	8.5000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	75.0722	75.0722	0.0243	0.0000	75.6792
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0343**	**0.3218**	**0.5467**	**8.5000e-004**		**0.0157**	**0.0157**		**0.0144**	**0.0144**	**0.0000**	**75.0722**	**75.0722**	**0.0243**	**0.0000**	**75.6792**

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

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6600e-003	1.0700e-003	0.0129	4.0000e-005	4.4800e-003	2.0000e-005	4.5000e-003	1.1900e-003	2.0000e-005	1.2100e-003	0.0000	3.3203	3.3203	1.0000e-004	1.0000e-004	3.3519
Total	**1.6600e-003**	**1.0700e-003**	**0.0129**	**4.0000e-005**	**4.4800e-003**	**2.0000e-005**	**4.5000e-003**	**1.1900e-003**	**2.0000e-005**	**1.2100e-003**	**0.0000**	**3.3203**	**3.3203**	**1.0000e-004**	**1.0000e-004**	**3.3519**

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	0.0343	0.3218	0.5467	8.5000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	75.0721	75.0721	0.0243	0.0000	75.6791
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0343**	**0.3218**	**0.5467**	**8.5000e-004**		**0.0157**	**0.0157**		**0.0144**	**0.0144**	**0.0000**	**75.0721**	**75.0721**	**0.0243**	**0.0000**	**75.6791**

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

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6600e-003	1.0700e-003	0.0129	4.0000e-005	4.4800e-003	2.0000e-005	4.5000e-003	1.1900e-003	2.0000e-005	1.2100e-003	0.0000	3.3203	3.3203	1.0000e-004	1.0000e-004	3.3519
Total	**1.6600e-003**	**1.0700e-003**	**0.0129**	**4.0000e-005**	**4.4800e-003**	**2.0000e-005**	**4.5000e-003**	**1.1900e-003**	**2.0000e-005**	**1.2100e-003**	**0.0000**	**3.3203**	**3.3203**	**1.0000e-004**	**1.0000e-004**	**3.3519**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4100e-003	0.0430	0.0678	1.1000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	9.5747	9.5747	5.2000e-004	0.0000	9.5878
Total	**4.1118**	**0.0430**	**0.0678**	**1.1000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**9.5747**	**9.5747**	**5.2000e-004**	**0.0000**	**9.5878**

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

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8800e-003	1.2100e-003	0.0147	4.0000e-005	5.0800e-003	2.0000e-005	5.1000e-003	1.3500e-003	2.0000e-005	1.3700e-003	0.0000	3.7630	3.7630	1.1000e-004	1.1000e-004	3.7988
Total	**1.8800e-003**	**1.2100e-003**	**0.0147**	**4.0000e-005**	**5.0800e-003**	**2.0000e-005**	**5.1000e-003**	**1.3500e-003**	**2.0000e-005**	**1.3700e-003**	**0.0000**	**3.7630**	**3.7630**	**1.1000e-004**	**1.1000e-004**	**3.7988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4100e-003	0.0430	0.0678	1.1000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	9.5747	9.5747	5.2000e-004	0.0000	9.5878
Total	**4.1118**	**0.0430**	**0.0678**	**1.1000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**9.5747**	**9.5747**	**5.2000e-004**	**0.0000**	**9.5878**

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

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8800e-003	1.2100e-003	0.0147	4.0000e-005	5.0800e-003	2.0000e-005	5.1000e-003	1.3500e-003	2.0000e-005	1.3700e-003	0.0000	3.7630	3.7630	1.1000e-004	1.1000e-004	3.7988
Total	**1.8800e-003**	**1.2100e-003**	**0.0147**	**4.0000e-005**	**5.0800e-003**	**2.0000e-005**	**5.1000e-003**	**1.3500e-003**	**2.0000e-005**	**1.3700e-003**	**0.0000**	**3.7630**	**3.7630**	**1.1000e-004**	**1.1000e-004**	**3.7988**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0336	1.6684	9.5815	0.0226	2.3841	0.0192	2.4033	0.6379	0.0180	0.6559	0.0000	2,087.8897	2,087.8897	0.1097	0.1109	2,123.6708
Unmitigated	1.0336	1.6684	9.5815	0.0226	2.3841	0.0192	2.4033	0.6379	0.0180	0.6559	0.0000	2,087.8897	2,087.8897	0.1097	0.1109	2,123.6708

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,293.92	2,318.22	2077.65	6,388,649	6,388,649
Total	2,293.92	2,318.22	2,077.65	6,388,649	6,388,649

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
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.525357	0.051382	0.167800	0.162287	0.028850	0.007480	0.012195	0.015949	0.000630	0.000469	0.022910	0.001396	0.003296

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

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	179.2808	179.2808	0.0290	3.5200e-003	181.0535
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	179.2808	179.2808	0.0290	3.5200e-003	181.0535
NaturalGas Mitigated	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	311.7047	311.7047	5.9700e-003	5.7100e-003	313.5570
NaturalGas Unmitigated	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	311.7047	311.7047	5.9700e-003	5.7100e-003	313.5570

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

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					
Single Family Housing	5.84112e+006	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	311.7047	311.7047	5.9700e-003	5.7100e-003	313.5570
Total		**0.0315**	**0.2692**	**0.1145**	**1.7200e-003**		**0.0218**	**0.0218**		**0.0218**	**0.0218**	**0.0000**	**311.7047**	**311.7047**	**5.9700e-003**	**5.7100e-003**	**313.5570**

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					
Single Family Housing	5.84112e+006	0.0315	0.2692	0.1145	1.7200e-003		0.0218	0.0218		0.0218	0.0218	0.0000	311.7047	311.7047	5.9700e-003	5.7100e-003	313.5570
Total		**0.0315**	**0.2692**	**0.1145**	**1.7200e-003**		**0.0218**	**0.0218**		**0.0218**	**0.0218**	**0.0000**	**311.7047**	**311.7047**	**5.9700e-003**	**5.7100e-003**	**313.5570**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.93767e+006	179.2808	0.0290	3.5200e-003	181.0535
Total		**179.2808**	**0.0290**	**3.5200e-003**	**181.0535**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.93767e+006	179.2808	0.0290	3.5200e-003	181.0535
Total		**179.2808**	**0.0290**	**3.5200e-003**	**181.0535**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1836	0.1117	1.8413	6.8000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	108.2167	108.2167	4.8400e-003	1.9300e-003	108.9128
Unmitigated	2.1836	0.1117	1.8413	6.8000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	108.2167	108.2167	4.8400e-003	1.9300e-003	108.9128

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4105					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7083					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0106	0.0909	0.0387	5.8000e-004		7.3500e-003	7.3500e-003		7.3500e-003	7.3500e-003	0.0000	105.2694	105.2694	2.0200e-003	1.9300e-003	105.8950
Landscaping	0.0541	0.0208	1.8026	1.0000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	2.9473	2.9473	2.8200e-003	0.0000	3.0179
Total	**2.1836**	**0.1117**	**1.8413**	**6.8000e-004**		**0.0174**	**0.0174**		**0.0174**	**0.0174**	**0.0000**	**108.2167**	**108.2167**	**4.8400e-003**	**1.9300e-003**	**108.9128**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4105					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7083					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0106	0.0909	0.0387	5.8000e-004		7.3500e-003	7.3500e-003		7.3500e-003	7.3500e-003	0.0000	105.2694	105.2694	2.0200e-003	1.9300e-003	105.8950
Landscaping	0.0541	0.0208	1.8026	1.0000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	2.9473	2.9473	2.8200e-003	0.0000	3.0179
Total	**2.1836**	**0.1117**	**1.8413**	**6.8000e-004**		**0.0174**	**0.0174**		**0.0174**	**0.0174**	**0.0000**	**108.2167**	**108.2167**	**4.8400e-003**	**1.9300e-003**	**108.9128**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.1816	0.5177	0.0124	32.8196
Unmitigated	16.1816	0.5177	0.0124	32.8196

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	15.8324 / 9.98131	16.1816	0.5177	0.0124	32.8196
Total		**16.1816**	**0.5177**	**0.0124**	**32.8196**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	15.8324 / 9.98131	16.1816	0.5177	0.0124	32.8196
Total		**16.1816**	**0.5177**	**0.0124**	**32.8196**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	50.7883	3.0015	0.0000	125.8260
Unmitigated	50.7883	3.0015	0.0000	125.8260

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	250.2	50.7883	3.0015	0.0000	125.8260
Total		**50.7883**	**3.0015**	**0.0000**	**125.8260**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	250.2	50.7883	3.0015	0.0000	125.8260
Total		**50.7883**	**3.0015**	**0.0000**	**125.8260**

9.0 Operational Offroad

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

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

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

City of Visalia Circulation Element

4 CIRCULATION

The Circulation Element of the 2030 General Plan is intended to provide guidance and specific actions to ensure the continued safe and efficient operation of Visalia's circulation system. The Element is based on a fundamental philosophy that traffic conditions in the City can be managed through a comprehensive program of transportation planning, land use planning, and growth management strategies. This Element includes provisions for roadways, transit, aviation, pedestrian, and bicycle transportation modes, as well as parking conditions.

The Circulation Element responds directly to the Government Code [Section 65302(b)], which requires "a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan."

State Law recognizes that circulation and land use are closely related and requires that policies in this Element and the Land Use Element be linked. Careful integration of the City's traffic and circulation policies with its land use policies will ensure that there is sufficient roadway capacity to accommodate traffic generated by planned future development. The City is committed to designing a system of regional routes, local roads, public transit and bicycle and pedestrian pathways that will enhance the community and protect the environment.

The Land Use Element contains policies related to the physical framework for development that the circulation system is designed to serve all transportation users including vehicles, trucks, bicyclists and pedestrians. This Element also addresses landscaping along major streets and planning for street connectivity in new neighborhoods. It discusses how to create pedestrian-friendly environments and design for alternate modes of transportation. The Noise Element of the General Plan includes policies to alleviate noise generated by traffic conditions.

4.1 COMPLETE STREETS FRAMEWORK

In September 2008, the Governor signed into law the California Complete Streets Act, requiring General Plans to develop a plan for a multi-modal transportation system. The goal of the Act is to encourage cities to rethink policies that emphasize automobile circulation and prioritize motor vehicle improvements, and come up with creative solutions that emphasize all modes of transportation. Complete Streets design has many advantages. When people have more transportation options, there are fewer traffic jams and the overall capacity of the transportation network increases. Complete Street design attends to the needs of people who don't travel by automobile, who have often been overlooked. Additionally, increased transit ridership, walking, and biking can reduce air pollution, energy consumption, and greenhouse gas emissions, while improving the overall travel experience for road users.

The City is committed to designing a system of regional routes, local roads, public transit and bicycle and pedestrian pathways that will enhance the community and protect the environment.

To further the goal of optimizing travel by all modes, this General Plan incorporates the concept of "Complete Streets." Complete Streets are designed and operated to enable safe, attractive, and comfortable access and travel for all users, including motorists, pedestrians, bicyclists, children, seniors, individuals with disabilities, and users of public transportation.

While there is no standard design template for a Complete Street, it generally includes one or more of the following features: bicycle lanes, wide shoulders, plenty of well-designed and well placed crosswalks, crossing islands in appropriate midblock locations, bus pullouts or special bus lanes, audible pedestrian signals, sidewalk bulb-outs, center medians, and street trees, planter strips and ground cover. Complete Streets create a sense of place and improve social interaction due to their emphasis on encouraging pedestrian activity.

4.2 GUIDING PRINCIPLES

Visalia's Circulation Element relies upon three principles:

- Land use and the circulation system are interactive and interrelated;
- The City's traffic circulation planning efforts are integrated with those of the County and Caltrans in a cooperative, regional planning effort; and
- State of the art transportation engineering is used, applying a Complete Streets framework, to bring planned improvements to reality considering the multi-modal, increased travel capacity and safety needs of the community.

Only through the development and implementation of all these principles can the City's commitment to a balanced, efficient circulation system be achieved.

Connectivity

The major objective of the Circulation Element is to provide an interconnected street system with improved north-south and east-west connections for existing and future development in Visalia. The City's original street layout provided street connections linking neighborhoods with work places, but as the community has grown, access has not always improved.

Traditional grid street designs allow for through movement and good connections between and within neighborhoods. Short blocks offer a choice of routes and enable more direct connections. Variations from the traditional grid can allow for diagonal and curvilinear streets as well as larger or smaller blocks for maximum flexibility and improved connectivity.

In order to ensure that street layout in future development incorporates the need for neighborhood connectivity and the comfort and safety of pedestrians and bicyclists, it is essential that:

- New development is connected to the surroundings with an increased number of access points and pedestrian and bicycle connections to the neighborhood network;
- Blocks are short to allow for more direct connections;
- Neighborhood streets are designed at a human-scale, without excessively wide streets; and

- Traffic controls are incorporated including speed limits, bulb outs, modern roundabouts, signage, and truck routes to restrict commercial traffic in neighborhoods.

The 2030 General Plan provides for new routes in partially developed portions of the Planning Area and expands the capacity and efficiency of the existing system. In addition, the Plan provides for narrower streets in some areas than might otherwise be designed based upon current traffic design standards and requirements alone.

Balanced Modes

Another objective is to create a balanced transportation system that serves public transit, bicyclists and pedestrians as well as private motor vehicles. Careful integration of land use and transportation and attention to the design and location of all roadway elements is essential to support pedestrian-oriented development and maintain the "small-town" atmosphere that Visalians desire. The 2030 General Plan includes new bikeways, trails and pedestrian facilities to link neighborhoods, schools, major recreation sites, and commercial centers including downtown. The Plan also fosters compact development, which can support additional public transit. By facilitating use of alternative modes of travel, Visalia will encourage physical activity, reduce auto-dependency, and lessen roadway congestion.

4.3 OVERALL CIRCULATION SYSTEM PLANNING

Roadway Network

In Visalia, the roadway system is based on a traditional grid pattern, on which all modes of transportation depend to some degree. This pattern has been modified in recent years to include some suburban curvilinear and cul-de-sac streets in several areas in the City. While State Routes 63, 99, 198 and 216 provide regional east/west and north/south access, these large arterials and freeways create lineal barriers to connectivity on smaller city streets.

Functional Street Classifications

Visalia's roadway system is set up around a hierarchy of street types, which are commonly referred to as functional classifications. These functional classifications for most major streets are illustrated on **Figure 4-1** and summarized as follows:

Freeways

Freeways provide intra- and inter-regional mobility in Visalia. Freeway access is restricted to primary arterials via interchanges. State routes 99 and 198 are the only freeways within the Planning Area.

- *State Route 99* is a four- to six- lane divided freeway with a landscaped median. The northbound segment between Betty Drive in Goshen to Avenue 384 south of Kingsburg (Fresno County) contains three travel lanes; the remainder of State Route 99 in Tulare County contains two northbound and two southbound travel lanes. With approximately 55,000 daily trips near State Route 198, State Route 99 is the second most traveled roadway in the

Good roadway design is essential to support pedestrian-oriented development and maintain a "small-town" feel (top).

Visalia's roadway system is set up around a hierarchy of street types, including arterials such as Ben Maddox Way (bottom).

county. In addition, it is estimated that nearly 25 percent of these trips are trucks.

- *State Route 198* is a major east-west corridor that begins at US 101, travels through the City of Visalia, and terminates at the Sequoia National Park entrance. This roadway has several sections that contain two and four lane roadways. In Visalia this roadway operates as a four lane freeway. State Route 198 will be improved to a four lane expressway between State Route 43 and State Route 99. State Route 198 serves a mix of residential, commercial, industrial and agricultural land uses. SR 198 between Ben Maddox and Mooney Boulevard is the County's most traveled roadway, with 58,000 daily trips in 2011.

Arterials

Arterials collect and distribute traffic from freeways and expressways to collector streets and vice versa. On arterials, the optimum distance between intersections is approximately one quarter mile. Driveways to major traffic generators may be permitted within the quarter-mile spacing. Other intersections closer than one quarter mile should be restricted to right turn access. Based upon the Visalia Improvement Standards (2008), the arterial right-of-way widths range from 84 feet to 110 feet. Arterials feature two to three through lanes of traffic in each direction with a left-turn channelization.

Collectors

Collectors connect local and arterial streets and provide direct access to parcels. At major intersections, driveways on collector streets should be no closer than 50 feet to the intersection per the City of Visalia Improvement Standards. Non-residential driveways and/or intersecting streets on collector streets should be no closer than 300 to 400 feet apart.

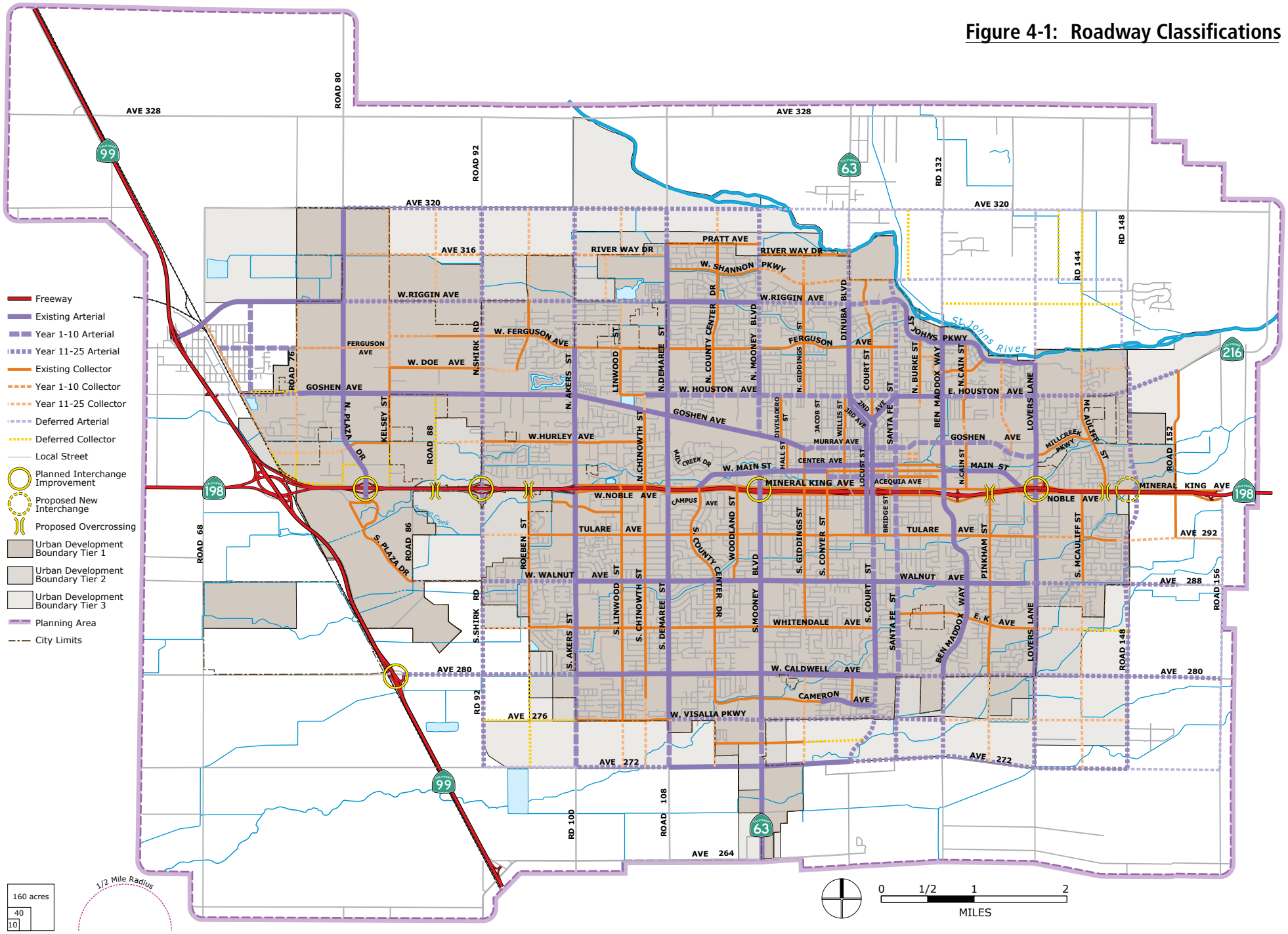
Major collectors carry four lanes of traffic within an 84-foot right-of-way and two bicycle lanes within an additional 10 feet of right-of-way. Collectors generally carry two lanes of traffic and are a minimum of 60 feet wide.

Local Streets

Local streets provide direct access to parcels. Local streets represent the largest part of the city's circulation system. Access to local streets is unrestricted and right-of-way widths vary between 48 and 66 feet depending on surrounding land uses (2008 City of Visalia Design and Improvement Standards). All roadways not identified in the General Plan as freeways, arterials, or collectors are designated local streets.

Although the City of Visalia Design Standards provide guidance on cross-section widths and the City has preserved right-of-way along street corridors for future transportation-related improvements, street designs may vary with regard to raised medians, travel lanes for vehicles, bicycle lanes, parking and sidewalks within these cross sections. Future roadways will be developed on a street by street basis according to direction from the City.

Figure 4-1: Roadway Classifications



Level of Service

To determine the operating conditions of a roadway segment or intersection, the concept of level of service (LOS) is commonly used. The LOS grading system is a scale ranging from LOS A to LOS F, with LOS A representing free-flow conditions and LOS F representing congested conditions. **Table 4-1** provides more specific definitions.

Table 4-1: Intersection Level of Service Definitions

		Stopped Delay/Vehicle (sec)		
LOS	*Description*	*Signalized*	*Unsignalized*	*All-Way Stop*
A	**Free Flow or Insignificant Delays:** Vehicles are completely unimpeded in their abil-ity to maneuver within the traffic stream. Control delay at signalized in-tersections is minimal.	< 10.0	< 10.0	< 10.0
B	**Stable Operation or Minimal Delays**: The ability to maneuver within the traffic stream is only slightly restricted, and control delay at signalized intersections are not significant.	>10 and < 20.0	>10 and < 15.0	>10 and < 15.0
C	**Stable Operation or Acceptable Delays:** The ability to maneuver and change lanes is somewhat restricted, and average travel speeds may be about 50 percent of the free flow speed.	>20 and < 35.0	>15 and < 25.0	>15 and < 25.0
D	**Approaching Unstable or Tolerable Delays**: Small increases in flow may cause sub-stantial increases in delay and decreases in travel speed.	>35 and < 55.0	>25 and < 35.0	>25 and < 35.0
E	**Unstable Operation or Significant Delays:** Significant delays may occur and average travel speeds may be 33 percent or less of the free flow speed.	>55 and < 80.0	>35 and < 50.0	>35 and < 50.0
F	**Forced Flow or Excessive Delays:** Conges-tion, high delays, and extensive queuing occur at critical signalized intersections with urban street flow at extremely low speeds.	> 80.0	> 50.0	> 50.0

Source: Highway Capacity Manual, Transportation Research Board.

Existing conditions for roadway segment levels of service were estimated utilizing average daily traffic (ADT) and then evaluated based on LOS thresholds; see **Table 4-2**.

Table 4-2: Level of Service Criteria for Roadway Segments

	Total Two-way Average Daily Traffic (ADT)				
Roadway Segment Type	*LOS A*	*LOS B*	*LOS C*	*LOS D*	*LOS E*
6-Lane Divided Freeway	42,000	64,800	92,400	111,600	120,000
4-Lane Divided Freeway	28,000	43,200	61,600	74,400	80,000
6-Lane Freeway	36,900	61,100	85,300	103,600	115,300
4-Lane Freeway	23,800	39,600	55,200	67,100	74,600
6-lane Divided Expressway (with left-turn lanes)	35,500	42,200	46,200	55,800	60,000
6-Lane Divided Arterial (with left-turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Divided Arterial (with left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Arterial (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Arterial (no left-turn lane)	9,000	10,500	12,000	13,500	15,000
2-Lane Collector/Local Street	6,000	7,500	9,000	10,500	12,000

Note: All volumes are approximate and assume ideal roadway characteristics. Actual threshold volumes for each Level of Service listed above may vary depending on a variety of factors including curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks and other heavy vehicles, travel lane widths, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

Source: Based on "Highway Capacity Manual," Transportation Research Board, 2000.

All of the intersections and roadway segments studied for the General Plan update currently have acceptable "level of service" traffic conditions, including South Mooney Boulevard (State Route 63).

Existing Traffic Conditions

The city's roadways were evaluated using average daily traffic (ADT) counts for the 2008 to 2010 period. Intersection facilities were evaluated for the AM and PM peak-hour using 2010 peak-hour turning movement counts. Traffic conditions and deficiencies were identified by calculating level of service (LOS).

LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS was calculated for different intersection control types using the methods documented in the Highway Capacity Manual 2000 (HCM 2000).

The previous General Plan established LOS "D" as the minimum acceptable LOS standard on city roadways. Although Caltrans has not designated a LOS standard, Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) indicates that when the LOS of a State highway facility falls below the LOS "C/D" cusp in rural areas and the LOS "D/E" cusp in urban areas, additional traffic may have a significant impact.

Existing Intersection Level of Service

Existing weekday AM and PM peak-hour traffic volume counts were conducted at 25 intersections and 24-hour counts were conducted on roadway segments in April 2010 while school was in session. The AM peak hour is defined as one-hour of peak traffic flow counted between 7:00 AM and 9:00 AM and the PM peak hour is defined as one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM. **Table 4-3** summarizes intersection LOS and seconds of delay for the AM and PM peak hours; Table 4-4 summarizes roadway segment LOS in 2010 (the baseline year).

As **Table 4-3** shows, all of the 25 study intersections operate at acceptable LOS under existing conditions (2010 baseline).

Table 4-3: Existing Intersection LOS (2010)

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Riggin Avenue/Shirk Road	AWSC	9.7	A	9.6	A
2	Riggin Avenue/Demaree Street	Signal	17.4	B	19.8	B
3	Riggin Avenue/Giddings Street	TWSC	14.6	B	16.6	C
4	Riggin Avenue/Dinuba Boulevard	Signal	17.3	B	27.5	C
5	Ferguson Avenue/Linwood Street	AWSC	10.7	B	9.0	A
6	Goshen Avenue/Plaza Drive	Signal	24.7	C	22.5	C
7	Houston Avenue/Demaree Street	Signal	23.4	C	19.8	B
8	Houston Avenue/Ben Maddox way	Signal	20.6	C	24.0	C
9	Houston Avenue/McAuliff Street	Signal	20.7	C	18.2	B
10	Hurley Street/Plaza Drive	Signal	6.8	A	8.9	A
11	Hillsdale Avenue/Akers Street	Signal	21.3	C	18.1	B
12	Mineral King Avenue/Akers Street	Signal	16.9	B	17.9	B
13	Noble Avenue/Akers Street	Signal	14.1	B	17.5	B
14	Cypress Avenue/Akers Street	Signal	17.6	B	34.3	C
15	Main Street/West Street	Signal	6.6	A	7.1	A
16	Noble Avenue/Watson Street	Signal	8.4	A	7.1	A
17	Tulare Avenue/Santa Fe Street	AWSC	13.4	B	14.3	B
18	Walnut Avenue/Shirk Road	AWSC	13.3	B	15.7	C
19	Whitendale Avenue/Demaree Street	Signal	8.4	A	8.9	A
20	Whitendale Avenue/Woodland Drive	TWSC	11.8	B	14.5	B
21	K Avenue/Ben Maddox Way	AWSC	9.5	A	13.5	B
22	K Avenue/Lovers Lane	OWSC	15.4	C	17.9	C
23	Caldwell Avenue/Burke Street	Signal	15.6	C	23.8	C
24	Caldwell Avenue/Lovers Lane	Signal	18.8	B	21.0	C
25	Visalia Road/Akers Street	TWSC	16.9	C	15.6	C

Legend:
TWSC = Two-Way-Stop Control; AWSC = All-Way-Stop Control; OWSC = One-Way-Stop Control
For Signalized Intersections Average Delay = Average Intersection Delay; For TWSC Intersections Average Delay = Worst-Case Intersection Movement Delay; For Signalized Intersections LOS = Average Intersection Level-of-Service; For TWSC Intersections LOS = Worst-Case Movement's Level-of-Service; Warrant = MUTCD Peak Hour Warrant 3

Source: Omni-Means, 2014.

Table 4-4 identifies existing roadway segment LOS for existing conditions (baseline 2010). **Table 4-4** shows that all of the 33 roadway segments operate at acceptable LOS under existing conditions.

Table 4-4: Existing Roadway Segment LOS (2010)

Roadway Segment	*Limits*	*No. of Lanes*	*Facility Type*	*AADT*	*LOS*
Akers Street	Rialto – Caldwell Avenue	4	Arterial	7,100	B
Akers Street	Goshen Avenue – Ferguson Ave.	4	Arterial	10,400	B
Caldwell Avenue	Shirk Street - Aspen	2	Arterial	10,300	B
Caldwell Avenue	Ben Maddox Way – Pinkham Ave.	2	Arterial	13,500	B
Center Avenue	Floral Street – Court Street	2	Arterial	6,600	B
County Center	Beech Street – Walnut Avenue	2	Collector	10,478	C
Demaree Street	Damsen - Nicholas	4	Arterial	21,600	B
Demaree Street	Walnut Avenue – Tulare Avenue	4	Arterial	18,600	B
Goshen Avenue	Demaree Street – Chinowth Street	4	Arterial	18,800	B
Main Street	Floral Street – Court Street	2	Collector	7,100	C
Noble Avenue	Pinkham Street – Lovers Lane	2	Arterial	9,000	B
Riggin Avenue	Akers Street – Linwood Street	2	Arterial	7,800	C
Santa Fe Street	Center Avenue – School Street	2	Collector	2,600	B
Santa Fe Street	Walnut Avenue – Tulare Avenue	2	Collector	5,300	C
Shirk Avenue	Goshen Avenue – Doe Avenue	2	Arterial	7,600	C
Shirk Avenue	Walnut Avenue – State Route 198	2	Arterial	6,800	C
Walnut Avenue	Atwood – Linwood Street	4	Arterial	11,600	B
Walnut Avenue	Conyer Street – Court Street	4	Arterial	15,200	B
Walnut Avenue	Yale – Mall Entrance	4	Arterial	15,100	B
Whitendale Avenue	Crenshaw – Linwood Street	2	Collector	7,300	C
Whitendale Avenue	West Street – Court Street	2	Collector	6,100	C
State Route 63	Caldwell Avenue – Walnut Avenue	6	State Route	33,000	B
State Route 63	Walnut Avenue – Tulare Avenue	6	State Route	31,000	B
State Route 63	School Avenue – Murray Avenue	4	State Route	11,700	B
State Route 99	Caldwell Avenue – State Route 198	4	State Route	55,000	B

Table 4-4: Existing Roadway Segment LOS (2010)

Roadway Segment	*Limits*	*No. of Lanes*	*Facility Type*	*AADT*	*LOS*
State Route 99	State Route 198 – Avenue 304	4	State Route	49,500	B
State Route 99	Avenue 304 – Betty Drive	4	State Route	49,000	B
State Route 198	State Route – Akers Street	4	State Route	50,000	C
State Route 198	Akers Street - Mooney Boulevard	4	State Route	59,000	D
State Route 198	Mooney Boulevard – Lovers Lane	4	State Route	61,000	D
State Route 198	Lovers Lane – Road 156	4	State Route	29,000	B
State Route 216	Mill Creek Parkway – Douglas Ave.	4	State Route	19,200	B
State Route 216	Lovers Lane – McAuliff Street	2	State Route	9,200	C

Source: Omni-Means, 2010

Objectives

T-O-1 Develop and maintain a road system that is convenient, safe, efficient, and cost effective.

T-O-2 Maximize the use and efficiency of the existing transportation system through application of Transportation System Management (TSM) strategies.

T-O-3 Promote ways to reduce the number of peak hour trips and vehicle-miles traveled in the Planning Area.

T-O-4 Ensure that new development pays its fair share of the costs of new and improved transportation facilities.

Policies

System Planning

T-P-1 Provide transportation facilities based on a "Complete Streets" concept that facilitate the balanced use of all travel modes (pedestrians, bicyclists, motorists, and transit users), meeting the transportation needs of all ages and abilities and providing mobility for a variety of trip purposes.

T-P-2 Optimize roadway operations with priority given to signal timing coordination in order to increase traffic-carrying capacity and decrease air pollution and congestion. Roundabouts shall be considered when feasible and beneficial as an alternative to traffic signals.

The Plan directs the City to design and build future roadways following the Circulation Diagram, including new streets and improvements to existing streets (top). Street design standards are to be updated to follow the "Complete Streets" concept (bottom).

T-P-3 Design and build future roadways that complement and enhance the existing network, as shown on the Circulation Diagram, to ensure that each new and existing roadway continues to function as intended.

T-P-4 Where feasible, space traffic signals no closer than one-quarter mile along two-way arterials except in unusual circumstances. The intersections of arterial and collector streets and access driveways to major traffic generators that are signalized shall be located so as to maintain this spacing.

T-P-5 Take advantage of opportunities to consolidate driveways, access points, and curb cuts along existing arterials when a change in development or a change in intensity occurs or when traffic operation or safety warrants.

T-P-6 Establish priorities for improvements based on the functional classifications identified for street segments on the Circulation System Map and on the relative importance of the roadway for each travel mode.

For example, transit stops and bus turnouts may have higher priority than improvements for through traffic on important transit corridors; through traffic may have higher priority than on-street parking on major arterials; and pedestrian and bicycle movement may have high priority in areas with high pedestrian interest and activity (such as Downtown).

T-P-7 Continue to implement a monitoring and evaluation program that will provide the data and planning needed to develop an effective and coordinated Capital Improvement Program (CIP) that will provide circulation improvements in concert with development trends.

T-P-8 Give priority to funding and implementing projects that either complete links on the transportation system or relieve existing deficiencies.

Level of Service Standards; Engineering and Safety Standards

T-P-9 Maintain acceptable levels of service for all modes and facilities, as established in Tables 4-1, Intersection Level of Service Definitions and 4-2, Level of Service Criteria for Roadway Segments.

T-P-10 Manage local residential streets to limit average daily vehicle volumes to 1,500 or less and maintain average vehicle speeds between 15 and 25 miles per hour.

T-P-11 Update the City of Visalia Engineering and Street Design Standards to ensure that roadway and streetscape design specifications are in accordance with the Complete Streets concept and other policies in this General Plan.

Updated design standards must allow flexibility to accommodate retrofitting streets with limited right-of-way. In order to accommodate all travel modes, adjustments may be made to median, travel lane, and bike lane widths; alternate

bikeway routes on parallel facilities may also be considered.

T-P-12 Require or provide adequate traffic safety measures on all new and existing roadways.

These measures may include, but shall not be limited to: appropriate levels of maintenance, proper street design, traffic control devices, street lights, and coordination with school districts to provided school crossing signs and protection.

Right of Way Acquisition and Construction

T-P-13 Where possible, acquire right-of-way within older areas of the city to improve the connectivity of the roadway system, consistent with Figure 4-1. The benefits of improved traffic flow shall be weighed against the adverse impacts of street widening on the neighborhoods and adjacent land uses.

T-P-14 Require residential communities on undeveloped land planned for urban uses to provide stubs for future connections to the edge of the property line. Where stubs exist on adjacent properties, new streets within the development should connect to them.

T-P-15 Require additional right-of-way and improvements of Circulation Element facilities where needed for turning movements or to provide access to adjacent properties wherever access is not feasible from the lower classification street system.

T-P-16 Promote phased construction of major arterials where sufficient right-of-way width is obtained for ultimate future needs, but street construction width is adequate to meet present need, thereby avoiding maintenance costs resulting from unused pavement.

T-P-17 Use citywide traffic impact fees to provide additional funding for transportation improvements with citywide benefits, such as highway interchanges and ramps. Provide for automatic annual adjustments in traffic fees to reflect increases in construction costs (materials, inflation, etc.).

Traffic Studies and Mitigation Measures

T-P-18 To ensure that citywide traffic service levels are maintained, require a traffic study, as a condition of development, of surrounding arterials, collectors, access roads, and regionally significant roadways for any major project that would require a General Plan amendment, and for projects where the proposed use could create traffic congestion because needed improvements identified by this General Plan would not be completed before project occupancy or are not funded under the CIP.

The City will update its criteria and guidelines for traffic studies to be consistent with the General Plan, and projects that conform to General Plan-specified land use designations and intensities will generally not be required to prepare a traffic study.

T-P-19 Pursue Transportation System Management (TSM) for the mitigation of traffic and parking congestion.

Public transit, traffic management, ride sharing, and parking management can be used to implement TSM strategies.

T-P-20 Work with major employers and the Tulare County Association of Governments (TCAG) to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips and provide better utilization of the transportation system through development and implementation of Transportation Demand Management (TDM) strategies that are tailored to the needs of geographic areas within the city and the time period of traffic congestion.

These may include the implementation staggered work hours, utilization of telecommunications, increased use of ridesharing in the public and private sectors, and provision for bicyclists.

Coordination with the College of the Sequoias

T-P-21 Coordinate with the College of the Sequoias to develop a transportation plan that ensures that the College provides adequate parking areas for students and faculty; improves circulation issues on and adjacent to campus; integrates transit; and incorporates Transportation Demand Management (TDM) strategies such as incentives for ridesharing and facilities for bicyclists.

The plan should minimize negative impacts on surrounding residential areas and on the transportation system.

4.4 PLANNED IMPROVEMENTS

To achieve a balance between existing and future land uses and the carrying capacity of transportation corridors, improvements to the roadway network will be needed. The future Circulation Diagram is illustrated in **Figure 4-1**. Major street improvements consistent with the Circulation Diagram planned for Visalia are listed in **Table 4-5**. These improvements include widening portions of State Route 198 and other major arterials, new bridge crossings, interchange improvements and grade separations. Several new arterial roads will need to be constructed as well as numerous collector and residential streets in the targeted growth areas. The proposed roads are conceptual, subject to further engineering and environmental review. Interchange improvements may be done in coordination with Caltrans and other jurisdictions.

Table 4-5 shows planned improvements where engineering details are known; additional improvements, shown on **Figure 4-1,** will also be needed to accommodate future traffic and ensure a complete street system correlated with future land use. Details on these planned improvements will be defined as the City moves forward with long-range capital improvement programming.

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
NEW ROADWAY CONSTRUCTION PROJECTS			
Avenue 272	Construct new roadway	Rd 122 to Santa Fe; 0.8 mi.	New 2-lane; 1/2 arterial
Avenue 320	Construct new roadway	Demaree to Mooney; 1 mi.	New 2-lane; 1/2 arterial
Mooney Boulevard	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; arterial
Court Street	Construct new roadway	Wren to Riggin; 0.2 mi.	New 2-lane; collector
Tulare Avenue	Construct new roadway	Lovers Lane to McAuliff; 0.5 mi.	New 2-lane; collector
Cain Street	Construct new roadway	Goshen to Douglas; 0.2 mi.	New 2-lane; collector
Kelsey Street	Construct new roadway	Doe to Riggin; 0.7 mi.	New 2-lane; collector
Sunnyview Avenue	Construct new roadway	Kelsey to Clancy; 0.5 mi.	New 2-lane; collector
Virmargo Street	Construct new roadway	Goshen to Houston; 0.5 mi.	New 2-lane; collector
Chinowth Street	Construct new roadway	Avenue 272 to Caldwell; 1 mi.	New 2-lane; collector
Chinowth Street	Construct new roadway	Goshen to Houston; 0.2 mi.	New 2-lane; collector
Court Street	Construct new roadway	Avenue 272 to Ave 276; 0.5 mi.	New 2-lane; collector
Linwood Street	Construct new roadway	Avenue 272 to Ave 276; 0.5 mi.	New 2-lane; collector
Linwood Street	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector
Pinkham Street	Construct new roadway	Avenue 272 to Caldwell; 0.9 mi.	New 2-lane; collector
Roeben Street	Construct new roadway	Caldwell to Whitendale; 0.5 mi.	New 2-lane; collector
Tulare Avenue	Construct new roadway	Shirk to Roeben; 0.5 mi.	New 2-lane; collector
Avenue 276 (Visalia Pkwy)	Construct new roadway	Ben Maddox to Rd 148; 2 mi.	New 2-lane; collector
Avenue 308 (Ferguson)	Construct new roadway	American (Rd 76) to Plaza; 0.5 mi.	New 2-lane; collector
Avenue 316	Construct new roadway	Plaza to Chinowth; 3.2 mi.	New 2-lane; collector
County Center Drive	Construct new roadway	Avenue 272 to Packwood Creek; 0.7 mi.	New 2-lane; collector
County Center Drive	Construct new roadway	Pratt to Avenue 320; 0.5 mi.	New 2-lane; collector
Giddings Street	Construct new roadway	Shannon Pkwy to Avenue 316; 0.3 mi.	New 2-lane; collector
Hurley Avenue	Construct new roadway	Camp to American (Rd 76); 0.3 mi.	New 2-lane; collector
Hurley Avenue	Construct new roadway	Kelsey to Shirk; 1 mi.	New 2-lane; collector
Hurley Avenue	Construct new roadway	Road 76 to Plaza; 0.5 mi.	New 2-lane; collector
"K" Avenue	Construct new roadway	Lovers Lane to McAuliff; 0.5 mi.	New 2-lane; collector
Kelsey Street	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
McAuliff Street	Construct new roadway	Avenue 272 to Caldwell; 1 mi.	New 2-lane; collector
McAuliff Street	Construct new roadway	Walnut to Caldwell; 1 mi.	New 2-lane; collector
Road 76 (American)	Construct new roadway	Ferguson (Ave 308) to Riggin; 0.5 mi.	New 2-lane; collector
Road 76 (American)	Construct new roadway	Hurley to Legacy; 0.2 mi.	New 2-lane; collector
Road 88	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector
Road 96 (Roeben St)	Construct new roadway	Riggin to Avenue 320; 1.4 mi.	New 2-lane; collector
Tulare Avenue	Construct new roadway	Rd 148 to Rd 152; 0.6 mi.	New 2-lane; collector
Doe Avenue	Construct new roadway	Shirk to Roeben; 0.5 mi.	New 2-lane; collector
Shannon Parkway	Construct new roadway	Dinuba Blvd. (SR 63) to Santa Fe; 0.5 mi.	New 2-lane; collector
St John's Parkway	Construct new roadway	McAuliff to Rd 148; 0.5 mi.	New 2-lane; collector
Virmargo Street	Construct new roadway	Houston to St. John's Parkway; 0.4 mi.	New 2-lane; collector
Whitendale Avenue	Construct new roadway	Shirk to Roeben; 0.5 mi.	New 2-lane; collector
Burke Street	Construct new roadway	Roosevelt to Houston; 0.3 mi.	New 2-lane; collector
Oak Ave	Construct new roadway	Tipton to Burke; 0.2 mi	New 2-lane; local
School Ave	Construct new roadway	Tipton to Burke; 0.2 mi	New 2-lane; local
Avenue 276 (Visalia Pkwy)	Construct new roadway	Demaree to Ben Maddox; 3 mi.	New 4-lane; Arterial
Ben Maddox Way	Construct new roadway	Avenue 272 to Caldwell; 0.9 mi.	New 4-lane; arterial
Road 148	Construct new roadway	Houston (SR 216) to St. John's Pkwy; 0.2 mi.	New 4-lane; Arterial
Road 148	Construct new roadway	Mineral King to Houston; 1.1 mi.	New 4-lane; Arterial
Road 148	Construct new roadway	Walnut to Noble; 0.9 mi.	New 4-lane; Arterial
Santa Fe Street	Construct new roadway	Riggin/St John's Parkway to Shannon Parkway; 0.3 mi.	New 4-lane; arterial
Stonebrook Street	Construct new roadway	Avenue 272 to Caldwell; 1 mi.	New 4-lane; collector

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
EXISTING ROADWAY WIDENING PROJECTS			
Houston Ave.	Widen existing roadway	Ben Maddox to Lovers Lane; 1 mi.	Widen from 2 to 4 lanes
Houston Ave.	Widen existing roadway	Santa Fe to Ben Maddox; .5 mi.	Widen from 2 to 4 lanes
Murray Ave.	Widen existing roadway	Giddings to Santa Fe; 1 mi.	Widen from 2 to 4 lanes
Santa Fe St.	Widen existing roadway	K St to Tulare; .9 mi.	Widen from 2 to 4 lanes
Santa Fe St.	Widen existing roadway	Tulare to Houston; 1.5 mi.	Widen from 2 to 4 lanes
Walnut Ave.	Widen existing roadway	Yale to Central; .2 mi.	Widen from 2 to 4 lanes
Akers Street	Widen existing roadway	Ferguson to Riggin; 0.5 mi.	Widen from 2 to 4 lanes
Court St.	Widen existing roadway	Walnut to Tulare; .4 mi.	Widen from 2 to 4 lanes
Ferguson Ave.	Widen existing roadway	Plaza to Kelsey; .5 mi.	Widen from 2 to 4 lanes
Goshen Avenue	Widen existing roadway	Santa Fe to Lovers Lane; 1.6 mi.	Widen from 2 to 4 lanes
McAuliff Street	Widen existing roadway	Mineral King to Mill Creek Pkwy; 0.6 mi.	Widen from 2 to 4 lanes
Santa Fe Street	Widen existing roadway	Caldwell to "K"; 0.7 mi.	Widen from 2 to 4 lanes
Whitendale Avenue	Widen existing roadway	Sallee to Fairway; 0.4 mi.	Widen from 2 to 4 lanes
Santa Fe St.	Widen existing roadway	Caldwell to Ave. 272; 1 mi.	Widen from 2 to 4 lanes
Santa Fe Street	Widen existing roadway	Houston to Riggin; 1 mi.	Widen from 2 to 4 lanes
Shirk Road	Widen existing roadway	Caldwell to SR198; 4 mi.	Widen from 2 to 4 lanes
Shirk Road	Widen existing roadway	SR198 to Goshen Ave; 1 mi.	Widen from 2 to 4 lanes
Walnut Avenue	Widen existing roadway	Cedar to Rd 148; 1.2 mi.	Widen from 2 to 4 lanes
Akers Street	Widen existing roadway	Avenue 276 to Avenue 272; 0.5 mi.	Widen from 2 to 4 lanes
Akers Road	Widen existing roadway	Caldwell to Visalia Pkwy (Ave. 276); .5 mi.	Widen from 2 to 4 lanes
Demaree St.	Widen existing roadway	Pratt to Ave 320; 0.5 mi.	Widen from 2 to 4 lanes
Goshen Ave.	Widen existing roadway	Camp to American (Rd 76); 0.6 mi.	Widen from 2 to 4 lanes
Hwy 63 (Dinuba Blvd)	Widen existing roadway	Riggin to St John's River; 0.6 mi.	Widen from 2 to 4 lanes
Road 148	Widen existing roadway	Ave 272 to Ave 276; 0.5 mi.	Widen from 2 to 4 lanes
Road 148	Widen existing roadway	Ave 276 to Walnut; 1.5 mi.	Widen from 2 to 4 lanes
Shirk Street	Widen existing roadway	Goshen to Riggin; 1 mi.	Widen from 2 to 4 lanes
Walnut Avenue	Widen existing roadway	Shirk to Akers; 1 mi.	Widen from 2 to 4 lanes

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
Walnut Avenue	Widen existing roadway	Rd 148 to Rd 152; 0.5 mi.	Widen from 2 to 4 lanes
Lovers Lane	Widen existing roadway	Ave 272 to Caldwell; 1 mi.	Widen from 2 to 4 lanes
Riggin Avenue	Widen existing roadway	Road 80 to SR 63	Widen from 2 to 4 lanes
Caldwell Avenue	Widen existing roadway	Akers St to Linwood Ave; 0.5 mi.	Widen from 2 to 4 lanes
Plaza Drive	Widen existing roadway	Crowley to Avenue 304 (Goshen)	Widen from 2 to lanes
Mooney Boulevard (SR 63)	Widen existing roadway	Avenue 272 to Avenue 276; 0.5 mi.	Widen from 4 to 6 lanes
BRIDGE STRUCTURE PROJECTS			
Preston Street	New bridge	Preston St at Mill Creek Ditch	New 2-lane bridge; local
McAuliff Street	New over crossing	McAuliff St/SR 198	New bridge structure
Ben Maddox Way	Widen over crossing	Ben Maddox Way/SR 198	Widen bridge structure
TRAFFIC SIGNAL IMPROVEMENT PROJECTS			
Acequia Ave at Bridge St	Not applicable	Not applicable	New Traffic Signal
Acequia Ave at Burke St	Not applicable	Not applicable	New Traffic Signal
Acequia Ave at Santa Fe St	Not applicable	Not applicable	New Traffic Signal
Akers St at Ferguson Ave	Not applicable	Not applicable	New Traffic Signal
Akers St at Riggin Ave	Not applicable	Not applicable	New Traffic Signal
Akers St at Visalia Parkway	Not applicable	Not applicable	New Traffic Signal
Beech Ave at Court St	Not applicable	Not applicable	New Traffic Signal
Ben Maddox Way at Douglas Ave	Not applicable	Not applicable	New Traffic Signal
Ben Maddox Way at K Ave	Not applicable	Not applicable	New Traffic Signal
Bridge St at Center Ave	Not applicable	Not applicable	New Traffic Signal
Bridge St at Main St	Not applicable	Not applicable	New Traffic Signal
Bridge St at Murray Ave	Not applicable	Not applicable	New Traffic Signal
Bridge St at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Burke St at Center Ave	Not applicable	Not applicable	New Traffic Signal
Burke St at Goshen Ave	Not applicable	Not applicable	New Traffic Signal
Burke St at Main St	Not applicable	Not applicable	New Traffic Signal
Burke St at St John's Pkwy	Not applicable	Not applicable	New Traffic Signal

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
Burke St at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Burrel Ave at Mooney Blvd	Not applicable	Not applicable	New Traffic Signal
Cain St at Main St	Not applicable	Not applicable	New Traffic Signal
Cain St at Mineral King Ave	Not applicable	Not applicable	New Traffic Signal
Cameron Ave at County Center	Not applicable	Not applicable	New Traffic Signal
Cameron Ave at Court St	Not applicable	Not applicable	New Traffic Signal
Campus Ave at County Center	Not applicable	Not applicable	New Traffic Signal
Center Ave at Conyer St	Not applicable	Not applicable	New Traffic Signal
Center Ave at SantavFe St	Not applicable	Not applicable	New Traffic Signal
Central St at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Chinowth St at Goshen Ave	Not applicable	Not applicable	New Traffic Signal
College Ave at Lovers Lane	Not applicable	Not applicable	New Traffic Signal
County Center at Ferguson Ave	Not applicable	Not applicable	New Traffic Signal
County Center at Houston Ave	Not applicable	Not applicable	New Traffic Signal
County Center at Packwood Ave	Not applicable	Not applicable	New Traffic Signal
County Center at Riggin Ave	Not applicable	Not applicable	New Traffic Signal
County Center at Royal Oaks Ave	Not applicable	Not applicable	New Traffic Signal
Court St at Ferguson Ave	Not applicable	Not applicable	New Traffic Signal
Court St at Granite/Pearl St	Not applicable	Not applicable	New Traffic Signal
Court St at Paradise Ave	Not applicable	Not applicable	New Traffic Signal
Court St at Whitendale Ave	Not applicable	Not applicable	New Traffic Signal
Crenshaw St at Whitendale Ave	Not applicable	Not applicable	New Traffic Signal
Cypress Ave at Linwood St	Not applicable	Not applicable	New Traffic Signal
Damsen Ave at Demaree St	Not applicable	Not applicable	New Traffic Signal

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
Demaree St at Ferguson Ave	Not applicable	Not applicable	New Traffic Signal
Demaree St at Mill Creek Pkwy	Not applicable	Not applicable	New Traffic Signal
Divisadero St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Divisadero St at Whitendale Ave	Not applicable	Not applicable	New Traffic Signal
Doe Ave at Shirk St	Not applicable	Not applicable	New Traffic Signal
Encina St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Ferguson Ave at Linwood St	Not applicable	Not applicable	New Traffic Signal
Ferguson Ave at Mooney Blvd	Not applicable	Not applicable	New Traffic Signal
Giddings St at Prospect Ave	Not applicable	Not applicable	New Traffic Signal
Giddings St at Riggin Ave	Not applicable	Not applicable	New Traffic Signal
Goshen Ave at Mooney Blvd	Not applicable	Not applicable	New Traffic Signal
Grape St at NE 3rd	Not applicable	Not applicable	New Traffic Signal
Houston Ave at Jacob St	Not applicable	Not applicable	New Traffic Signal
Houston Ave at Mooney Blvd	Not applicable	Not applicable	New Traffic Signal
Houston Ave at Rinaldi St	Not applicable	Not applicable	New Traffic Signal
Hurley Ave at Shirk St	Not applicable	Not applicable	New Traffic Signal
Jacob St at Main St.	Not applicable	Not applicable	New Traffic Signal
K Ave at Pinkham St	Not applicable	Not applicable	New Traffic Signal
Lovers Lane at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Main St at Mineral King Ave	Not applicable	Not applicable	New Traffic Signal
McAuliff St at Noble Ave	Not applicable	Not applicable	New Traffic Signal
McAuliff St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Murray Ave at Santa Fe St	Not applicable	Not applicable	New Traffic Signal

Table 4-5: Planned Circulation System Improvements

Facility	*Project Scope*	*Length*	*Type of Improvement*
Noble Ave at Pinkham St	Not applicable	Not applicable	New Traffic Signal
Riggin Ave at Shirk Rd	Not applicable	Not applicable	New Traffic Signal
Roeben St at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Roeben St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Santa Fe St at Tulare Ave	Not applicable	Not applicable	New Traffic Signal
Santa Fe St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Shirk St at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
Visalia Mall entrance at Walnut Ave	Not applicable	Not applicable	New Traffic Signal
West St at Whitendale Ave	Not applicable	Not applicable	New Traffic Signal
Whitendale Ave at Woodland Dr	Not applicable	Not applicable	New Traffic Signal
Traffic signal interconnection	Connecting existing traffic signals	1.0 mile	Signal interconnect

Source: Omni Means, 2014 & Tulare County Regional Transportation Plan, 2011.

Table 4-6: Typical Street Elements and Widths (Feet)

Street Classification	Right-of-Way Width	Curb-to-Curb Width	Travel Lanes	Parking Lanes	Bicycle Lanes	Median Strip	Planter Strip[1]	Sidewalk
6-Lane Arterial	134′	110′	6 x 12′	None	2 x 6′	26′	5′	7′
4-Lane Arterial	110′	86′	4 x 12′	None	2 x 6′	26′	5′	7′
2-Lane Arterial	74′	50′	2 x 12′	None	2 x 6′	14′	5′	7′
4-Lane Collector	110′	86′	4 x 12′	2 x 8′	2 x 5′	12′	5′	7′
2-Lane Collector	84′	62′	2 x 12′	2 x 8′	2 x 5′	12′	5′	6′
2-Lane Local	60′	40′	2 x 12′	2 x 8′	None	None	5′	5′

1. Minimum planter strip width stated in the table includes the width of the curb.

Source: Dyett and Bhatia, 2010; Omni-Means, 2012.

Street Standards

Typical street widths and design elements in Visalia are listed in **Table 4-6**. All street designs are subject to review and approval by the Public Works Department and additional local street cross-sections may be approved with area plans, development projects or subdivisions to reflect specific design concepts. Although the City of Visalia Design Standards provide guidance on cross-section widths and the City has preserved right-of-way along street corridors for future transportation-related improvements, street designs may vary with regard to raised medians, travel lanes for vehicles, bicycle lanes, parking and sidewalks within these cross sections. Future roadways will be developed on a street by street basis according to direction from the City.

Streetscape Improvements

Complementing improvements to the citywide street system are improvements to the city's streetscape and city identity. These streetscape types create a hierarchy for navigation throughout the city, and provide opportunities for public art, signage, and special landscaping and fixtures. The General Plan introduces four streetscape concepts, shown on the illustrative street sections that follow.

Figure 4-2a shows a "green street" version of a two-lane collector. Green Streets are more intimate in scale and provide greater pedestrian facilities like wide sidewalks, furnishings, curb bulb-outs, and frequent, well-marked crosswalks. This design may be appropriate for streets like Main Street, Murray Avenue, Court Street/Dinuba Boulevard, and Santa Fe Street. The shared travel/bike lane is a departure from the typical street section for a two-lane collector.

Figure 4-2b shows a "green corridor" that supports multimodal circulation, where pedestrians, bicyclists, and vehicles share the right-of-way. Street trees and lighting play an important role on these streets in providing a consistent landscape scheme and shading. Typically, street parking would be provided on a collector but not on an arterial. Arterial versions of green corridors may include major east-west and north-south connections like Goshen Avenue, Walnut Avenue, and Demaree Street. **Figure 4-2c** shows a green corridor in a Downtown context where right-of-way may be more limited and buildings are built to the street edge.

Figure 4-2d shows an arterial that accommodates transit in its own lane, and supports a pedestrian-realm that complements transit. The "transit corridor" may be considered a type of four-lane arterial. This design could be appropriate along the route of a future light rail or bus rapid transit line on Goshen Avenue, South Mooney Boulevard, Main Street or Murray Avenue.

"Gateway boulevards," as shown in **Figure 4-2e**, provide a sense of identity and entrance into the city. Double rows of trees, enhanced plantings, and lighting elements are the primary components of the streetscape design. Gateway boulevards may be an appropriate design for six-lane arterials that could include Shirk Road, Riggin Avenue, Lovers Lane, and Caldwell Avenue.

Figure 4-2a: Green Street (2-Lane Collector)

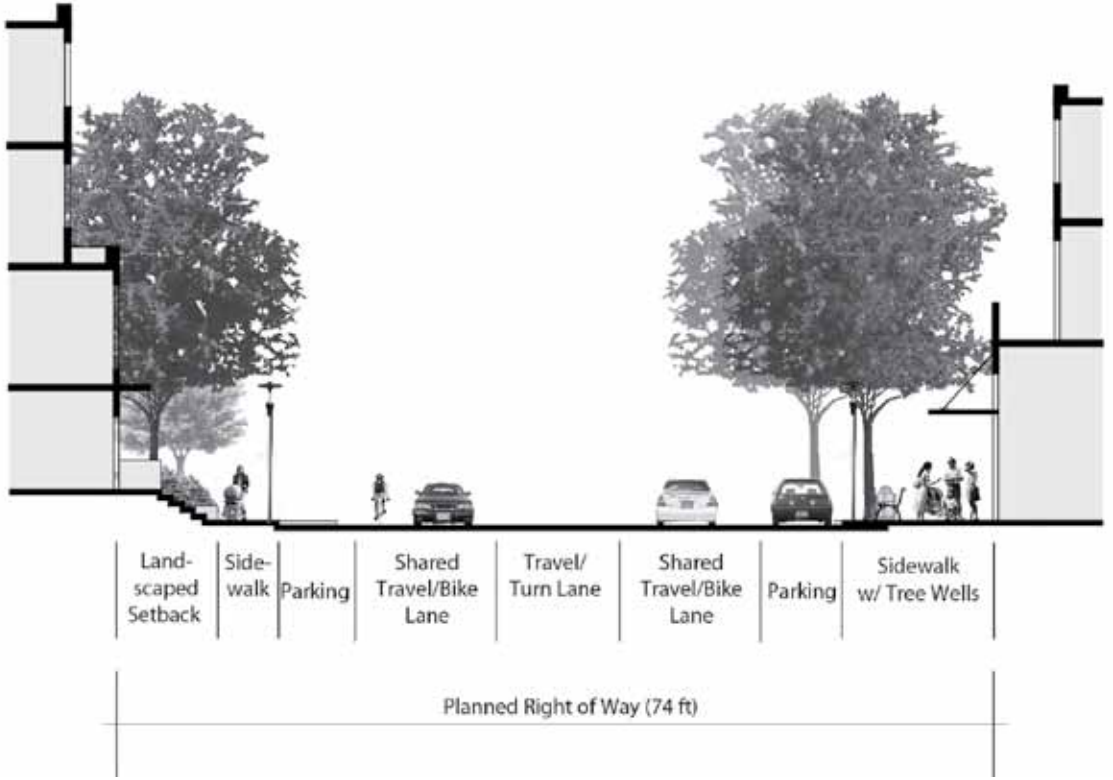


Figure 4-2b: Green Corridor (4-Lane Collector)

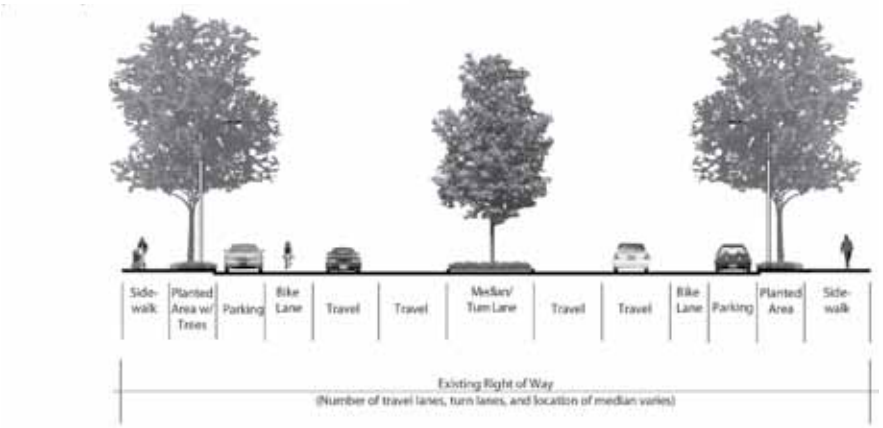


Figure 4-2c: Green Corridor - Downtown (4-Lane Collector)

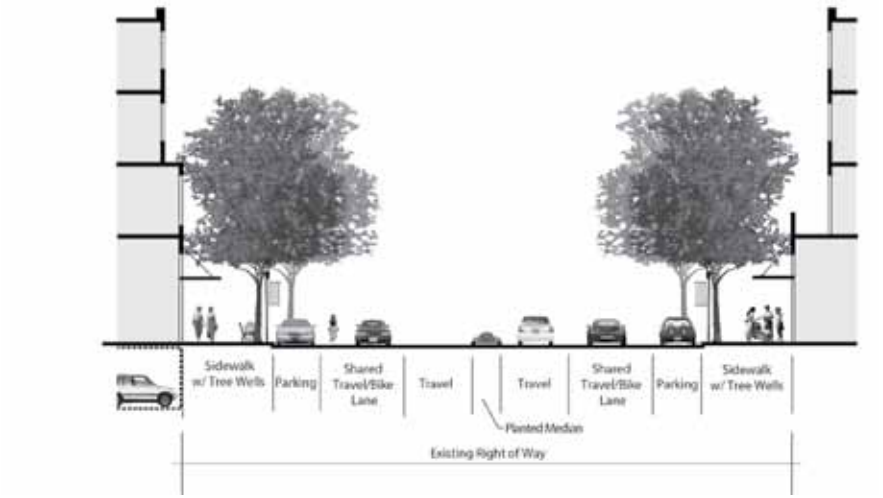


Figure 4-2d: Transit Corridor (4-Lane Arterial, with Transit)

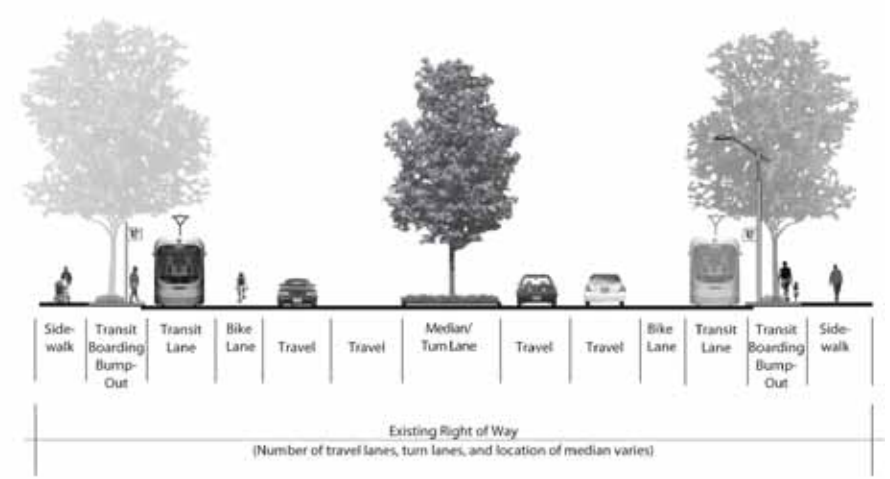
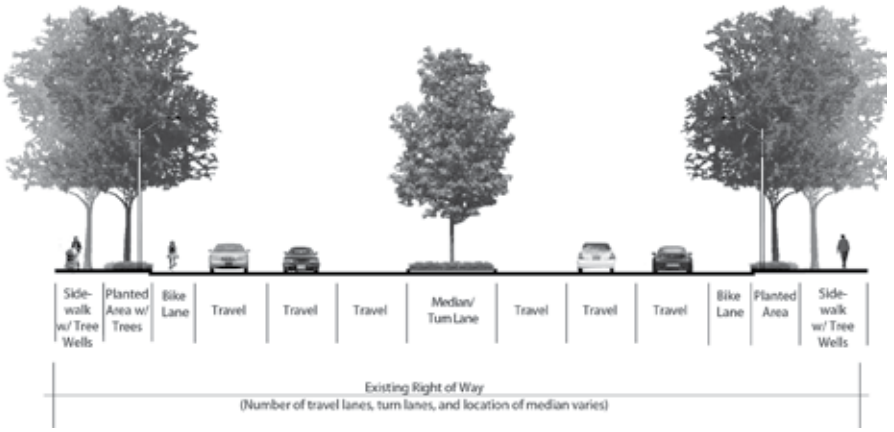


Figure 4-2e: Gateway Boulevard (6-Lane Arterial)



Future Traffic Conditions

The TCAG Regional Travel Demand Forecast Model (RTDFM) was used to identify future traffic volumes along local, collector, and arterial roads and freeways. The model treats these as a system of links, or streets, that connect future land uses—i.e., residential and non-residential uses—based on each city's and the county's general plan. Tulare Council of Governments (TCAG) provided the transportation model forecasts for land use and circulation.

Table 4-7 identifies 2030 forecasted AM and PM peak hour traffic LOS. As shown in **Table 4-7**, all of the study intersections are projected to operate at acceptable LOS with planned improvements, including traffic signalization and lane modifications that will be required during the life of the General Plan.[1] The lane geometry and signal control of each study intersection is shown in **Figure 4-2**.

1 Mitigation measures for these impacts will be evaluated in the Draft EIR. These may include signalization and intersection improvements as well as shifting traffic to alternate routes and an expanded grid—options that the TCAG model cannot evaluate because they are fine-grained, but can be studied with "post-processing" analysis techniques.

Table 4-7: Future Intersection LOS (2030)

			AM Peak Hour		PM Peak Hour	
No.	*Intersection*	*Control Type*	*Delay*	*LOS*	*Delay*	*LOS*
1	Riggin Avenue/Shirk Road	Signal	25.7	C	31.9	C
2	Riggin Avenue/Demaree Street	Signal	22.3	C	26.9	C
3	Riggin Avenue/Giddings Street	Signal	14.8	B	16.6	B
4	Riggin Avenue/Dinuba Boulevard	Signal	29.3	C	37.6	D
5	Ferguson Avenue/Linwood Street	AWSC	18.7	C	12.2	B
6	Goshen Avenue/Plaza Drive	Signal	25.3	C	25.7	C
7	Houston Avenue/Demaree Street	Signal	42.0	D	31.8	C
8	Houston Avenue/Ben Maddox way	Signal	22.6	C	41.0	D
9	Houston Avenue/McAuliff Street	Signal	27.9	C	16.9	B
10	Hurley Street/Plaza Drive	Signal	24.9	C	38.2	D
11	Hillsdale Avenue/Akers Street	Signal	25.6	C	34.2	C
12	Mineral King Avenue/Akers Street	Signal	34.0	C	31.2	C
13	Noble Avenue/Akers Street	Signal	48.3	D	45.5	D

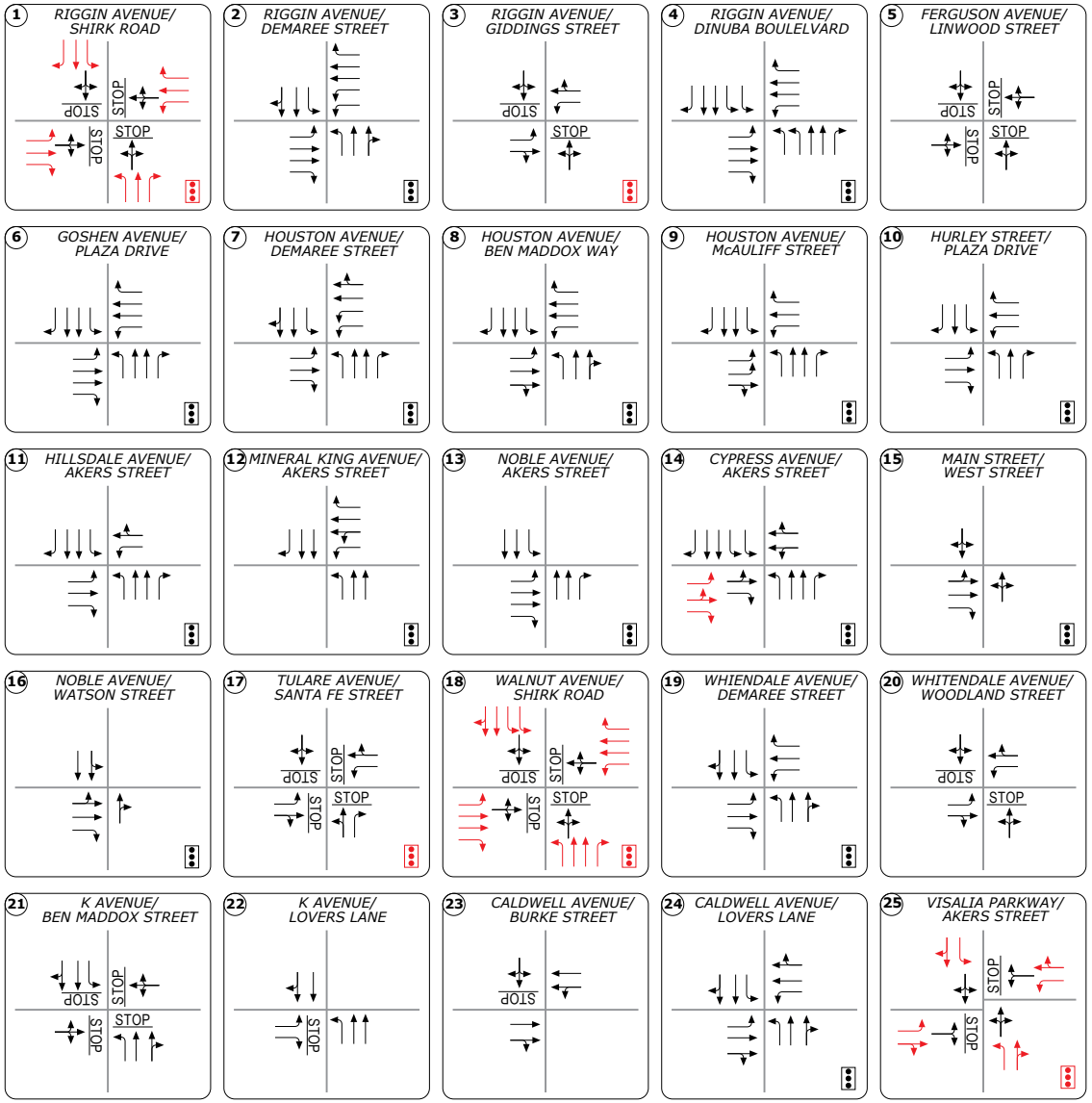
Table 4-7: Future Intersection LOS (2030)

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
14	Cypress Avenue/Akers Street	Signal	20.0	C	30.5	C
15	Main Street/West Street	Signal	6.3	A	7.7	A
16	Noble Avenue/Watson Street	Signal	13.7	B	11.5	B
17	Tulare Avenue/Santa Fe Street	Signal	27.8	C	33.9	C
18	Walnut Avenue/Shirk Road	Signal	30.3	C	25.2	C
19	Whitendale Avenue/Demaree Street	Signal	14.5	B	16.6	B
20	Whitendale Avenue/Woodland Drive	Signal	8.8	A	9.7	A
21	K Avenue/Ben Maddox Way	AWSC	18.8	C	34.1	D
22	K Avenue/Lovers Lane	Signal	14.3	B	14.7	B
23	Caldwell Avenue/Burke Street	Signal	12.1	B	13.3	B
24	Caldwell Avenue/Lovers Lane	Signal	25.5	C	54.5	D
25	Visalia Parkway/Akers Street	Signal	18.0	B	17.4	B

AWSC = All-Way-Stop Control
For Signalized Intersections Average Delay = Average Intersection Delay; For Signalized Intersections LOS = Average Intersection Level-of-Service; AWSC Intersections Average Delay = Worst-Case Intersection Movement Delay; For AWSC Intersections LOS = Worst-Case Movement's Level-of-Service

Source: Omni-Means, 2014.

Figure 4-3: Year 2030 Improved Lane Geometrics and Control



Existing Lane Geometrics
Existing Controls
Mitigated Lane Geometrics
Mitigated Controls

Source: Omni-Means, 2014.

Table 4-8 identifies projected average daily traffic and LOS in 2030 at 33 study roadway segments. Projected 2030 traffic volumes, consistent with the proposed General Plan land uses, are shown below.

Table 4-8: Future Roadway LOS (2030)

Roadway Segment	*Limits*	*No. of Lanes*	*Facility Type*	*AADT*	*LOS*
Akers Street	Rialto – Caldwell Avenue	4	Arterial	15,540	A
Akers Street	Goshen Avenue – Ferguson Ave.	4	Arterial	32,550	D
Caldwell Avenue	Shirk Street - Aspen	4	Arterial	18,300	A
Caldwell Avenue	Ben Maddox Way – Pinkham Ave.	4	Arterial	21,200	B
Center Avenue	Floral Street – Court Street	2	Arterial	3,220	A
County Center	Beech Street – Walnut Avenue	2	Collector	6,110	B
Demaree Street	Damsen - Nicholas	4	Arterial	32,010	D
Demaree Street	Walnut Avenue – Tulare Avenue	4	Arterial	25,800	B
Goshen Avenue	Demaree Street – Chinowth Street	4	Arterial	35,250	D
Main Street	Floral Street – Court Street	2	Collector	3,710	A
Noble Avenue	Pinkham Street – Lovers Lane	2	Arterial	13,000	C
Riggin Avenue	Akers Street – Linwood Street	4	Arterial	19,800	B
Santa Fe Street	Center Avenue – School Street	4	Collector	12,310	B
Santa Fe Street	Walnut Avenue – Tulare Avenue	4	Collector	13.610	B
Shirk Avenue	Goshen Avenue – Doe Avenue	4	Arterial	20,660	A
Shirk Avenue	Walnut Avenue – State Route 198	4	Arterial	24,900	B
Walnut Avenue	Atwood – Linwood Street	4	Arterial	14,400	A
Walnut Avenue	Conyer Street – Court Street	4	Arterial	17,660	A
Walnut Avenue	Yale – Mall Entrance	4	Arterial	13,040	A
Whitendale Avenue	Crenshaw – Linwood Street	2	Collector	6,940	B
Whitendale Avenue	West Street – Court Street	2	Collector	7,060	B
State Route 63	Caldwell Avenue – Walnut Avenue	6	State Route	29,730	A
State Route 63	Walnut Avenue – Tulare Avenue	6	State Route	31,900	A
State Route 63	School Avenue – Murray Avenue	4	State Route	26,630	C
State Route 99	Caldwell Avenue – State Route 198	6	State Route	97,200	C

Table 4-8: Future Roadway LOS (2030)

Roadway Segment	*Limits*	*No. of Lanes*	*Facility Type*	*AADT*	*LOS*
State Route 99	State Route 198 – Avenue 304	6	State Route	84,420	B
State Route 99	Avenue 304 – Betty Drive	6	State Route	84,420	B
State Route 198	**State Route 99 – Akers Street**	**4**	**State Route**	**76,020**	**E**
State Route 198	**Akers Street – Mooney Boulevard**	**4**	**State Route**	**89,890**	**F**
State Route 198	**Mooney Boulevard – Lovers Lane**	**4**	**State Route**	**84,400**	**F**
State Route 198	Lovers Lane – Road 156	4	State Route	42,810	A
State Route 216	Mill Creek Parkway – Douglas Ave.	4	State Route	24,540	B
State Route 216	Lovers Lane – McAuliff Street	2	State Route	15,840	C

Source: TCAG Regional Travel Demand Forecast Model; Omni-Means, 2014.

As shown in **Table 4-8**, the three roadway segments along State Route 198 between State Route 99 and Lovers Lane are projected to operate at unacceptable LOS F conditions at buildout. The State Route 198 Route Concept Report identifies this as a full-build six-lane freeway in the future between Road 80 and Downtown Visalia, which would accommodate traffic projections along these segments. However, State Route 198 between State Route 99 and Road 80 and east of Downtown Visalia to Lovers Lane needs to be a six-lane freeway based upon the TCAG RTDFM forecasts.

Objectives

T-O-5 Plan and develop a transportation system for Visalia that contributes to community livability, recognizes and respects community characteristics, and minimizes negative impacts on adjacent land uses.

Policies

T-P-22 Require all residential subdivisions to be designed to discourage use of local streets as a bypass to congested arterials, and when feasible, require access to residential development to be from collector streets.

Local streets should not serve as "cut-throughs" for through traffic; at the same time, the local street network should still emphasize connectivity and minimize dead-ends and cul-de-sacs, while also providing for neighborhood safety. A finer-grained street grid can provide for more neighborhood connectivity.

T-P-23 Require that all new developments provide right-of-way, which may be dedicated or purchased, and improvements (including necessary grading, installation of curbs, gutters, sidewalks, parkway/landscape strips, bike and parking lanes) other city street design stan-

dards. Design standards will be updaed following General Plan adoption.

Developments must also dedicate or sell necessary rights-of-way when subdivision or development of property adjacent to Circulation Element streets is proposed.

T-P-24 Require that proposed developments make necessary off-site improvements if the location and traffic generation of a proposed development will result in congestion on major streets or failure to meet LOS D during peak periods or if it creates safety hazards.

Such improvements may be eligible for credit or reimbursement from traffic impact fees.

T-P-25 Require that where arterial streets are necessary through residential areas, residential development shall be oriented away (side-on or rear-on) from such streets and be properly buffered so that traffic carrying capacity of the street will be preserved and the residential environment will be protected from the adverse characteristics of the arterial street.

This policy also may apply to collector streets if circumstances warrant.

T-P-26 Require that future commercial developments or modifications to existing developments be designed with limited points of automobile ingress and egress, including shared access, onto major streets.

T-P-27 Work with Caltrans to modify the State Route 198 Route Concept Report to ensure that the facility is designated as a six-lane freeway from Downtown Visalia east to Lovers Lane.

T-P-28 Promote traffic safety by requiring that ingress and egress to shopping centers be carefully designed, with minimal use of left-turn movements into and out of these centers.

Existing points of automobile ingress and egress, including shared access, should be consolidated wherever possible. Left turn movements into commercial areas from divided arterials, must be justified by demonstrating substantial reduction in U-turns at arterial roadways or other benefits.

T-P-29 Require, where possible, that arterials and collectors form four-leg, right-angle intersections. Jogged, offset, and skewed intersections at major streets in near proximity shall be avoided, where possible.

4.5 PUBLIC TRANSIT

The City of Visalia has a variety of public transportation options including fixed route service and demand-responsive systems as well as local and regional systems. Visalia's Transit Division operates numerous mass transportation services, allowing residents to travel conveniently from neighborhoods to major shopping centers, local schools, medical offices, and work sites. The following public transportation systems are available to Visalia residents.

Local Systems

Visalia Transit

Visalia Transit (VT) provides a local fixed route system for Visalia residents and visitors alike. VT operates several fixed routes that serve city residents with some routes serving the outlying cities and communities. VT operates fixed route service 7 days a week with operational hours Monday through Friday between 6:00 a.m. and 9:30 p.m., 9:00 a.m. and 6:30 p.m. on Saturdays, and between 8:00 a.m. and 6:30 p.m. on Sundays. All fixed routes are shown in **Figure 4-3**. The VT fixed routes are summarized below:

- Route 1 – Transit Center, TCAG Transfer, Mooney Boulevard, College of Sequoias, Visalia Mall, Sequoia Mall, downtown Visalia;
- Route 2 –Transit Center, Locust Street/Court Street, Caldwell Avenue, Linwood Avenue, Whitendale Avenue, El Diamante School, S. Akers Street;
- Route 4 – Transit Center, Locust Street/Court Street, Tulare Avenue, Mt. Whitney School, Divisadero School, Kmart Shopping Center, Visalia Medical Clinic;
- Route 5 – Transit Center, Houston Avenue, Valley Oak School, Golden West School, DMV, Walmart;
- Route 6 – Transit Center, Goshen Avenue/Murray Avenue, Save-Mart Shopping Center, Industrial Park, San Joaquin Valley College, Goshen Walnut Avenue, Giddings Street, Whitendale Avenue, Mooney Boulevard, County Center Drive, Linwood Street, Akers Street, Tulare Avenue;
- Route 7A – Transit Center, Lincoln Oval, N. Court Street, W. Riggin Avenue, Demaree Street, W. Ferguson Avenue, W. Houston Avenue, Mooney Boulevard;
- Route 7B – Transit Center, Lincoln Oval, Mooney Boulevard/Houston Avenue, Ferguson Avenue/County Center Drive, Riggin Avenue/Giddings Street, Ferguson Avenue/Court Street, Locust Street/NW 2nd Street;
- Route 8A – Transit Center, Center Avenue, Santa Fe Street/Tulare Avenue, Walmart, Lovers Lane/Mineral King Avenue, Valley Oak Middle School, Ben Maddox Way, St. John's Parkway;
- Route 8B – Transit Center, Ben Maddox Way/St. John's Parkway, Valley Oak Middle School, Lovers Lane/Mill Creek, Walmart, Santa Fe Street/Tulare Avenue;
- Route 9 – Transit Center, Main Street., S. Ben Maddox Way, E. Walnut Avenue, Farmersville, Visalia Road, Exeter;
- Route 10 – Transit Center, Mineral King Avenue, Noble Avenue, Visalia Airport, Goshen,;
- Route 11 –Transit Center, Mineral King Avenue, Noble Avenue, Goshen;
- Route 12 – Caldwell Avenue, Visalia Parkway, Cameron Avenue, S. Court Street, Exeter, Farmersville; and
- Routes 106 and 610.

Visalia's Transit Division operates numerous mass transportation services, allowing residents to travel conveniently from neighborhoods to major shopping centers, local schools, medical offices, and work sites.

Dial-A-Ride Visalia

Visalia Transit provides Dial-A-Ride curb-to-curb paratransit service on a shared-ride, demand-response basis to locations within the city limits of Visalia, Goshen, Farmersville and to/from Exeter. Reduced fares are available for the following groups:

- Certificate of eligibility of ADA Paratransit services
- Visalia City Coach Disabled ID card
- Medicare Card holders
- California DMV Disabled Person or Disabled Veteran ID

Visalia Dial-A-Ride operates between 6:00 a.m. to 9:30 p.m. during the weekdays, from 9:00 a.m. to 6:30 p.m. on Saturdays and from 8:00 a.m. to 6:30 p.m. on Sundays. Fares range from $1.75 to $3.25 per passenger and monthly passes are available with limited service available on holidays.

Visalia Towne Trolley

The Visalia Towne Trolley offers three fixed routes and operates between 7:30 a.m. and 11:00 p.m. depending on the route. During the hours of operation the headway is 10 to 15 minutes. There is a $0.25 service charge to rider with an optional monthly pass for $5.00 and the service limits are bounded by Murray Avenue, Acequia Avenue, Tulare County Courthouse and Santa Fe Street.

The Loop Route

The Loop Route provides a fun, easy, and safe way for all school-aged kids to access community and recreation centers in Visalia, including:

- Manual Hernandez Community Center
- Wittman Center
- Anthony Community Center
- Boys & Girls Club
- Redwood High School Pool
- PAL Center

This program is funded through the City general fund and Measure R and does not receive money from state or federal sources.

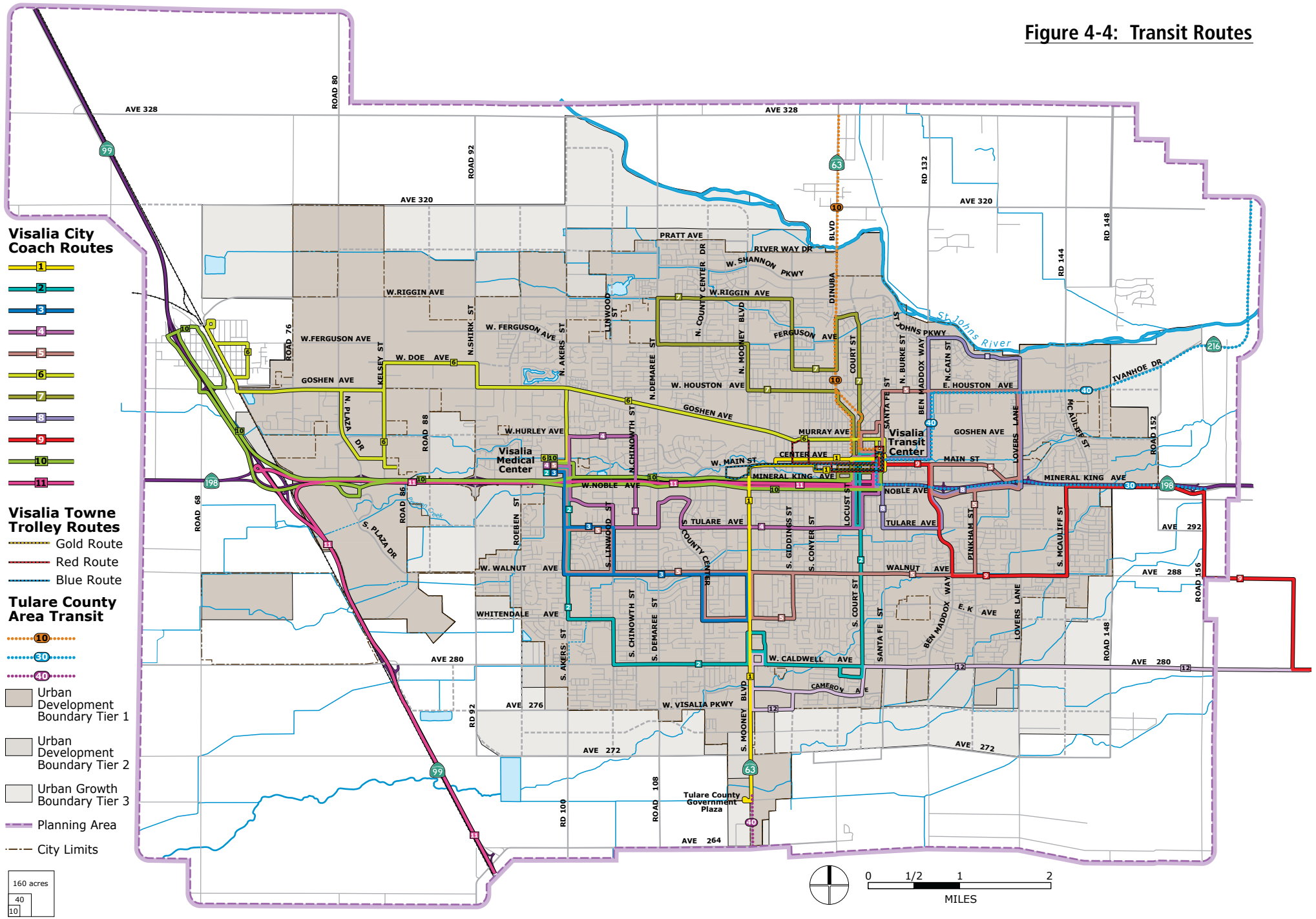
All local transit routes are shown in **Figure 4-4**.

Sequoia Shuttle

The Sequoia Shuttle serves Sequoia and Kings Canyon National Parks during the peak summer visitation period. Sequoia Shuttle departs Visalia five times per day, seven days per week. In Visalia pick-up/drop-off locations include the Holiday Inn, Fairfield Inn, La Quinta, Hampton Inn, Lamplighter Inn, Convention Center (serving Marriott Hotel and Comfort Suites), the Visalia Transit Center, the Barn Service station in Exeter, Three Rivers Comfort Inn, and the Three Rivers Memorial Building. The Sequoia Shuttle offers service between Memorial Day and Labor Day seven days a week, charging $15 per passenger.

The City operates the Sequoia Shuttle routes inside the Park under an agreement with the National Parks Service. Sequoia and Kings Canyon National Parks also provide three internal transit routes to the various attractions.

Figure 4-4: Transit Routes



Regional Systems

Visalia Transit

Visalia Transit regional routes also serve the outlying community of Goshen and the cities of Exeter and Farmersville. These services provide access to medical care facilities, schools, recreational facilities and other amenities offered in Visalia. These routes provide service between the hours of 6:00 a.m. and 9:30 p.m. on weekdays, and between 6:00 a.m. and 6:30 p.m. on Saturdays and Sundays. Regional services are provided through an agreement with Tulare County and the affected communities and schools.

Other services provided for regional travel through Visalia include Orange Belt Stages, Greyhound and Amtrak connections to Hanford (Kings County). Tulare County Area Transit (TCaT) and Kings County Area Regional Transit (KART) provide connections to Visalia Transit Center, local schools, medical centers and other necessities.

Tulare County Area Transit

Tulare County Area Transit (TCaT) provides reliable and convenient public transit service between cities as well as intra-city transit service for many small communities throughout Tulare County. Fixed route services are offered Monday through Saturday, demand-response Dial-A-Ride services are offered Monday through Friday. All ages are welcome to ride all transit service. TCaT offers eight fixed routes that serve a majority of the population centers and communities. Fixed route service is listed below:

- Route 10 – serves north Tulare County with stops at the Justice Complex, Dinuba, Sultana, Cutler, Orosi, Yettem and Seville.
- Route 20 – serves southern Tulare County with stops in Tulare, Tipton, Pixley, Earlimart, Delano and Richgrove.
- Route 30 – serves eastern Tulare County with stops at the Transit Center, in Ivanhoe, Woodlake, Lemon Cove and Three Rivers.
- Route 40 – serves central Tulare County with stops at the County Government Center, in Tulare, Lindsay, Strathmore and Porterville.
- Route 50 – serves northwest Tulare County with stops in Dinuba, London, Traver and Delft Colony.
- Route 60 – serves southeast Tulare County with stops in Lindsay, Strathmore, Plainview and Woodville.
- Route 70 –serves southeast Tulare County will service to Springville and Porterville.
- Route 90 – serves Woodville, Poplar and Porterville.

TCaT regional transit routes are shown in **Figure 4-4.**

Kings Area Rural Transit

Kings Area Rural Transit (KART) is Kings County's complete public rural and urban transportation provider. KART provides daily routes to the cities of Hanford and Lemoore, and regular service to most other communities in the county and daily weekday service to Visalia. In addition, KART provides transportation to Fresno every Monday, Wednesday and Friday and Dial-A-Ride service to eligible residents of Hanford, Lemoore, Armona and Avenal.

All KART bus routes begin and end at the Intermodal transfer facility west of Amtrak on 7th Street in Downtown Hanford. KART fixed routes provide service to Visalia via the Hanford-Visalia route. The Hanford-Visalia route makes stops at the College of Sequoias, Mooney Boulevard/Packwood Creek and Visalia Transit Center.

Orange Belt Stages

Inter-regional, statewide and nationwide bus transportation is provided to the Visalia area via Orange Belt Stages. The Orange Belt Stages depot is located centrally in the Downtown Visalia area, at 425 East Oak Street between Bridge and Santa Fe Streets (the Visalia Transit Center).

Potential Future Transit Improvements

The General Plan identifies potential transit corridors along Goshen Avenue and Mooney Boulevard, with Downtown segments along Murray Avenue and Main Street. These corridors may support high-capacity transit in the form of light rail or bus rapid transit (BRT), and provide a framework for transit-oriented development in Visalia.

Objectives

T-O-6 Work with other agencies and jurisdictions that provide regional public transportation to provide connectivity between Visalia and adjacent jurisdictions.

T-O-7 Develop and maintain a coordinated mass transportation system that will encourage increased transit use through convenient, safe, efficient, and cost-effective services.

Policies

T-P-30 Give high priority to public transportation systems that are responsive to the needs of commuters, the elderly, persons with disabilities, the youth, and low income citizens. Continue to work with transit providers to expand services to these populations and to underserved areas of the City.

T-P-31 Seek cooperation with Tulare County Association of Governments and Visalia City Coach to attain a balance of public transportation opportunities.

These efforts may include the establishment of criteria to implement transit improvements, development of short and long range transit service plans, evaluation and identification of needed corridor improvements, transit centers, and park-and-ride lots with amenities for bicyclists.

T-P-32 Work with transit operators to ensure that adequate transit service facilities are provided, including bus turn-outs along arterials when needed, and bus stop amenities including, but not limited to, lighted shelters, benches and route information signs.

T-P-33 Work with transit operators to establish transit stops adjacent to community and regional parks, senior housing facilities, areas with a high concentration of medical facilities, major employment centers, and major retail and commercial centers.

The Visalia Transit Center is the hub for all of Visalia's bus routes, including the Visalia Towne Trolley and the Sequoia Shuttle.

T-P-34 Develop design and development standards to improve transit service in the community, such as wider sidewalks to accommodate bus stops and bus shelters at intersections; bus pads with shelter and shading vegetation; widened rights-of-way for buses; dedicated bus lanes; on-site transit stops for commercial public, institutional and industrial facilities; and, bus facilities adjacent to day-care centers, schools, and major residential areas.

T-P-35 Schedule public transportation improvement projects in the Capital Improvements Program.

T-P-36 Participate in the planning process for a potential Cross Valley Rail Line, which could provide east-west light rail service from Visalia to Huron and potentially connect to a future High Speed Rail system.

T-P-37 Evaluate the feasibility of a future local light rail system or bus rapid transit (BRT) system in Visalia, which could connect to Tulare to the south and points east and west.

The City should preserve right of way to support the preliminary light rail corridor or BRT system along Goshen Avenue, K Street, Santa Fe Avenue, and other roadways, if either system is judged financially feasible.

T-P-38 Support regional high-speed inter-city rail development and service. Should California High Speed Rail develop a station in Hanford (or elsewhere in Kings or Tulare County), work with the California High Speed Rail Authority to develop local connections coordinated with the train schedule.

4.6 BICYCLES, TRAILS AND PEDESTRIAN CIRCULATION

Bicycling and walking are inexpensive, energy-conserving, healthful, and non-polluting modes of transportation. Visalia's flat topography and dry, moderate climate make choosing to walk or bicycle an attractive transportation option during much of the year.

As pedestrian and bicycle travel is directly related to perceived safety and convenience, providing a safe and complete network of pedestrian and bicycle facilities should continue to increase the use of these modes of travel, especially when crossing heavily traveled roads such as State Routes 63 and State Route 65.

Bikeways and Trails

From a bicyclist's perspective, Visalia is an attractive location to travel. First, the many quiet, tree-shaded side streets offer comfort and safety. Second, the size of the city makes practically all parts accessible by all residents within a 30-minute bicycle ride. During the summer time, when intense summer sun and heat are at their greatest, bicyclists and pedestrians may be deterred. Otherwise, the flat topography and mild rainfall are ideal for commuting and recreational bicycle riding.

Once considered a primarily recreational activity, bicycling is now recognized as a viable alternative to the automobile. Benefits of increased bicycle use include reduced traffic, reduced consumption of fuel resources, improved air quality and reduced health

care costs due to a healthier population. Bicycling is a vital component of improving environmental, traffic and quality of life concerns for Visalia residents.

City of Visalia Bikeway Plan

The City of Visalia Bikeway Plan was adopted in February 2011 and is intended to guide bikeway policies, programs and facility improvements to improve safety, comfort and convenience for all bicyclists in the City of Visalia. The Bikeway Plan serves as a tool for the City in implementing its goal to "provide the means and support bicycling as an alternative mode of transportation for work, errand and recreational trips."

The Bikeway Plan encourages the use of walking and bicycling and recognizes three classes of bikeways:

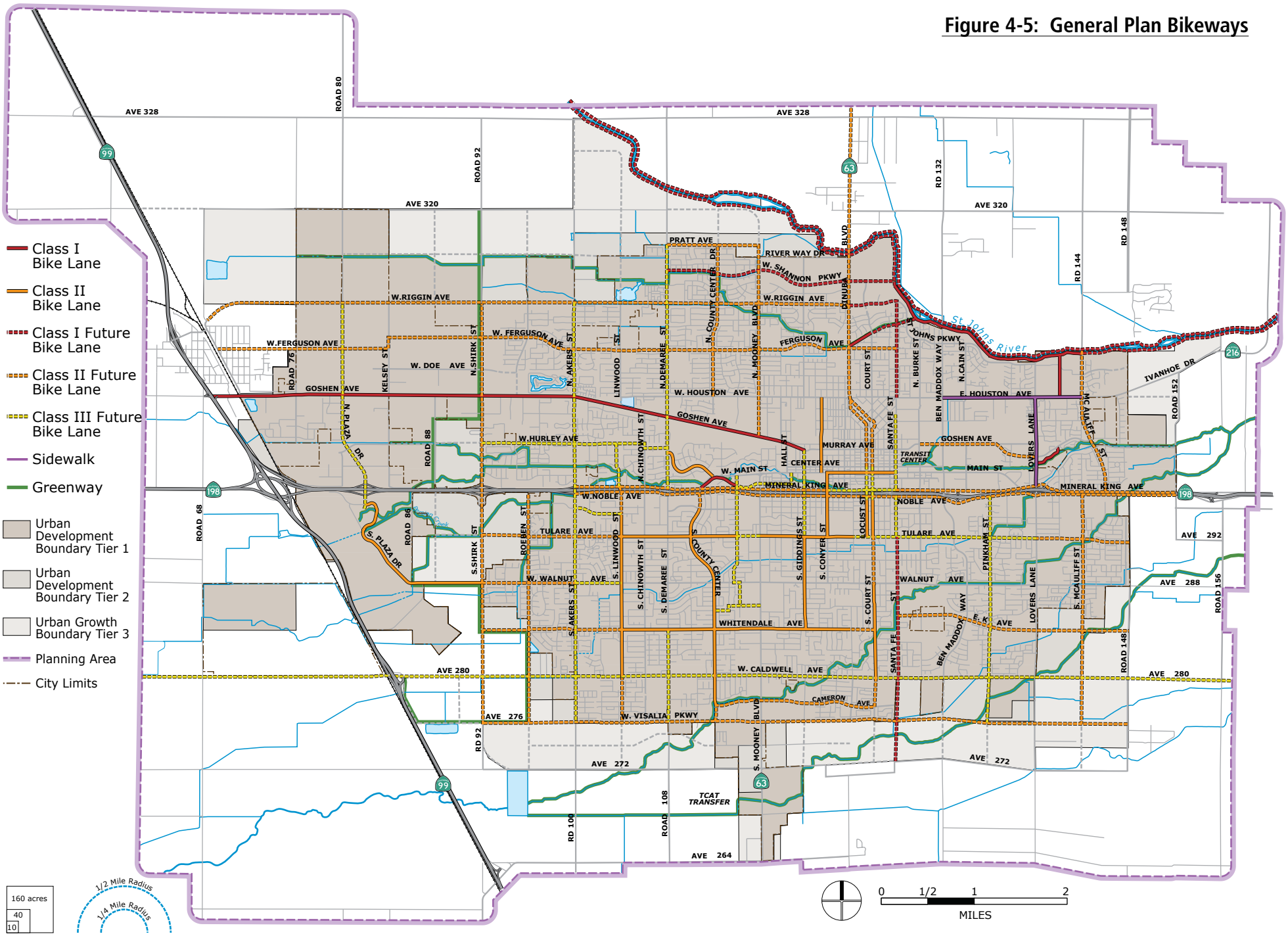
- Bike Path (Class I Bikeway, including paseos and public greenways). Provides a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with cross flows by motorists minimized.
- Bike Lane (Class II Bikeway). Provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through-travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.
- Bike Route (Class III Bikeway). Provides right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.

While the City has yet to fully implement the network presented in the Bikeway Plan, several Class I, II and III facilities exist and are included in the standard cross-section specifications for the various street classifications.

Figure 4-5 shows the bikeway system, with the present facilities in solid lines and the proposed expansion of the system shown in dashed lines. Completion of this network would provide Visalia with a robust bicycle and pedestrian network, linking neighborhoods to parks, schools, employment centers, and other destinations. In addition to the bicycle infrastructure, Visalia offers bicycle racks on buses for most of the Visalia Transit fleet. The bicycle racks extend the bicycles ranges and offer connections to the cities of Woodlake, Tulare, Exeter and Farmersville.

Visalia's flat topography and mild rainfall are ideal for commuting and recreational bicycle riding. The Bikeway Plan encourages the use of walking and bicycling and recognizes three classes of bikeways, including Class I trails (top) and Class II bike lanes (bottom).

Figure 4-5: General Plan Bikeways



Pedestrian Circulation

Walking is the most universal form of travel. Every personal trip involves some element of walking, whether it is a pure pedestrian trip or combined with other modes of travel such as transit, driving or cycling. A pedestrian is legally defined as a person who walks from one place to another either by foot or using an assisted mobility device. Pedestrians include citizens of Visalia and visitors of all ages and abilities. The pedestrian circulation system in Visalia is mainly comprised of sidewalks. Currently, the street environment is mostly auto-oriented with wide roadways and discontinuous sidewalks. In some areas, there are no existing sidewalks or they have fallen into disrepair.

Besides standard sidewalks that have been developed in residential and non-residential areas, several multi-use (bike/pedestrian) trails are found throughout the city, including the St. John's Parkway, Mill Creek, Goshen Avenue, and others. Visalia Unified School District and the City of Visalia are also actively involved in pursuing federal and state Safe Routes to School (SR2S) grant programs that promote adequate pedestrian facilities in neighborhoods near schools. In addition, the City of Visalia is committed to complying with Americas with Disabilities Act (ADA) standards with new development and bringing non-standard ADA facilities into compliance.

While sidewalk capacity is generally not an issue, all areas should be designed to a scale that accommodates pedestrians and bicyclists (in areas where bikeways are unavailable). Improvements in areas within the City that currently have undersized, damaged or no pedestrian facilities should be prioritized so that the pedestrian system will be better connected. The new neighborhood centers should also be designed to be pedestrian friendly. In these areas, wider sidewalks should be considered to accommodate increased flows and to give preferential treatment to pedestrians. Pedestrian-friendly facilities should also be provided near transit stops and adjacent to medium and higher density residential areas.

Objectives

T-O-8 Encourage walking and bicycling in Visalia for commuting and recreational purposes, and for improvement of public and environmental health.

T-O-9 Promote non-motorized accessibility through development of a connected, convenient pedestrian and bikeway network.

T-O-10 Create a safe and feasible pedestrian, trail and bikeway system (on- and off-street) for commuting, recreation and other trips, serving pedestrians and cyclists of all levels.

T-O-11 *Recognize and meet the mobility needs of persons using wheelchairs and those with other mobility limitations.

Policies

Bicycle Transportation and Trails System

T-P-39 Develop bikeways consistent with the Visalia Bikeway Plan and the General Plan's Circulation Element.

- Provide Class I bikeways (right-of-ways for bicyclists and pedestrians separated from vehicles) along the

St. Johns River, Cameron Creek, Packwood Creek, Mill Creek, Modoc Ditch, the Santa Fe Railroad right-of-way and the San Joaquin Railroad right-of-way;

- Provide Class II bikeways (striped bike lanes) along selected collector and arterial streets; and
- Provide Class III bikeways (shared-use bike routes) along selected local, collector, and arterial streets.

New bikeway segments should be designed to fit together with existing bikeways to create a comprehensive, safe system including scenic routes for recreational use.

T-P-40 Develop a community-wide trail system along selected planning area waterways, consistent with the Waterways and Trails Master Plan and General Plan diagrams.

The system will feature greenway trail corridors along the St. John's River, Mill Creek, Packwood Creek, and Cameron Creek, as well as segments of Modoc and Persian creeks. The waterway corridors will provide recreational opportunities, new links between neighborhoods, parks, and Downtown, and a new way of experiencing the City and understanding its natural setting. Waterway corridors will also provide enhanced habitat and storm drainage, as described in the Community Waterways section.

T-P-41 Integrate the bicycle transportation system into new development and infill redevelopment. Development shall provide short term bicycle parking and long term bicycle storage facilities, such as bicycle racks, stocks, and rental bicycle lockers. Development also shall provide safe and convenient bicycle and pedestrian access to high activity land uses such as schools, parks, shopping, employment, and entertainment centers.

T-P-42 Periodically update the City of Visalia Bikeway Plan, as needed.

T-P-43 Develop and maintain an educational program to promote bicycle use and safety.

T-P-44 Increase the safety of those traveling by bicycle by:

- Sweeping and repairing bicycle paths and lanes on a regular basis;
- Ensuring that bikeways are signed and delineated according to Caltrans or City standards, and that lighting is provided as needed;
- Providing bicycle paths and lanes on bridges and overpasses;
- Ensuring that all new and improved streets have bicycle-safe drainage grates and are free of hazards such as uneven pavement or gravel;
- Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike lanes and routes make transitions into or across roadways.

T-P-45 Require that collector streets that are identified to function as links for the bicycle transportation system be provided with Class II bikeways (bike lanes) or signed as Class III bike route facilities.

In such cases, the City may accommodate cyclists on these identified streets by widening the street or eliminating on-street parking if this will not significantly affect parking opportunities for local shoppers or by clearly indicating that bicycles may share travel lanes with automobiles.

T-P-46 Cooperate with other agencies to provide connection and continuation of bicycle corridors between Visalia and surrounding areas.

T-P-47 Seek funding at the private, local, state, and federal levels for the expansion of the bicycle transportation system.

Pedestrian Circulation

T-P-48 Require construction of minimum sidewalk widths and pedestrian "clear zones" consistent with the Complete Streets cross-sections in this General Plan and with the City's Engineering and Street Design Standards for each designated street type.

T-P-49 *Work with the Visalia Unified School District, other school districts, and the County Superintendent of Education, to promote creation of school attendance areas so as to minimize students' crossings of major arterial streets and facilitate students' safe travel to school on foot.

T-P-50 *Provide pedestrian facilities that are accessible to persons with disabilities and ensure that roadway improvement projects address accessibility and use universal design concepts.

T-P-51 Locate sidewalks, pedestrian paths, and appropriate crosswalks to facilitate access to all schools and other areas with significant pedestrian traffic. Whenever feasible, pedestrian paths shall be developed to allow for unobstructed pedestrian flow from within a neighborhood.

T-P-52 Require, where security walls or fences are proposed for residential developments along arterial or collector streets, that pedestrian access be provided between the arterial or collector and the subdivision to allow access to transit vehicles operating on an arterial or collector street.

4.7 PARKING

Parking decisions affect land use and development patterns, as well as travel behavior. The placement and type of parking must accommodate the needs of businesses, pedestrians, motorists, and residents, while not overwhelming the urban design.

Parking regulations can help to provide accessible, attractive, secured parking facilities as well as manage supply. New ideas about parking include shared parking, multi-use parking lots, and the use of pervious surfaces with water runoff filtering systems and the use of solar panels to provide shade as well as energy production.

Pedestrian-friendly streets should be provided near transit stops and adjacent to medium and higher density residential areas (top).

Pedestrian access should be provided between neighborhoods and adjacent arterials or collectors to facilitate walking, including walking to transit (bottom)..

Following the Downtown parking and circulation study, the City will develop flexible parking requirements based on "best practices.".

Downtown Parking

The City of Visalia is currently preparing a Downtown parking and circulation study. The study will analyze traffic patterns, biking, walking, parking and how to improve traffic flow in the 70-block area bounded by Oak Street on the north, Santa Fe Street on the east, Noble Avenue on the south and Conyer on the west. The study is still underway.

Among the items to be studied are: integration of future development with a balanced street/transit/bicycle network; level of service for vehicles on downtown streets; transit ridership; existing bike routes and bike facilities; walkability of Visalia's downtown and how downtown streets will handle growth into 2020 and 2030; and parking accommodations to meet future demand. The study will also consider the option of closing Willis and West streets to through traffic, extending Burke Street, and widening Santa Fe Street to four lanes between Noble and Race streets.

Objectives

T-O-12 Provide adequate parking to accommodate demand while avoiding excessive amounts of surface parking that disrupts the urban fabric of the city.

Policies

T-P-53 Develop flexible parking requirements in the zoning ordinance for development proposals based on "best practices" and the proven potential to reduce parking demand.

These could include projects that integrate transit facilities, incorporate a mix of uses with differing peak parking demand periods (e.g., residential and office), incorporate shared parking or common area parking, or incorporate other Transportation Demand Management (TDM) Strategies for residents or tenants (car-sharing, requiring paid parking, etc.).

T-P-54 Discourage non-residential parking on residential streets by enforcing parking regulations and ensuring that businesses near residential areas are providing adequate on-site parking for their employees and customers.

T-P-55 If certain neighborhoods are particularly negatively affected by "spill-over" parking from businesses or institutions, consider establishing a residential permit parking program.

T-P-56 If needed, create public parking benefit assessment districts to fund consolidated public parking where supported by local businesses.

T-P-57 Amend the Zoning Ordinance to include updated off-street parking and loading area design standards that have multiple benefits and reduce environmental impacts. Strategies may include, but are not limited to:

- Require parking and loading to be provided on the side of or behind buildings, where feasible;
- Promote the use of time and/or motion sensitive parking lot and security lights, where feasible;

- Establish specific standards for perimeter landscaping for parking lots and structures;
- Separate pedestrian pathways from car lanes where feasible;
- Promote the use of porous pavement and low impact drainage features, as appropriate to the site; and
- Restrict use of vacant lots as vehicle parking and outdoor storage of commercial equipment, construction equipment, and similar unless screened from public view.

T-P-58 Continue to implement and update, as necessary, the latest Downtown Parking Management Plan.

A Downtown parking needs assessment and survey should be conducted periodically to determine the adequacy of the Downtown Parking Management Plan and to indicate when the Plan should be updated and how needs might be better balanced.

4.8 GOODS MOVEMENT

Truck Routes

In addition to moving people, the roadway system in Visalia carries a substantial number of trucks moving goods. These routes are designed to allow truck traffic to pass through the City with minimal impact on residential neighborhoods as well as local vehicular and pedestrian traffic.

Existing truck routes within Visalia were developed to minimize neighborhood disturbance and consist primarily of freeways, select expressways, and a few arterial and collector streets. Section 3012 of the Municipal Code has designated certain streets within the city as truck routes. Trucks may use other streets for access to particular destinations, with the exception of certain streets from which they are expressly prohibited. Truck routes may be modified by resolution by the City Council as needed. Designated truck routes are shown in **Figure 4-6**.

Objectives

T-O-13 Provide a transportation system that effectively transports goods via trucks and rail with minimal disruption to residential areas.

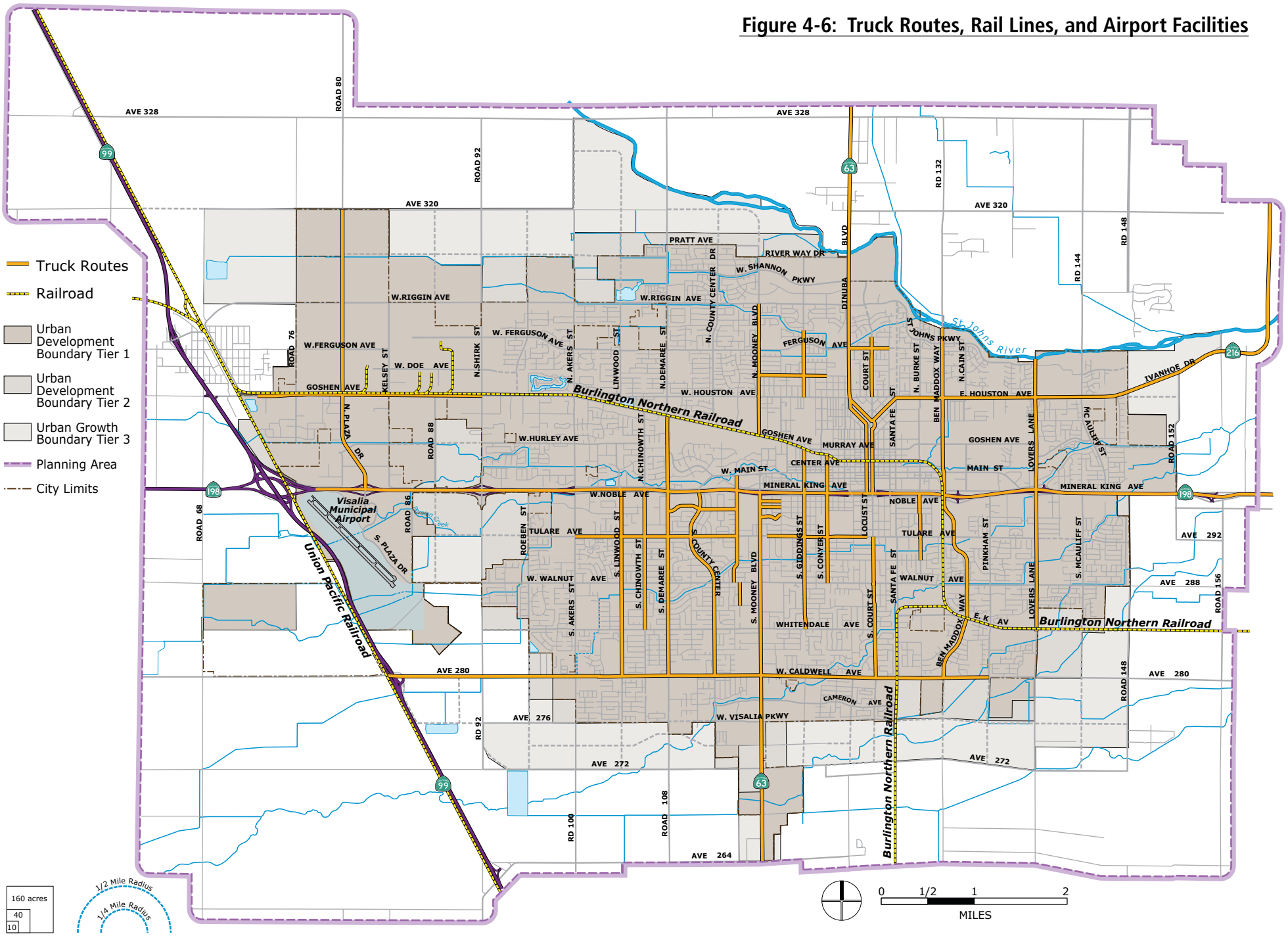
Policies

T-P-59 Identify and sign designated truck routes in Visalia, ensuring that clear signage is provided from freeways to truck routes in the city.

T-P-60 Ensure that truck routes are designed according to the Surface Transportation Assistance Act standards for intersections, pavement, and turning movements.

Truck routes have been identified to minimize neighborhood disturbance, and consist primarily of freeways, expressways, and a few arterial and collector streets.

Figure 4-6: Truck Routes, Rail Lines, and Airport Facilities



T-P-61 Encourage high-security off-street parking areas for tractor-trailer rigs in industrial areas.

T-P-62 Explore possible funding sources, including truck user fees if feasible, to help finance truck route improvements and truck parking areas, at least in part.

T-P-63 Continue to improve and maintain the condition and safety of existing railroad crossings by upgrading surface conditions and installing signs and signals where warranted.

T-P-64 Explore possible funding sources, including truck user fees if feasible, to help finance truck route improvements and truck parking areas, at least in part.

T-P-65 Prohibit the use of arterial streets for freight loading and unloading.

Rail

Union Pacific (UP), Burlington Northern & Santa Fe (BNSF), and San Joaquin Valley Railroad (SJVRR) provide freight service to Visalia, connecting the city and Tulare County to major markets in California (Oakland/San Francisco/San Jose, Sacramento, and Los Angeles) and to other destinations. Routes of principal rail lines in the county are identified in **Figure 4-6**. Freight terminals and service to specific industries are located throughout the county. Though the railroads are reluctant to provide information on the amount of freight originating in the county, it is likely that the predominant mode for freight movements in the county will continue to be by truck in the foreseeable future.

Passenger rail service (six round trips daily) in the county is provided by Amtrak on its San Joaquin service, with the nearest rail station located in Hanford (Kings County). Amtrak provides bus connections to and from Visalia (twice daily) and Goshen Junction (two times daily) to the Hanford station. Either Orange Belt Stages or Greyhound provides service to Amtrak from downtown Visalia.

Cross Valley Rail Project

The Cross Valley Rail improvement project was completed in 2003. The line allows food processing and industrial businesses to ship by rail as opposed to heavy-duty trucks. Funding was made possible through funds from public and private entities, including Congestion Management Air Quality Improvement Program funds from Tulare, Kings, and Fresno County councils of governments, contributions from the Los Gatos Tomato Company and the San Joaquin Valley Air Pollution Control District.

California High Speed Rail

The California High Speed Rail Authority is currently in the process of developing a high-speed rail system that would provide passenger transportation and goods movement services throughout California with 800 miles of track and 24 stations. The first segment of the route will be between Bakersfield and Fresno. Through the EIR process, the preferred alignment and a station has been identified in Kings County.

This station will be the Kings/Tulare Regional Station and will be located near the City of Hanford (Kings County).

The purpose of the high speed rail system is to provide a reliable mode of travel that links the major metropolitan areas of the state and delivers predictable and consistent travel times. According to the Authority, high-speed rail is projected to carry approximately 100 million passengers annually by 2030.

Objectives

T-O-14 Facilitate multi-modal freight access to maximize the range of use potential for large (40-acres) industrial uses and developable parcels.

T-O-15 Develop and maintain a coordinated mass transportation system that will encourage increased transit and rail use through convenient, safe, efficient, and cost-effective services.

T-O-16 Provide a transportation system that effectively transports goods via trucks and rail with minimal disruption to residential areas.

T-O-17 Support continued rail freight service in Tulare County.

Policies

T-P-66 Prior to the approval of subdivision maps or development of identified properties in the Industrial Park, the City shall explore with the project applicant options for acquisition/dedication of right-of-way for freight rail spurs.

T-P-67 Participate in the planning process for a potential Cross Valley Rail Line, which could provide east-west light rail service from Visalia to Huron and potentially connect to a future High Speed Rail system.

T-P-68 Evaluate the feasibility of a future local light rail system or bus rapid transit (BRT) system in Visalia, which could connect to Tulare to the south and points east and west.

The City should preserve right of way to support the preliminary light rail corridor or BRT system along Goshen Avenue, K Street, Santa Fe Street, and other roadways, as depicted on the Land Use diagram if either light rail or BRT is judged financially feasible.

T-P-69 Support regional high-speed inter-city rail development and service. Should California High Speed Rail develop a station in Hanford (or elsewhere in Kings or Tulare County), work with the California High Speed Rail Authority to develop local connections coordinated with the train schedule.

T-P-70 Support continued freight service in Tulare County, specifically development of freight rail service within close proximity to agricultural processing industries.

T-P-71 Continue to participate in and advocate for collaborative efforts to improve railroad transportation facilities and reduce conflicts with the street system.

4.9 AVIATION

Visalia owns and operates the Visalia Municipal Airport (VIS). Located at the south east interchange of State Routes 198 and 99, VIS serves Tulare County, and eastern Kings County. The airport provides commuter airline and general aviation services. The airport has four fixed base operators (FBO) that provide a variety of services including instruction, charter, maintenance and corporate transport. The airport is home to over 150 based aircraft. Those aircraft, along with transient aircraft traffic, generate approximately 80,000 annual operations (take offs and landings). This includes commercial and non-commercial flights. Currently, the airport is primarily used for general aviation operations, including local and itinerant services. Other Airport activities include air taxi service and government operations.

Two passenger air services in the county are provided at the Visalia Municipal Airport. These services include daily non-stop flights from VIS to/from Los Angeles International Airport (LAX) and a daily one-stop flight to/from Las Vegas McCarran International Airport (LAS).

The current facility has one runway (6,559 feet) which is planned to be expanded to 8,000 feet. The airport consists of two parallel taxiways, 17 enclosed hangars, 113 T-hangars, two terminals, aviation fueling station. There are single-engine aircraft, multi-engine craft, jets and gliders based at the facility. In addition to office spaces, free parking is provided at the terminal. Visalia offers two fixed based operators that offer full service maintenance and repair. Two charter service operators are also located in Visalia. A flight school (Western Air) and charter services are also available.

Objectives

T-O-18 Promote the growth and use of the Visalia Municipal Airport to satisfy projected aviation demand for both commercial and non-commercial users.

Policies

T-P-72 Finance improvements to the Airport through user fees and State or federal funds earmarked for general aviation activities and other available financing mechanisms.

T-P-73 Continue to upgrade the service capacity of the Visalia Municipal Airport, as funding appropriations and revenues permit.

T-P-74 Maintain the airport's current and future functionality by limiting land uses and population densities surrounding the airport to those that are permitted under the Zoning Ordinance, as amended for consistency with this General Plan.

Rail right-of-way may allow opportunities to transition to passenger-carrying operations as a part of a regional light rail system (top).

Visalia Municipal Airport is primarily used for general aviation operations, while also providing passenger air service (bottom).

4.10 REGIONAL COORDINATION

The transportation system of a community is vital to its prosperity. Efficient circulation is important to the economic viability and the creation and preservation of a quality of life and the environment. The transportation system is also multi-modal, meaning that it provides numerous alternatives to the automobile; these other modes include transit, pedestrian facilities, bicycle facilities, rail facilities, airport facilities, etc., so that citizens and visitors can access and travel within the city using a number of transportation options to reduce vehicle trips and improve air quality.

The City of Visalia works with other cities, the Tulare County Association of Governments (TCAG), Caltrans and the federal government to assist in transportation planning efforts in the County of Tulare. TCAG and state and federal agencies work with the cities and communities in Tulare County to plan for and fund transportation improvements beneficial to all of its residents.

Objectives

T-O-19 Ensure compatibility between circulation and transportation systems in Visalia and adjacent jurisdictions.

T-O-20 Work with Caltrans to provide an efficient system for regional travel that minimizes impacts on local streets and arterials.

T-O-21 Strive to minimize the effects of local travel on the regional highway system.

Policies

T-P-75 Work with Caltrans to achieve timely construction of programmed freeway, State highway, and interchange improvements.

T-P-76 Work with TCAG, the city of Tulare, and Caltrans to plan and develop State highway improvements between Visalia and Tulare for regional circulation, consistent with Caltrans' Transportation Concept Reports for individual state routes.

T-P-77 Work with TCAG to ensure that the Regional Transportation Plan (RTP) and Sustainable Communities Strategy are consistent with Visalia's Land Use and Transportation policies.

T-P-78 Work with the San Joaquin Valley Air Pollution Control District and TCAG to implement Transportation Control Measures identified in the RTP and air quality implementation plans.

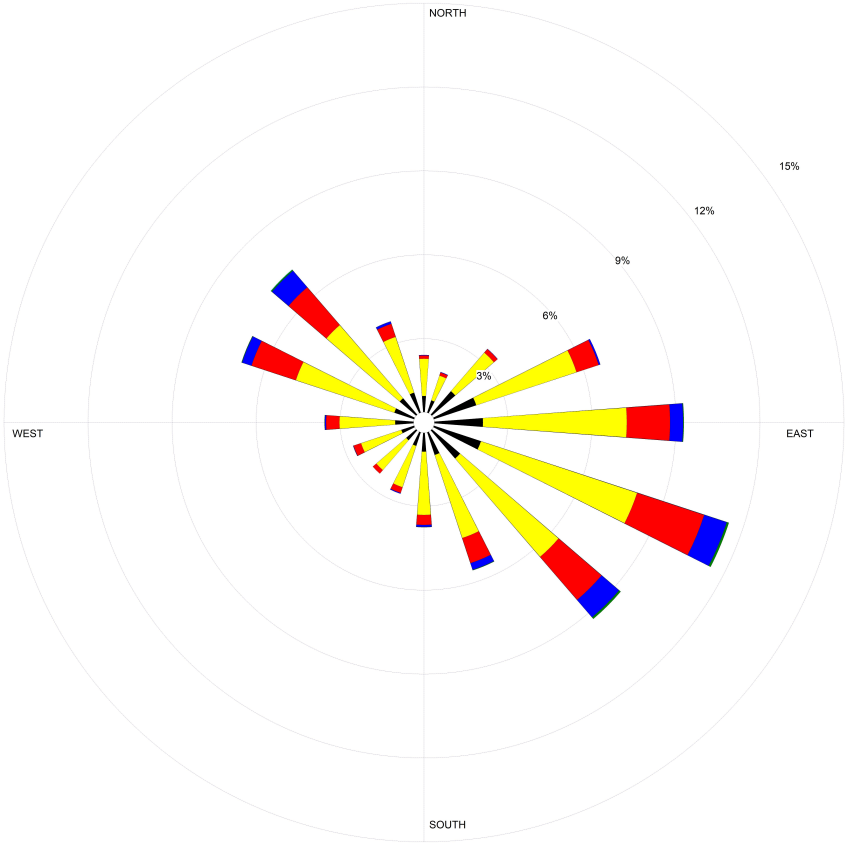
T-P-79 Update traffic study requirements, consistent with Policy T-P-18, to include analysis of impacts on the regional highway system and criteria for mitigation, consistent with this General Plan.

APPENDIX C

Wind Rose Graphics

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



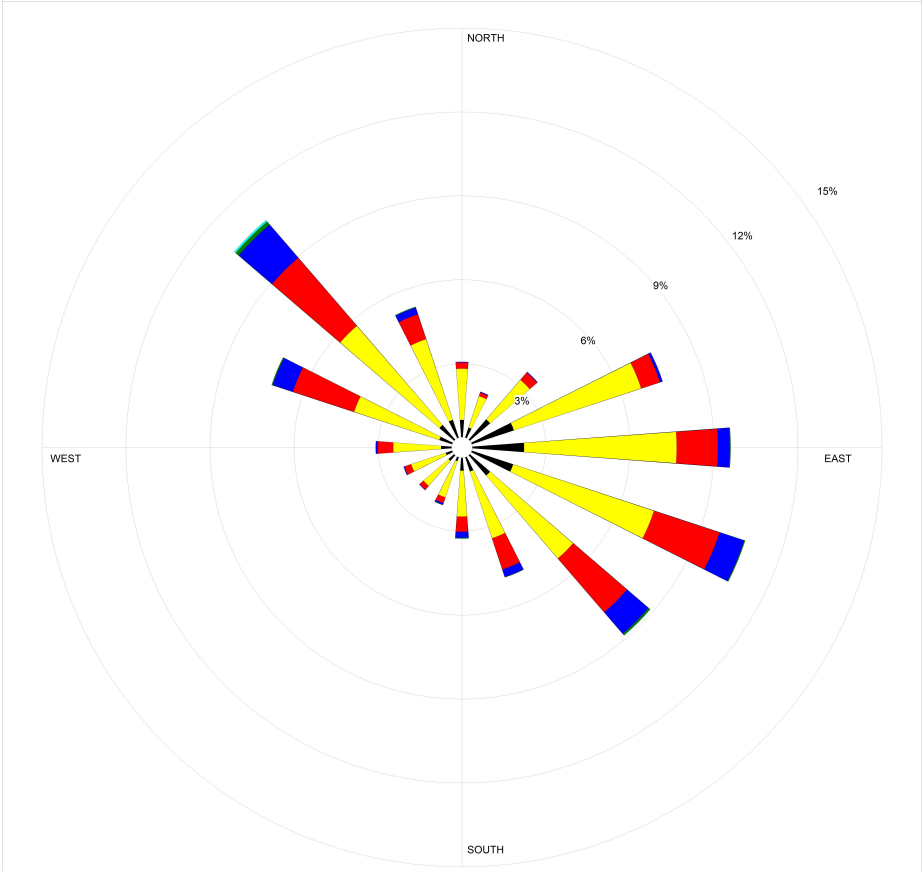
Wind Speed (m/s)

- > 11.06
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
2.72 m/s	**17.00%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Jan 1 - Jan 31 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



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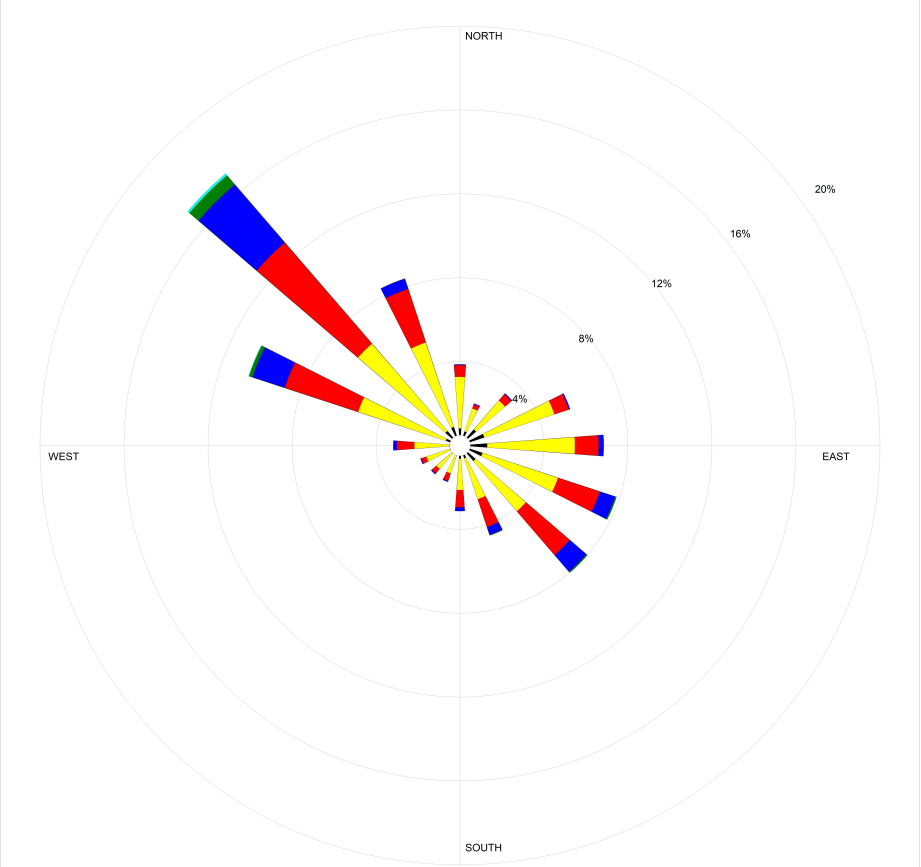
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
2.95 m/s	**13.75%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Feb 1 - Feb 29 Midnight - 11 PM**	

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



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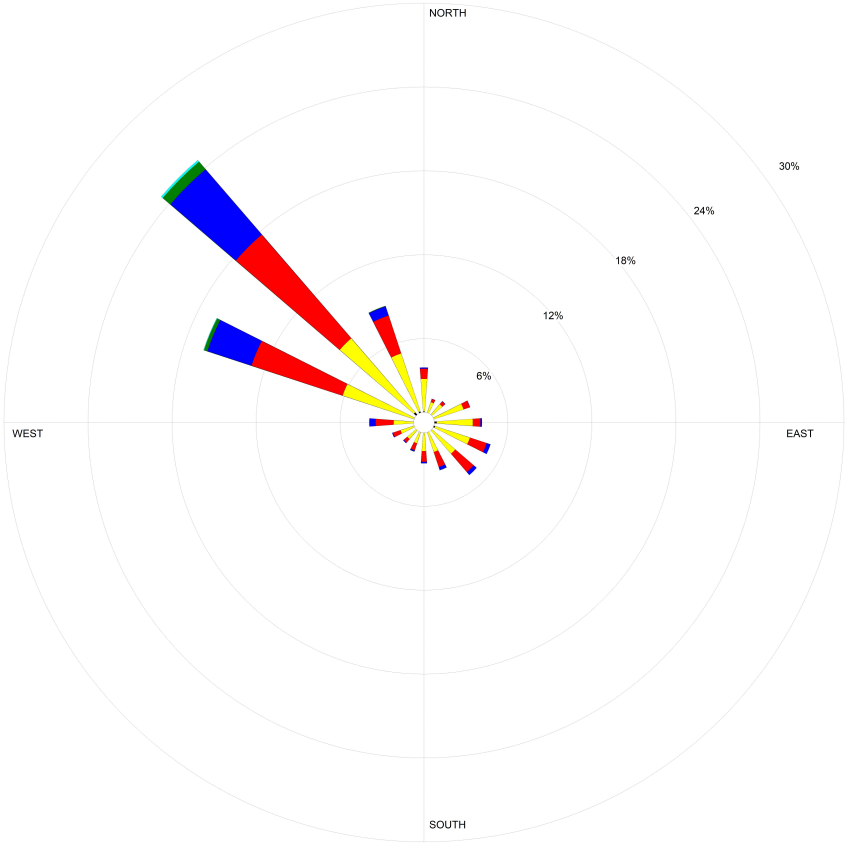
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.34 m/s	**9.90%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Mar 1 - Mar 31 Midnight - 11 PM**	

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



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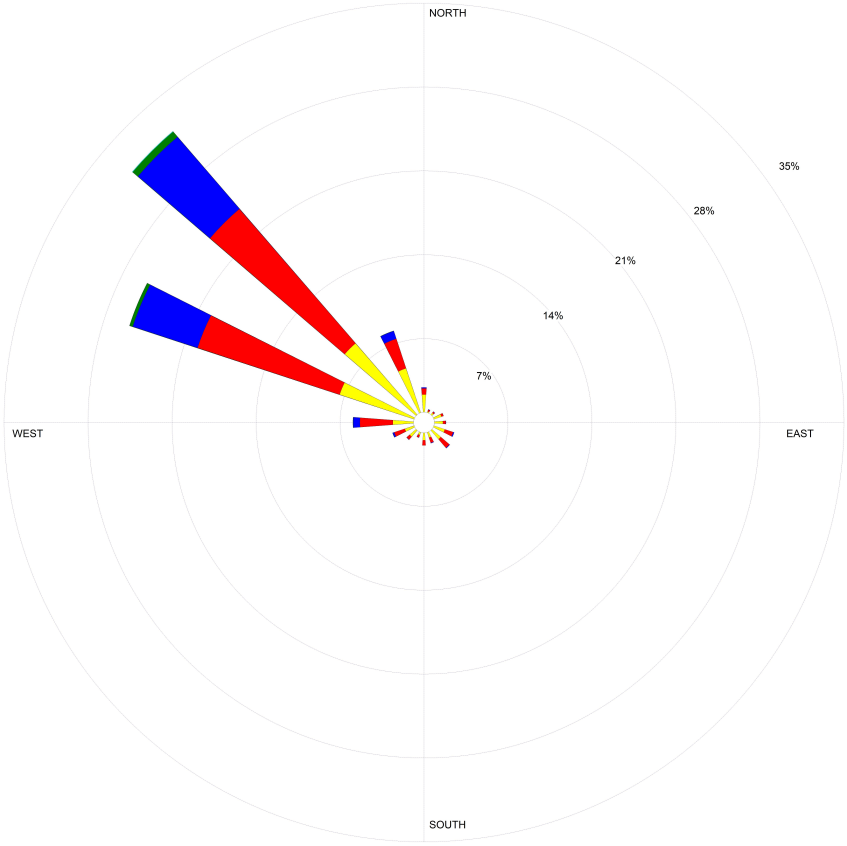
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.61 m/s	**7.53%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Apr 1 - Apr 30 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

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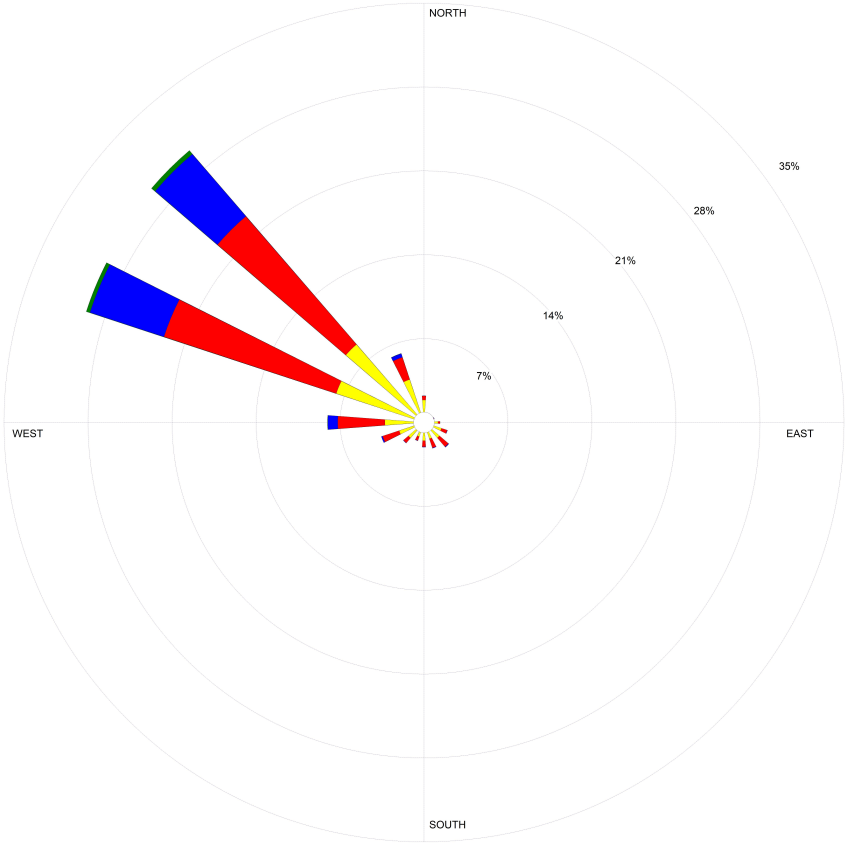
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.90 m/s	**3.87%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 May 1 - May 31 Midnight - 11 PM**	

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



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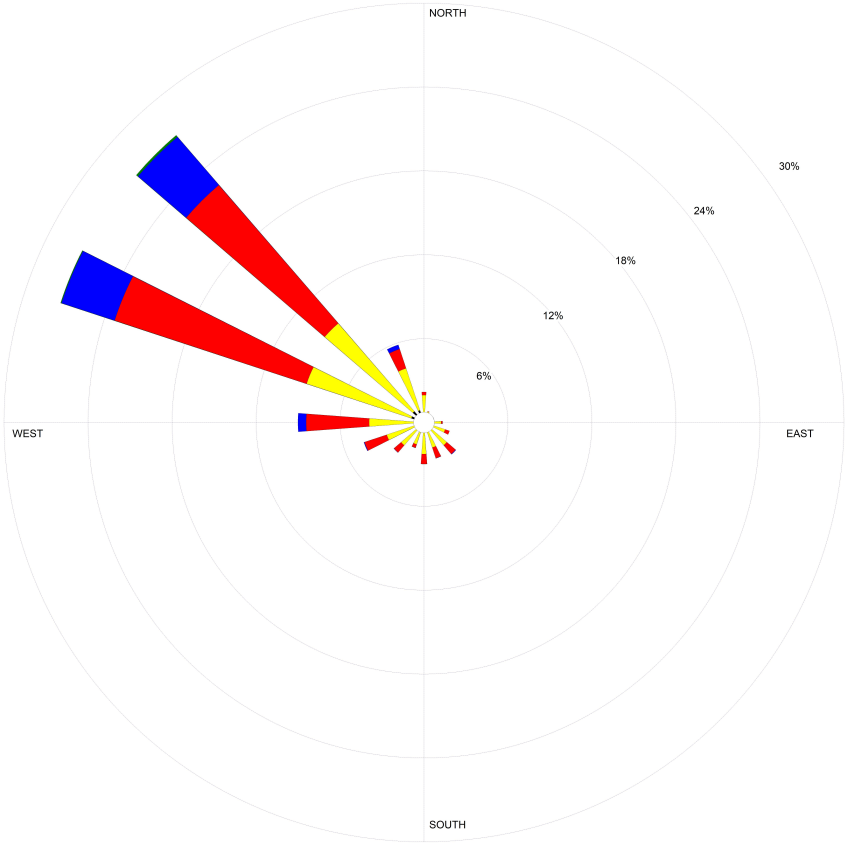
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.92 m/s	**3.36%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Jun 1 - Jun 30 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



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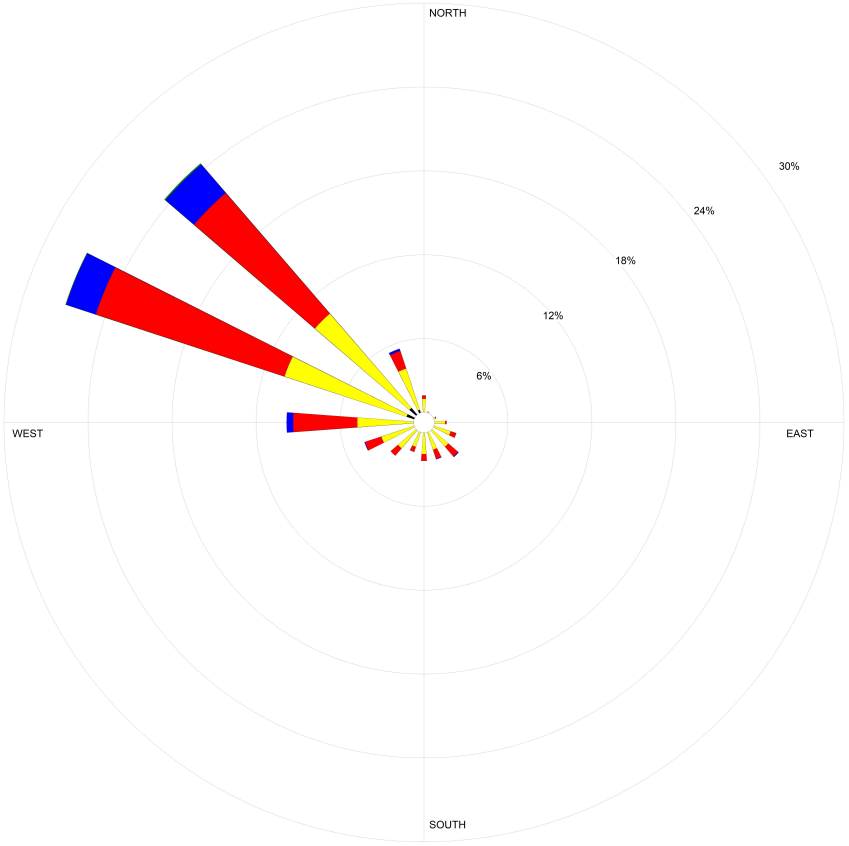
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.59 m/s	**4.98%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Jul 1 - Jul 31 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

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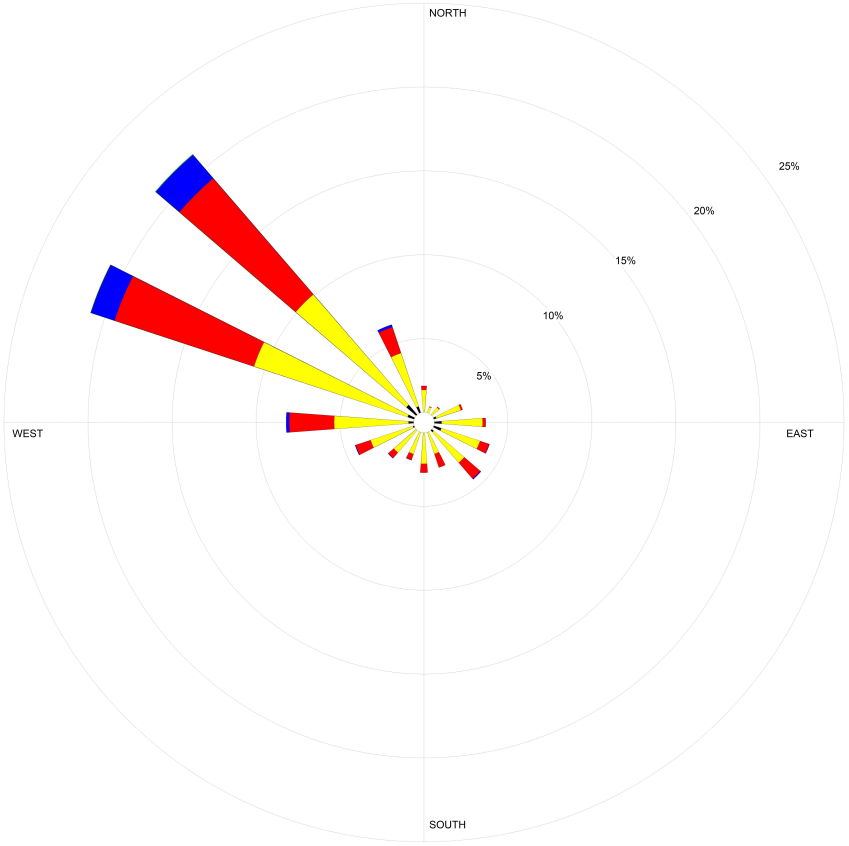
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.34 m/s	**6.08%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Aug 1 - Aug 31 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

- > 11.06
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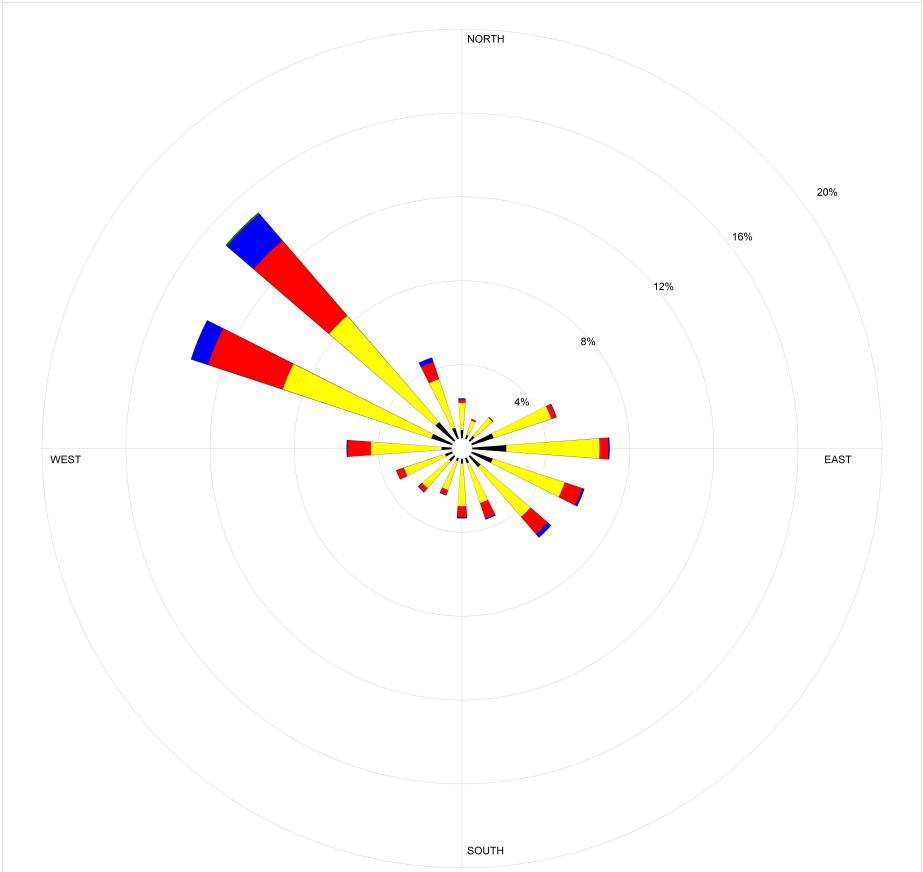
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
3.07 m/s	**9.10%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Sep 1 - Sep 30 Midnight - 11 PM**	

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

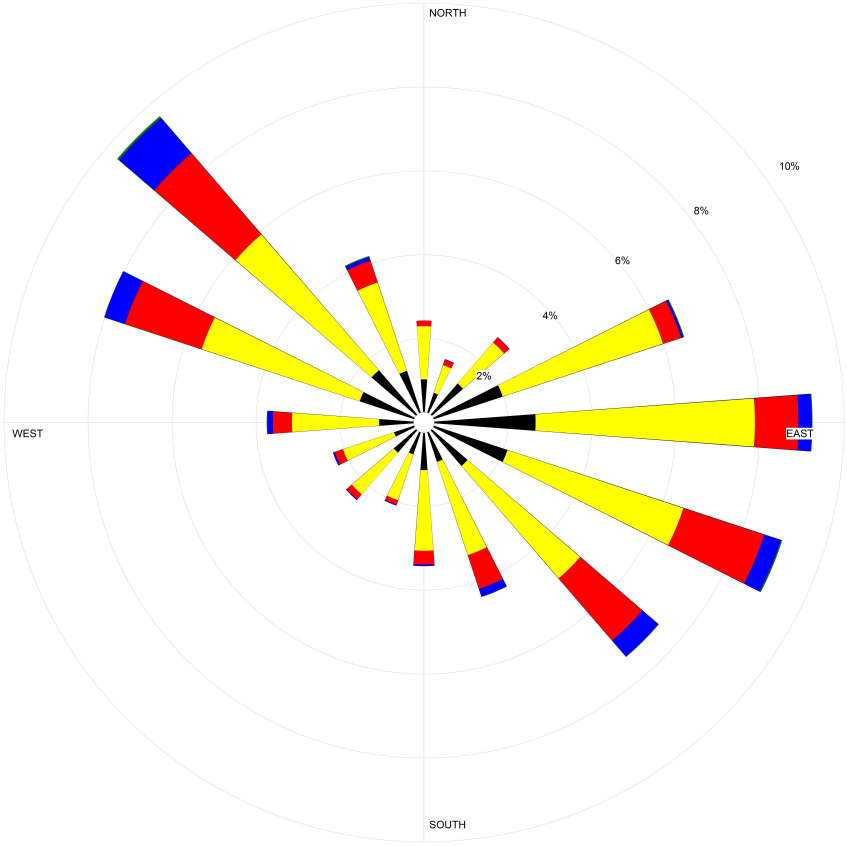
- > 11.06
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
2.76 m/s	**16.69%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Oct 1 - Oct 31 Midnight - 11 PM**	

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

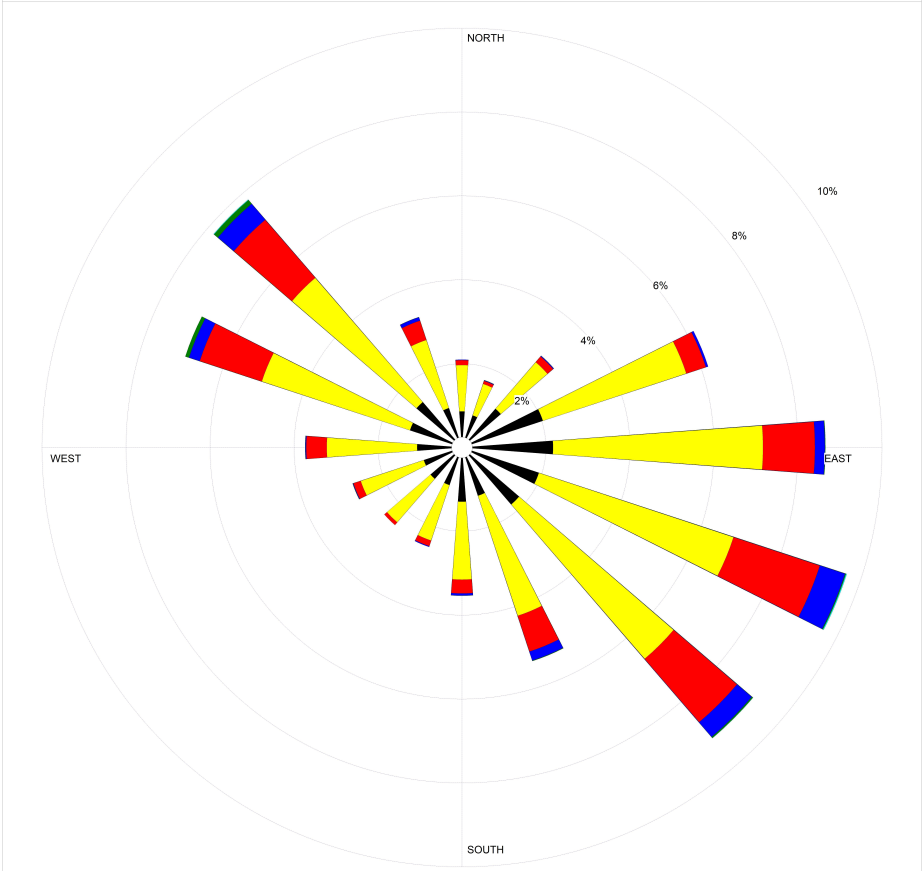
- > 11.06
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
2.67 m/s	**20.94%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Nov 1 - Nov 30 Midnight - 11 PM**	

WRPLOT View 3.5 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #93193 - FRESNO/AIR TERMINAL, CA



Wind Speed (m/s)

- > 11.06
- 8.49 - 11.06
- 5.40 - 8.49
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER	DATE	COMPANY NAME
Sara West	**8/19/2002**	**USDA-ARS**
DISPLAY	UNIT	COMMENTS
Wind Speed	**m/s**	
AVG. WIND SPEED	CALM WINDS	
2.63 m/s	**21.36%**	
ORIENTATION	PLOT YEAR-DATE-TIME	
Direction (blowing from)	**1961 Dec 1 - Dec 31 Midnight - 11 PM**	

APPENDIX D

ISR Fee Worksheets

Emissions Estimator Worksheet

9/30/2021

Applicant/Business Name:	**Iron Ridge Development**
Project Name:	**Iron Ridge Development**
Project Location:	**Visalia, CA**
District Project ID No.:	

Project Construction Emissions

If applicant selected Construction Clean Fleet Mitigation Measure - Please select "Yes" from dropdown menu: No ▼

			NOx					PM10					
Project Phase Name	ISR Phase	Construction Start Date	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Emission Reductions Required by Rule[5]	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Emission Reductions Required by Rule[5]
1	1	12/1/2021	3.7586	3.7586	0.0000	0.7517	0.7517	1.1262	1.1262	0.0000	0.5068	0.5068
	2				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
		Total	**3.7586**	**3.7586**	**0.0000**	**0.7517**	0.7517	**1.1262**	**1.1262**	**0.0000**	**0.5068**	0.5068

Total Achieved On-Site Reductions (tons)

ISR Phase	NOx	PM10
1	0.0000	0.0000
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**0.0000**	**0.0000**

Project Operations Emissions (Area + Mobile)

			NOx						PM10					
Project Phase Name	ISR Phase	Operation Start Date	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Total Emission Reductions Required by Rule[6]	Average Annual Emission Reductions Required by Rule[7]	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Total Emission Reductions Required by Rule[6]	Average Annual Emission Reductions Required by Rule[7]
1	1	1/1/2026	2.0492	2.0492	0.0000	5.1230	5.1230	0.5123	2.4424	2.4424	0.0000	12.2120	12.2120	1.2212
	2				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
		Total	**2.0492**	**2.0492**	**0.0000**	**5.1230**	**5.1230**	**0.5123**	**2.4424**	**2.4424**	**0.0000**	**12.2120**	**12.2120**	**1.2212**

Total Required Off-Site Reductions (tons)

ISR Phase	NOx	PM10
1	5.8747	12.7188
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**5.8747**	**12.7188**

Notes:

TPY: Tons Per Year

[1] **Unmitigated Baseline:** The project's baseline emissions generated with no on-site emission reduction measures.

[2] **Mitigated Baseline:** The project's baseline emissions generated after on-site emisison reduction measures have been applied.

[3] **Achieved On-site Reductions:** The project's emission reductions achieved after on-site emission reduction measures have been applied.

[4] **Required Off-site Reductions:** The project's remaining emission reductions required by Rule 9510 if on-site emission reduction measures did not achieive the required rule reductions.

[5] **Emission Reductions Required by Rule:** The project's emission reductions required (20% NOx and 45% PM10) for construction from the unmitigated baseline.

[6] **Total Emission Reductions Required by Rule:** The project's emission reductions required (33.3% NOx and 50% PM10) for operations from the unmitigated baseline over a 10-year period.

[7] **Average Annual Emission Reductions Required by Rule:** The project's total emission reduction for operations required by Rule 9510 divided by 10 years.

Fee Estimator Worksheet

9/30/2021

Applicant/Business Name:	**Iron Ridge Development**
Project Name:	**Iron Ridge Development**
Project Location:	**Visalia, CA**
District Project ID No.:	

NOTES:
(1) The start date for each ISR phase is shown in TABLE 1.
(2) If you have chosen a **ONE-TIME** payment for the project, then the total amount due for ALL PHASES is shown under TABLE 2.
(3) If you have chosen a **DEFERRED** payment schedule or would like to propose a **DEFERRED** payment schedule for the project, the total amount due for a specific year is shown in TABLE 3 according to the schedule in TABLE 1.
* If you have not provided a proposed payment date, the District sets a default invoice date of 60 days prior to start of the ISR phase.

If applicant selected Fee Deferral Schedule - Please select "Yes" from dropdown menu	No ▼

TABLE 1 - PROJECT INFORMATION

Project Phase Name	ISR Phase	Start Date per Phase	Scheduled Payment Date*
1	1	12/1/21	FALSE
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
TOTAL (tons)			

TABLE 2 - No Fee Deferral Schedule (FDS)

Pollutant	Required Offsite Reductions (tons)
NOx	5.8747
PM10	12.7188
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	5.8747
PM10	12.7188

Offsite Fee by Pollutant ($)	NOx	$54,928
	PM10	$114,609
Administrative Fee ($)		$6,781.48
Offsite Fee ($)		$169,537.00
Total Project Offsite Fee ($)		$176,318.48

Rule 9510 Fee Schedule ($/ton)		
Year	Nox	PM10
2021 and Beyond	$9,350	$9,011

TABLE 2 - NO FDS

2021
5.8747
12.7188
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
5.8747
12.7188

TABLE 3 - APPROVED FEE DEFERRAL SCHEDULE (FDS) BY PAYMENT YEAR

2021	2022	2023	2024	2025	2026	2027	2028	2029
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
$0	$0	$0	$0	$0	$0	$0	$0	$0
$0	$0	$0	$0	$0	$0	$0	$0	$0
$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	$0.00	$0.00
			$0.00					