



CITY OF FOWLER 2040 GENERAL PLAN

DRAFT ENVIRONMENTAL IMPACT REPORT

DECEMBER 2022

SCH NO. 2021110053

Prepared For:

The City of Fowler
Community and Economic Development Department
128 S. 5th Street
Fowler, CA 93625

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ACRONYMS AND ABBREVIATIONS

2025 GPDraft 2025 General Plan
2040 GP2040 General Plan
AB	..... Assembly Bill
ADA	..... Americans with Disabilities Act
ADT	..... Average Daily Traffic
ADU	.....Accessory Dwelling Unit
AFV	.....Alternative Fuel Vehicles
AHERA	..... Asbestos Hazard Emergency Response Act
ALUC	..... Airport Land Use Commission
ALUCP	..... Airport Land Use Compatibility Plan
ANSI	.....Acoustical National Standards Institute, Inc.
ATCM	..... Airborne Toxic Control Measure
BMP	..... Best Management Practice
CAA	.....Clean Air Act
CAAQS	.....California Ambient Air Quality Standards
CAFE	..... Corporate Average Fuel Economy
Cal/OSHA	..... California Occupational Safety and Health Administration
CalEEMod	.....California Emissions Estimator Model
CalEPA	..... California Environmental Protection Agency
CAL FIRE	..... California Department of Forestry and Fire Prevention
CALGreen	..... California Green Building Code Standards
CalRecycle	.....California Department of Resources Recycling and Recovery
Caltrans	..... California Department of Transportation
CARB	.....California Air Resources Board
CBC	..... California Building Code
CCAA	..... California Clean Air Act
CCAR	.....California Climate Action Registry
CCR	..... California Code of Regulations
CDFW	..... California Department of Fish and Wildlife
CDHS	..... California Department of Health Services
CDMG	.....California Division of Mines and Geology
CEC	..... California Energy Commission

CEQA	.....California Environmental Quality Act
CERCLA	..... Comprehensive Environmental Response, Compensation, and Liability Act
CESA	.....California Endangered Species Act
C.F.R.	..... Code of Federal Regulations
CGS	.....California Geological Survey
CH ₄	..... Methane
CID	..... Consolidated Irrigation District
CGP	..... Construction General Permit
CHRIS	..... California Historical Resources Information System
CKH Act	..... Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CMP	..... Congestion Management Program
CNDDDB	..... California Natural Diversity Database
CNEL	.....Community Noise Equivalent Level
CNPS	..... California Native Plant Society
CO	..... Carbon Monoxide
CO ₂	.....Carbon Dioxide
CO ₂ e	..... Carbon Dioxide Equivalent
County	..... Fresno County
CRHR	..... California Register of Historical Resources
CUPA	.....Certified Unified Program Agency
CVFPP	.....Central Valley Flood Protection Plan
CWA	..... Clean Water Act
CWHR	..... California Wildlife Habitat Relationship
dB	.....Decibels
dBA	.....A-Weighted Decibels
DEH	..... (Fresno County) Department of Environmental Health
DEIR	..... Draft Environmental Impact Report
DOC	..... California Department of Conservation
DOT	.....Department of Transportation
DPM	..... Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	..... Diesel Risk Reduction Plan
DTSC	..... California Department of Toxic Substance Control
DUC	..... Disadvantaged Unincorporated Communities
EIR	..... Environmental Impact Report

EMFAC	.....	Emissions Factor
EO	.....	Executive Order
EPACT	.....	Energy Policy Act
EPCRA	.....	Emergency Planning and Community Right-to-Know Act
ESA	.....	Endangered Species Act
FCOG	.....	Fresno Council of Governments
FCRTA	.....	Fresno County Rural Transit Agency
FGC	.....	Fish and Game Code
FHWA	.....	Federal Highway Administration
FICON	.....	Federal Interagency Committee on Noise
FIFRA	.....	Federal Insecticide, Fungicide, and Rodenticide Act
FIP	.....	Federal Implementation Plan
FIRM	.....	Flood Insurance Rate Map
FMC	.....	Fowler Municipal Code
FMMP	.....	Farmland Mapping and Monitoring Program
Fowler	.....	City of Fowler
FPPA	.....	Farmland Protection Act
FSZ	.....	Farmland Security Zone
FTA	.....	Federal Transit Administration
GC	.....	Government Code
GHG	.....	Greenhouse Gas
GP	.....	General Plan
GSA	.....	Groundwater Sustainability Agency
GSP	.....	Groundwater Sustainability Plan
GWP	.....	Global Warming Potential
HAP	.....	Hazardous Air Pollutant
HAZWOPER	.....	Hazardous Waster Operations and Emergency Response
HFC	.....	Hydrofluorocarbons
HSC	.....	Health and Safety Code
HVAC	.....	Heating, Ventilation, & Air Conditioning
Hz	.....	Hertz
in/sec	.....	Inches per Second
IPCC	.....	Intergovernmental Panel on Climate Change
ITS	.....	Intelligent Transportation System

IWMP	.....	Integrated Waste Management Plan
kBTU	.....	Kilo British Thermal Units
kW	.....	Kilowatt
kWh	.....	Kilowatt Hour
LAFCo	.....	Local Agency Formation Commission
Ldn	.....	Day-Night Level
Leq	.....	Equivalent Sound Level
LESA	.....	Land Evaluation and Site Assessment
LID	.....	Low Impact Development
Lmax	.....	Maximum Sound Level
LMD	.....	Landscape Maintenance District
LOS	.....	Level of Service
LRA	.....	Local Responsibility Area
MBTA	.....	Migratory Bird Treaty Act
mgd	.....	Million Gallons per Day
MJHE	.....	Multi-Jurisdictional Housing Element
MLD	.....	Most Likely Descendant
MMBTU	.....	Million British Thermal Units
MMTCO ₂ e	.....	Million Metric Tons of Carbon Dioxide Equivalents
MPO	.....	Metropolitan Planning Organization
MRZ	.....	Mineral Resource Zone
MS4	.....	Municipal Storm Sewer Systems
MW	.....	Megawatt
N ₂ O	.....	Nitrous Oxide
NAAQS	.....	National Ambient Air Quality Standards
NAGPRA	.....	California Native American Graves Protection and Repatriation Act
NAHC	.....	Native American Heritage Commission
NESHAPs	.....	National Emission Standards for HAPs
NF ₃	.....	Nitrogen trifluoride
NFIP	.....	National Flood Insurance Program
NHPA	.....	National Historic Preservation Act
NOP	.....	Notice of Preparation
NO _x	.....	Oxides of Nitrogen
NPDES	.....	National Pollutant Discharge Elimination System

NPL	.....	National Priority List
NPS	.....	National Park Service
O ₃	.....	Ozone
OHWM	.....	Ordinary High Water Mark
OPR	.....	Office of Planning and Research
OSHA	.....	Occupational Safety and Health Administration
Pb	.....	Lead
PDA	.....	Priority Development Area
PDWF	.....	Peak Dry Weather Flow
PFC	.....	Perfluorocarbons
PG&E	.....	Pacific Gas and Electric
PM	.....	Particulate Matter
PM ₁₀	.....	Particulate Matter (less than 10 µm)
PM _{2.5}	.....	Particulate Matter (less than 2.5 µm)
POST	.....	Peace Officer Standards and Training
ppb	.....	Parts per Billion
ppm	.....	Parts per Million
ppv	.....	Peak Particle Velocity
PRC	.....	Public Resources Code
Project	.....	City of Fowler 2040 General Plan
PV	.....	Photovoltaic
PWWF	.....	Peak Wet Weather Flow
RCRA	.....	Resource Conservation and Recovery Act
RFMP	.....	Regional Flood Management Plan
ROG	.....	Reactive Organic Gases
RTP	.....	Regional Transportation Plan
RWQCB	.....	Regional Water Quality Control Board
SB	.....	Senate Bill
SCAQMD	.....	South Coast Air Quality Management District
SCH	.....	State Clearinghouse
SCS	.....	Sustainable Communities Strategy
SDWA	.....	Safe Drinking Water Act
SF ₆	.....	Sulfur Hexafluoride
SFHA	.....	Special Flood Hazard Areas

SHMP	.....	State of California Multi-Hazard Mitigation Plan
SHPO	.....	State Historic Preservation Officer
SJVAB	.....	San Joaquin Valley Air Basin
SJVAPCD	.....	San Joaquin Valley Air Pollution Control District
SKFCSD	.....	Selma-Kingsburg-Fowler County Sanitation District
SKGSA	.....	South Kings Groundwater Sustainability Agency
SLCP	.....	Short-Lived Climate Pollutants
SMARA	.....	California Surface Mining and Reclamation Act
SO ₂	.....	Sulfur Dioxide
SOI	.....	Sphere of Influence
SP	.....	Service Population
SR	.....	State Route
SRA	.....	State Responsibility Area
SRTS	.....	Safe Routes to Schools
SSJVIC	.....	Southern San Joaquin Valley Information Center
Stafford Act	.....	Robert T. Stafford Disaster Relief and Emergency Assistance Act
State	.....	California
SWPPP	.....	Stormwater Pollution Prevention Plan
SWRCB	.....	State Water Resources Control Board
TAC	.....	Toxic Air Contaminant
TAZ	.....	Traffic Analysis Zone
TCR	.....	Tribal Cultural Resources
TDM	.....	Transportation Demand Management
TPZ	.....	Traffic Pattern Zone
TSCA	.....	Toxic Substances Control Act
TSM	.....	Transportation System Management
UPRR	.....	Union Pacific Railroad
USEPA	.....	United States Environmental Protection Agency
USFS	.....	United States Forest Service
USACE	.....	United States Army Corps of Engineers
U.S.C.	.....	United States Code
USFA	.....	United States Fire Administration
USFWS	.....	United States Fish and Wildlife Service
UST	.....	Underground Storage Tank

UWMP	.....	Urban Water Management Plan
VMT	.....	Vehicle Miles Traveled
WC	.....	Water Code
$\mu\text{g}/\text{m}^3$	.....	Micrograms per Cubic Meter

Executive Summary

This Draft Environmental Impact Report (DEIR) evaluates the potential environmental impacts of the proposed City of Fowler (Fowler) 2040 General Plan (GP), as well as the GP's recommended policies and mitigation measures to minimize program impacts. The Fowler 2040 GP is a comprehensive document that outlines Fowler's goals, policies, and action items intended to guide the future development of Fowler to full buildout.

PROJECT SYNOPSIS

Project Applicant

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Project Description Summary

The DEIR has been prepared to examine the potential environmental impacts of the GP to full buildout to 2040. The following is a summary of the full project description that can be found in Chapter 2 of the DEIR.

Fowler was incorporated in 1908 and adopted its first comprehensive GP in 1976. Certain chapters have been revised or added, but Fowler has not completed a comprehensive update of its GP since its original adoption. The Fowler 2040 GP is a comprehensive update of Fowler's 1976 General Plan and establishes the community's vision for future development of Fowler through the year 2040. As part of the general plan process, the Fowler 2040 GP has been reorganized and reformatted, with updated goals and policies that reflect the community's vision of Fowler.

The Fowler 2040 GP has been organized into the following nine elements: Land Use; Community Design; Housing; Community Health and Equity; Open Space; Mobility; Economic Development; Community Resiliency and Safety; and Public Facilities. Together, these elements cover all topics required to be included in a GP under State law, as described above. Each element describes the context for its related topic areas, followed by goals, policies, and action items to guide the City's management and development through 2040.

The Fowler 2040 GP would expand the Planning Area and focus on increasing opportunities for housing and economic development in key areas of Fowler. The update also brings the GP into compliance with new laws related to environmental justice, complete streets, flood and fire protection, and climate adaptation. The Fowler 2040 GP also provides the policy framework to guide future development toward land uses that support walking and biking.

Project Objectives

The GP is intended to function as a policy document to guide land use decision within the Fowler planning area through the year 2040. The vision for Fowler over the next 20 to 30 years was developed with great care and extensive community input. The vision and values supporting the community were developed and fully outlined in Chapter 2 of the DEIR.

Residential Buildout Potential

Buildout refers to the estimated amount of new development and corresponding growth in population and housing that is likely to take place under the GP through the planning horizon year of 2040. In accordance with CEQA, a program-level DEIR is obligated to analyze the maximum potential buildout allowed under the subject plan or program. It has been calculated that the Fowler 2040 GP accommodates a population of 50,937 and a potential of 15,530 dwelling units at full buildout. The DEIR has used this figure to calculate and evaluate Project environmental impacts. The 15,530 dwelling units are divided into six main categories:

- Low density residential development totaling 2,275 units.
- Medium-low density residential development totaling 4,118 units.
- Medium density residential development totaling 4,858.
- Medium-high density residential development totaling 2,404 units.
- High density residential development totaling 1,449 units.
- Community commercial development totaling 426 units.

It is important to note there is no guarantee all of the allowable residential potential in the proposed Fowler 2040 GP will actually be built because construction is done by private land owners subject to market forces (such as land prices, construction costs, etc.).

Project Alternatives Summary

Alternatives have been created to provide decision makers with a reasonable range of options to consider. Analyzing these options helps demonstrate to decision makers and the general public the effects of revising components of the proposed Fowler 2040 GP. A summary of each alternative is provided below.

Alternative 1: No Project. The No Project Alternative would continue to use the 1976 GP including the land use map and all of the existing goals and policies. Under this alternative, the proposed GP would not be adopted, and the existing GP would remain in place through the horizon year of 2040.

Alternative 2: Existing Sphere of Influence (SOI). The SOI Alternative considers the SOI from Fowler's existing draft 2025 GP (not adopted) while making changes to the land uses to match those proposed under the Project. Namely, it removes the agricultural land designation from within the SOI and replaces it with various residential, commercial, industrial, and public facility designations which are more appropriate. Some other land use changes within the existing SOI are also retained in this alternative, including the conversion of some residential land to commercial uses and the redesignation of some land to public facilities land uses to better represent the existing use. This alternative includes the policy changes that are a part of the Project.

The existing SOI Alternative includes approximately 3,833 acres, 1,137 fewer than the Project. As such, all land uses except for Heavy Industrial also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 2,012 acres of residential land uses support a build-out of 10,833

dwelling units (which also includes 370 units from mixed-use commercial areas), 4,697 fewer than the Project. The Existing SOI Alternative accounts for approximately 21,281,377 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 23,325 employees. This is approximately 4,442,201 fewer square feet and approximately 7,553 fewer employees than the Full Fowler 2040 GP Buildout.

Alternative 3: Priority Development Area (PDA) only. The PDA Alternative considers the proposed land uses in the PDA from the Project. This alternative recognizes Fowler’s desire to prioritize infill development in the PDA by excluding other areas from the Plan as well as to encourage industrial development along the Golden State Corridor. This alternative includes the policy changes included in the Project.

The PDA Alternative includes approximately 3,468 acres, 1,502 fewer than the Project. As such, all land uses except for Heavy Industrial and Parks and Open Space also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 1,380 acres of residential land uses support a build-out of 7,504 dwelling units (which also includes 361 units from mixed-use commercial areas), 8,026 fewer than the Project. The PDA Alternative accounts for approximately 24,875,892 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 29,296 employees. This is approximately 847,686 fewer square feet and approximately 1,582 fewer employees than the Full Fowler 2040 GP Buildout.

Alternative 4: Full Buildout (Preferred Alternative). The Full GP Buildout Alternative consists of developing the existing SOI and a potential expansion area which includes approximately 671 acres located beyond Fowler’s existing SOI. This potential expansion area has been included in the Planning Area as it represents land outside the existing Fowler city limits and SOI boundaries, which in Fowler’s judgement, bears relation to its planning efforts. The expansion area is comprised of two sections of land, located along the western boundary of the existing SOI.

The northern expansion area would expand the City’s potential for expansion west to Minnewawa and Kenneth Avenues, respectively. This expansion area would capture the State Route (SR) 99 and Clovis Avenue interchange in a more effective way than the current SOI boundary does. The southern expansion area proposes to expand Fowler’s potential for expansion to Temperance Avenue and Manning Avenue south to Springfield Avenue and connecting back to SR 99 squaring off the southern boundary of the city and, again, taking advantage of the SR 99 and Manning Avenue interchange and entrance into the southern portion of Fowler.

Alternative	Population	Employment	Residential Development (Dwelling Units)	Non-Residential Development (Square Feet)	Vehicle Miles Traveled (VMT)
No Project Alternative	10,571	8,792	3,223	7,579,319	247,894
Existing SOI Alternative	35,533	23,325	10,833	21,281,377	953,359
PDA Alternative	24,612	29,296	7,504	24,875,892	1,021,796
Full Fowler 2040 GP Buildout Alternative	48,404	30,102	15,718	25,822,662	1,240,395

Land use, population, and employment data were provided by email correspondence (Provost & Pritchard 2022) and VMT was included in the traffic report (Kittelson & Associates 2022).

Areas of Known Controversy

In accordance with CEQA Guidelines Section 15082, Fowler circulated a Notice of Preparation (NOP) of a DEIR for the proposed Fowler 2040 GP on November 1, 2021, to trustee and responsible agencies, the State Clearinghouse (SCH), and the public. The 30-day public review period for the NOP ended on December 1, 2021. A scoping meeting was held on November 18, 2021. The scoping meeting was held publicly at Fowler’s City Hall and was attended by nine participants. The following issues of concern have been identified during the review period of the distribution of the NOP, stakeholder interviews, and public meetings: (1) conversion of agricultural land to non-agricultural uses; and (2) ensuring provision of adequate resources for police and fire services as growth continues.

Unavoidable Significant Impacts

Significant and unavoidable impacts were identified for the GP for which proposed policies from Fowler and additional proposed mitigation measures could not reduce impacts to a less than significant level. The unavoidable significant impacts are found in Section 4 and are summarized below:

- The Project would “Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.”
- The Project would “conflict with existing zoning for agricultural use, or a Williamson Act contract.”
- The Project would “conflict with or obstruct implementation of the applicable air quality plan.”
- The Project would “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 Project would “result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.”
- The Project would “generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.”
- The Project would “conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.”

Summary of Environmental Impacts and Mitigation Measures

Table ES-1 summarizes the identified environmental impacts of the proposed Fowler 2040 GP, the required mitigation measures, and residual impacts or significance after mitigation. Impacts are defined as:

- Significant, unavoidable adverse impacts that require a statement of overriding consideration, pursuant to Section 15093 of the CEQA Guidelines if the proposed Fowler 2040 GP is approved;
- Significant, adverse impacts that can be feasibly mitigated to less than significant levels and that require findings to be made under Section 15091 of the CEQA Guidelines;
- Adverse impacts that are less than those allowed by adopted significance thresholds; and
- No impact.

Table ES-1: Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
Aesthetics			
Threshold 1: Have substantial adverse effect on a scenic vista?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Potentially Significant Impact	<p>Policy CH-5: Establish lighting standards that limit public lighting to produce a warm color temperature that protects circadian rhythms.</p> <p>Policy CDES-19: Establish lighting standards that limit public lighting to produce a warm color temperature that protects circadian rhythms.</p> <p>Action Item CDES-19a: Review and revise, as needed, the Zoning Ordinance to integrate compatibility standards for commercial development adjacent to residential and other sensitive users. Such compatibility standards shall address, at a minimum, increased building setbacks, enhanced landscaping, lighting standards, masonry wall requirements, and/or loading or operational limitations.</p> <p>Action Item CDES-23a: Adopt industrial standards in consideration of the following design principles:</p> <p>Exterior lighting should be integrated within the architectural design for industrial buildings. Light sources should not be visible and should be shielded to reflect down onto the ground and not into streets or neighboring property. Utility connections should be coordinated with architectural elements of the site and/or building so as not to be a visual nuisance. Utilities should be underground or screened from view from the street.</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Storage facilities should be screened and constructed to prevent visual clutter.</p> <p>Permanent outdoor storage should be screened by landscaping or materials compatible with the surrounding buildings' architecture.</p> <p>Varied architectural details should be applied to all façades exposed to public view. Blank end walls and long, monotonous façades shall be avoided. Treatments shall include architectural features, landscaping, or art elements that tie into the overall design theme.</p>	
Agricultural and Forestry Resources			
<p>Threshold 1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</p>	<p>Potentially Significant Impact</p>	<p>Policy LU-8: Annex land into the City in accordance with adopted growth management thresholds and reject proposals for annexation that do not comply with requirements of General Plan policies relating to orderly and contiguous development and provision of public services and facilities.</p> <p>Policy LU-9: Allow annexation of residential land uses in the Tier I, Tier II, and Tier III development boundaries, as shown in Figure 4 3: Growth Management Tiers, according to the following thresholds:</p> <p><u>Tier I:</u></p> <ul style="list-style-type: none"> • Annexation of property designated Medium High Density Residential or High Density Residential may occur within Tier I once: <ul style="list-style-type: none"> ○ 112 building permits for new dwelling units located on property designated either Medium High Density Residential or High Density Residential in the Primary Development Area (PDA) have been issued after December 31, 2021. • Annexation of property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential may occur within Tier I once both of the following have occurred: <ul style="list-style-type: none"> ○ 1,512 building permits for new dwelling units located on property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential in the PDA have been issued after December 31, 2021. ○ 155 building permits for new dwelling units located on property designated Medium High Density Residential or High Density 	<p>Significant and Unavoidable Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Residential in the PDA have been issued after December 31, 2021.</p> <p><u>Tier II:</u></p> <ul style="list-style-type: none"> • Annexation of property designated Medium High Density Residential or High Density Residential may occur within Tier II once: <ul style="list-style-type: none"> ○ 789 building permits for new dwelling units located on property designated either Medium High Density Residential or High Density Residential in the PDA or Tier I have been issued. • Annexation of property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential may advance to Tier II once: <ul style="list-style-type: none"> ○ 3,005 building permits for new dwelling units located on property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential in the PDA or Tier I have been issued after December 31, 2021. ○ 1,068 building permits for new dwelling units on property designated Medium High Density Residential and High Density Residential in the PDA or Tier I have been issued after December 31, 2021. Building permits counted towards the higher density residential threshold may also be counted towards this threshold. <p><u>Tier III:</u></p> <ul style="list-style-type: none"> • Annexation of property designated Medium High Density Residential and High Density Residential may advance to Tier III once: <ul style="list-style-type: none"> ○ 1,492 building permits for new dwelling units on property designated Medium High Density Residential or High Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021. • Annexation of property designated Low Density Residential, Medium Low Density Residential, and Medium Density Residential may advance to Tier III once: 	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<ul style="list-style-type: none"> ○ 5,245 building permits for new dwelling units on property designated Low Density Residential, Medium Low Density Residential, and Medium Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021. ○ 2,053 building permits for new dwelling units on property designated Medium High Density Residential or High Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021. Building permits counted towards the higher density residential threshold may also be counted towards this threshold. <p><u>Exceptions:</u></p> <p>The following exceptions apply to the growth thresholds for each growth tier:</p> <ul style="list-style-type: none"> • The development of deed restricted affordable housing may occur in the next growth tier, regardless of whether the building permit issuance threshold in the previous tier has been met. • The City may provide an exception to the growth tier thresholds for master planned properties that include properties within two growth tiers. <p>Policy SAF-33: Promote the preservation and economic viability of agricultural land adjacent to the Fowler Planning Area.</p> <p>Action Item SAF-33a: Amend local ordinances to require open space or other buffers for new development abutting agricultural areas planned for long-term use.</p> <p>Policy SAF-34: Discourage the premature conversion of productive agricultural lands.</p> <p>Action Item SAF-34a: Utilize master plans and the Capital Improvement Program (CIP) to implement the extension of urban services efficiently and responsibly.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item SAF-34b: Support the use of Williamson Act contracts to prevent the premature conversion of farmland and review and revise, as needed, the Fowler Municipal Code to facilitate the continuation of Williamson Act Contracted parcels, as appropriate, following annexation.</p> <p>Action Item SAF-34c: Review and revise, as appropriate, zoning regulations allowing for continued agriculture uses in the City limits where no development is proposed in the near-term.</p> <p>Policy SAF-35: Require new development occurring in proximity to existing agricultural uses to acknowledge the potential effects of agricultural operations.</p> <p>Action Item SAF-35a: Adopt a Right-to-Farm Ordinance.</p> <p>Action Item SAF-35b: Prior to adoption of a Right-to-Farm Ordinance, continue to require that purchasers of homes located in the vicinity of agricultural operations be provided a Right-to-Farm notification of such activities by way of deeds and/or escrow documentation.</p>	
Threshold 2: Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Potentially Significant Impact	Compliance with Fowler 2040 GP policies LU-8, LU-9, SAF-33, SAF-34, SAF-35 and action items SAF-33a, SAF-34a, SAF-34b, SAF-34c, SAF-35a, and SAF-35b, as discussed above, would help reduce the level of impact the Project would have on agricultural resources.	Significant and Unavoidable Impact
Threshold 3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 4: Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 5: Involve other changes in the existing environment which, due to the DEIR location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Potentially Significant Impact	Compliance with Fowler 2040 GP policies LU-8, LU-9, SAF-33, SAF-34, SAF-35 and action items SAF-33a, SAF-34a, SAF-34b, SAF-34c, SAF-35a, and SAF-35b, as discussed above, would help reduce the level of impact the Project would have on agricultural resources.	Significant and Unavoidable Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
Air Quality			
<p>Threshold 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?</p>	<p>Potentially Significant Impact</p>	<p>Policy LU-13: Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses.</p> <p>Action Item LU-13a: Review and revise the Zoning Ordinance, as necessary, to reflect increased density allowances for planned unit developments at the City’s discretion. Granting of additional density (not to exceed 25%) will depend on the developer’s demonstration of the quality of design in such areas as access, circulation, building placement, parking, provision of open space, and architectural design and compatibility with the surrounding area.</p> <p>Policy LU-18: Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development.</p> <p>Action Item LU-18a: Review and revise the Zoning Ordinance, as needed, to allow residential uses in the Community Commercial Designation.</p> <p>Policy LU-19: Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.</p> <p>Action Item LU-19a: Review and revise the Zoning Ordinance, as needed, to permit neighborhood-serving commercial uses, such as food markets, in residential zones through the Conditional Use Permit process.</p> <p>Policy LU-21: Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.</p> <p>Policy CDES-16: Locate parking areas within commercial projects in a manner that promotes pedestrian activity.</p> <p>Policy CDES-18: New commercial projects are designed in such a way that they enhance Fowler’s character.</p>	<p>Significant and Unavoidable Impacts</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item CDES-18a: Adopt commercial standards in consideration of the following design principles:</p> <ul style="list-style-type: none"> • Commercial sites are designed with human scale and pedestrian amenities. • Landscaping is used to unify and improve the visual quality of commercial sites. • Where appropriate, commercial development should be oriented along the street edges of new commercial sites, at street corners, or along main roadways internal to larger developments. • Encourage the use of shared parking amongst various commercial and office uses where possible. Minimize required off-street parking. • Ensure that commercial buildings incorporate ground floor transparency when appropriate. • Encourage architectural elements that contribute to the visual quality and existing context of new commercial development, such as varied massing and roof types, articulating building façades, and a variety of cohesive building materials and color schemes. <p>Policy CDES-31: Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.</p> <p>Policy CH-1: Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.</p> <p>Action Item CH-1a: Identify gaps in the existing pedestrian and bicycle network to inform capital improvements programming and grant funding opportunities.</p> <p>Action Item CH-1b: Prioritize pedestrian and bicycle improvement projects that close gaps in the mobility network and those which link the east and west sides of the city.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item CH-1c: Amend road design standards, as necessary, to include complete street design principles.</p> <p>Action Item CH-1d: Develop and implement an Active Transportation Plan.</p> <p>Action Item CH-1e: Pursue funding for the adoption of a Safe Routes to School Master Plan to assist in the planning and funding of bicycle and pedestrian infrastructure improvements along school routes.</p> <p>Policy CH-2: Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.</p> <p>Policy CH-3: Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.</p> <p>Action Item CH-3a: Conduct a visual quality assessment of bicycle and pedestrian facilities to determine the efficacy of existing active transportation improvements and to help prioritize future improvements.</p> <p>Action Item CH-3b: Require street lighting within the rights-of-way of all public streets.</p> <p>Policy CH-4: Require Street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.</p> <p>Action Item CH-4a: Establish street design standards for each land use zone and require street trees of “medium” size or larger in commercial, residential, and mixed-use zones.</p> <p>Policy CH-6: Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board’s (CARB’s) Land Use Compatibility Handbook.</p> <p>Policy CH-7: Consider the use of solid and vegetative barriers as a means for reducing near-roadway air pollution concentrations along SR 99 and local expressways.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy OS-10: The City shall implement the community trail network as shown <i>Figure 8-2: Trail Facilities</i>.</p> <p>Policy OS-11: Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.</p> <p>Policy OS-12: Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.</p> <p>Policy MOB-4: Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.</p> <p>Action Item MOB-4a: Prepare guidelines for the evaluation of vehicle miles travelled. The guidelines should include significance criteria for evaluating impacts, thresholds of applicability for discretionary projects, and guidance on analyzing transportation impacts.</p> <p>Action Item MOB-4b: Identify a range of actions available for developments to mitigate transportation impacts, specifically targeted at reducing vehicle miles travelled.</p> <p>Policy MOB-5: Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.</p> <p>Policy MOB-6: Use Intelligent Transportation Systems (ITS) to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-9: New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.</p> <p>Policy MOB-10: Develop a multi-purpose recreational bikeway network and support facilities.</p> <p>Policy MOB-11: Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.</p> <p>Action Item MOB-11a: Review and revise, as needed, public works standards to include pedestrian and bicycle safety features where appropriate.</p> <p>Action Item MOB-11b: Establish design standards to ensure the bikeway network is easily identifiable and consistent with standard signs and markings, as designated by the State of California Traffic Control Devices Committee and the State Bikeway Committee.</p> <p>Policy MOB-12: Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.</p> <p>Policy MOB-13: Coordinate with Caltrans, FCOG, Fresno County Rural Transit Agency (FCRTA), and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.</p> <p>Policy MOB-14: Identify opportunities for a multi-modal transit hub within the City.</p> <p>Policy MOB-15: Support the development of paratransit service programs.</p> <p>Policy MOB-16: Support transit operator efforts to maximize return for short- and long-range transit needs.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item MOB-16a: Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).</p> <p>Policy MOB-17: Incorporate the potential for public transit service expansion throughout the City.</p> <p>Action Item MOB-17a: Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.</p> <p>Policy MOB-18: Improve route options and access for public transit City-wide, specifically west of SR 99.</p> <p>Action Item MOB-18a: Coordinate with Fresno County Rural Transit Agency (FCRTA) and other public transit agencies to facilitate additional transit stops.</p> <p>Action Item MOB-18b: Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity.</p> <p>MM AQ-1: Consider impacts on regional air quality when reviewing proposals for new development. Short-term construction and long-term operational quality impacts shall be evaluated in accordance with SJVAPCD-recommended guidance.</p>	
<p>Threshold 2: Would the project 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?</p>	<p>Potentially Significant Impact</p>	<p>Implementation of Policies LU-21, CDES-31, CH-1, CH-6, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, and MOB-19 of the 2040 Fowler GP would help to reduce increases in criteria pollutants. Greenhouse Gas Mitigation Measures GHG-1 and GHG-2, and Air Quality Mitigation Measure AQ-1 shall be implemented to reduce project-generated emissions of air pollutants.</p>	<p>Significant and Unavoidable Impacts</p>
<p>Threshold 3: Would the project expose sensitive receptors to substantial pollutant concentrations?</p>	<p>Potentially Significant Impact</p>	<p>MM AQ-2a: Consider the localized air quality impacts on surrounding land uses, including emissions of toxic air contaminants and odors, when reviewing proposals for new development.</p>	<p>Less than Significant Impact to Potentially Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		MM AQ-2b: The City shall require new development projects to demonstrate LOS reductions for any project-associated intersection to an LOS E or F, or worsen an existing LOS F. If this requirement is not met, a project-specific CO Hotspot analysis shall be conducted. If the CO analysis shows levels above current applicable ambient air quality standards, the project proponent shall be required to make intersection improvements to reduce CO emissions at the intersection, alter the project to reduce the impact, or implement other measures sufficient to demonstrate a reduction in predicted localized CO concentrations to below applicable ambient air quality standards.	
Threshold 4: Would the General Plan result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Potentially Significant Impact	MM AQ-2a: Consider the localized air quality impacts on surrounding land uses, including emissions of toxic air contaminants and odors, when reviewing proposals for new development.	Significant and Unavoidable Impacts
Biological Resources			
Threshold 1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 3: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
Threshold 5: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than Significant Impact	<p>Policy OS-24: Require the retention of trees of significance (such as heritage trees) by promoting stewardship of such trees and ensuring that the design of development projects provides for the retention of these trees wherever possible. Where tree removal cannot be avoided, the City shall require tree replacement or suitable mitigation.</p> <p>Action Item OS-24a: Develop and implement a Tree Preservation Ordinance for the preservation of the City’s urban forest, including heritage trees, on public and private property.</p>	Less than Significant Impact
Threshold 6: Would the Project conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	Mitigation measures are not warranted.	No Impact
Cultural Resources			
Threshold 1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?	Potentially Significant Impact	<p>Policy CDES-10: Improvements to older buildings in the downtown area and throughout the City should enhance rather than weaken the original character of such buildings.</p> <p>Policy CDES-12: All construction shall cease, and the Community Development Director and City Engineer shall be notified immediately if any prehistoric, archaeological, or fossil artifact or resource is uncovered during construction. All construction shall immediately stop and an archaeologist that meets the Secretary of the Interior’s Professional Qualifications Standards in prehistoric or historical archaeology shall be retained, at the applicant’s and/or successors-in-interest’s expense, to evaluate the find(s) and recommend appropriate action according to Section 15064.5 of CEQA Guidelines. If avoidance is infeasible, other appropriate measures would be instituted. Work may proceed on other parts of the project subject to direction of the archaeologist while assessment of historic resources or unique archaeological resources is being carried out.</p> <p>Policy CDES-13: All construction shall cease if any human remains are uncovered, and the Community Development Director, City Engineer and Fresno County Medical Examiner and Coroner shall be notified in accordance to Section 7050.5 of the California Health and Safety Code. If</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		human remains are determined to be those of a Native American or has reason to believe that they are those of a Native American, the Native American Heritage Commission shall be contacted, and the procedures outlined in CEQA Section 15064.5(e) shall be followed.	
Threshold 2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Potentially Significant Impact	Policies CDES-12 and CDES-13 of the Fowler 2040 GP, as outlined above, would ensure that potential impacts to unknown archaeological resources are less than significant.	Less than Significant Impact
Threshold 3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Potentially Significant Impact	All development facilitated by the Fowler 2040 GP would be required to adhere to existing regulations regarding the treatment of human remains. Further, policies CDES-12 and CDES-13 of the Fowler 2040 GP, as outlined above, would ensure that potential impacts to unknown human remains are less than significant.	Less than Significant Impact
Energy			
Threshold 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Potentially Significant Impact	<p>Policy LU-21: Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.</p> <p>Policy CH-6: Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board's (CARB's) Land Use Compatibility Handbook.</p> <p>Policy MOB-4: Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.</p> <p>Policy MOB-9: New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.</p> <p>Policy MOB-10: Develop a multi-purpose recreational bikeway network and support facilities.</p> <p>Policy MOB-11: Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-12: Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.</p> <p>Policy MOB-13: Coordinate with Caltrans, FCOG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.</p> <p>Policy MOB-14: Identify opportunities for a multi-modal transit hub within the City.</p> <p>Policy MOB-15: Support the development of paratransit service programs.</p> <p>Policy MOB-16: Support transit operator efforts to maximize return for short- and long-range transit needs.</p> <p>Policy MOB-17: Incorporate the potential for public transit service expansion throughout the City.</p> <p>Policy MOB-18: Improve route options and access for public transit City-wide, specifically west of SR 99.</p>	
Threshold 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Geology and Soils			
Threshold 1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?	Less than Significant Impact	Policy SAF-26: Regularly review and enforce all seismic and geologic safety standards and require the use of best practices in site design and building construction methods.	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy SAF-27: Promote the upgrading, retrofitting, and/or relocation of all existing critical facilities and other important public facilities that do not meet current building code standards and are susceptible to seismic or geologic hazards.</p> <p>Action Item SAF-27a: Evaluate critical facilities for risk from seismic and geologic hazards. Prioritize improvements based on level of expected risk.</p> <p>Policy SAF-28: Continue to use building codes as the primary tool for reducing seismic risk in structures.</p>	
Threshold 3: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?	Less than Significant Impact	Policies SAF-26 through SAF-28 outlined above.	Less than Significant Impact
Threshold 4: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 5: Would the project result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 6: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less than Significant Impact	Policies SAF-26 and SAF-27 outlined above.	Less than Significant Impact
Threshold 7: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No Impact	Mitigation measures are not warranted.	No Impact
Threshold 8: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	No Impact	Mitigation measures are not warranted.	No Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
Threshold 9: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	Potentially Significant Impact	Policy CDES-12 outlined above.	Less than Significant Impact
Greenhouse Gas Emissions			
Threshold 1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Potentially Significant Impact	<p>Policy LU-1: Development shall occur in accordance with the planned land uses as shown on <i>Figure 4-1: Land Use Diagram</i>.</p> <p>Policy LU-2: Density and intensity standards for each land use designation are shown in <i>Table 4-1: Land Use Designations and Consistency Matrix</i>. Consistent zoning districts determined to be compatible with the identified land use designation are also included in <i>Table 4-1</i>. Other zoning districts may be determined to be consistent with a land use designation based on compatibility with the intent of the designation and its specified density or intensity range. Such density or intensity range shall be calculated based on gross acres.</p> <p>Policy LU-3: For a plan amendment and/or rezoning request, the City may require submittal of supplemental information to determine the need for the plan amendment or rezoning</p> <p>Policy LU-13: Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses.</p> <p>Policy LU-18: Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development.</p> <p>Policy LU-19: Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.</p> <p>Policy LU-21: Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.</p> <p>Policy CDES-16: Locate parking areas within commercial projects in a manner that promotes pedestrian activity.</p>	Significant and Unavoidable Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy CDES-18: New commercial projects are designed in such a way that they enhance Fowler’s character.</p> <p>Policy CDES-31: Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.</p> <p>Policy CH-1: Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.</p> <p>Policy CH-2: Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.</p> <p>Policy CH-3: Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.</p> <p>Policy CH-4: Require street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.</p> <p>Policy CH-6: Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board’s (CARB’s) Land Use Compatibility Handbook.</p> <p>Policy MOB-1: Design and construct a multimodal circulation system as shown on <i>Figure 9-1: Circulation Diagram</i>.</p> <p>Policy MOB-2: Streets are designated and planned according to the functional classifications listed in <i>Table 9-2</i>.</p> <p>Policy MOB-3: The right of way for arterials and collectors may be reduced to avoid disrupting existing development if the travel way generally meets the street classification design requirements listed in <i>Table 9-2</i>.</p> <p>Policy MOB-4: Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.</p>	

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		<p>Policy MOB-5: Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.</p> <p>Policy MOB-9: New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.</p> <p>Policy MOB-10: Develop a multi-purpose recreational bikeway network and support facilities.</p> <p>Policy MOB-11: Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.</p> <p>Policy MOB-12: Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.</p> <p>Policy MOB-13: Coordinate with Caltrans, Fresno COG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.</p> <p>Policy MOB-14: Identify opportunities for a multi-modal transit hub within the City.</p> <p>Policy MOB-15: Support the development of paratransit service programs.</p> <p>Policy MOB-16: Support transit operator efforts to maximize return for short- and long-range transit needs.</p> <p>Policy MOB-17: Incorporate the potential for public transit service expansion throughout the City.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-18: Improve route options and access for public transit City-wide, specifically west of SR 99.</p> <p>Policy OS-10: The City shall implement the community trail network as shown in <i>Figure 8-2: Trail Facilities</i>.</p> <p>Policy OS-11: Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.</p> <p>Policy OS-12: Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.</p>	
<p>Threshold 2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</p>	<p>Potentially Significant Impact</p>	<p>Mitigation Measures AQ-1 and AQ-2 outlined above.</p> <p>MM GHG-1: The City shall develop a Climate Action Plan to identify ways to reduce GHG emissions and limit climate change impacts on the residents of the city of Fowler. The Climate Action Plan shall integrate the state’s future GHG-reduction goals, including the State’s goal of attaining carbon neutrality by 2045.</p> <p>MM GHG-2: Until the City adopts a qualified Climate Action Plan consistent with Mitigation Measure GHG-1 the following measures shall be applied to new land use development projects:</p> <ul style="list-style-type: none"> • Land use development projects shall be constructed with electrically powered appliances and building mechanical equipment in place of natural-gas fueled equipment. • Land use development projects shall, to the maximum extent possible, exceed the California Green Building Standard Code Tier 2 requirements for electric vehicle charging infrastructure. 	<p>Significant and Unavoidable Impact</p>
Hazards and Hazardous Materials			
<p>Threshold 1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</p>	<p>Potentially Significant Impact</p>	<p>Policy SAF-8: Protect soils, surface water, and groundwater from contamination from hazardous materials.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item SAF-8a: Continue to provide household hazardous waste collection programs to encourage proper disposal of products containing hazardous materials or hazardous wastes.</p> <p>Action Item SAF-8b: Should a site be contaminated by hazardous waste, work with the Fresno County Environmental Health Division, related agencies, and landowners to enable the clean-up of these sites.</p> <p>Policy SAF-9: Cooperate with State agencies and the Fresno County Environmental Health Division efforts to identify hazardous materials users, implement hazardous materials plans, and minimize risks associated with hazardous cargoes, agricultural spraying, and electromagnetic fields.</p> <p>Action Item SAF-9a: Revise Zoning Ordinance to require industries which store and process hazardous materials to provide a buffer between the facilities and the property boundary.</p> <p>Action Item SAF-9b: Ensure that industrial facilities are constructed and operated within the standards of the most up-to-date safety and environmental protocols.</p>	
<p>Threshold 2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</p>	<p>Potentially Significant Impact</p>	<p>Policies SAF-8 and SAF-9 as well as action items SAF-8a, SAF-8b, SAF-9a, and SAF-9b outlined above.</p> <p>Policy SAF-11: Locate new critical facilities at least 100 feet from the railroad mainline and Highway 99 to minimize risks in the event of a hazardous cargo accident.</p> <p>Policy SAF-12: Promote improvements, such as the construction of grade-separated crossings, to increase overall safety and reduce potential risk from hazardous cargo.</p>	<p>Less than Significant Impact</p>
<p>Threshold 3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</p>	<p>Potentially Significant Impact</p>	<p>Mitigation Measures are not warranted.</p>	<p>Less than Significant Impact</p>
<p>Threshold 4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section</p>	<p>Less than Significant Impact</p>	<p>Policy SAF-10: Reference State hazardous waste site lists in the City development review process and address risk, as needed, with site development requirements.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
65962.5 and, as a result, would it create a significant hazard to the public or the environment?		<p>Action Item SAF-10a: Prepare and maintain a map of hazardous waste sites identified through regional, State, and federal resources.</p> <p>Action Item SAF-10b: Ensure that the proponents of new developments address hazardous materials concerns through preparation of Phase I and Phase II studies, as necessary, as part of the design phase.</p> <p>Action Item SAF-10c: Require buildings used for operations requiring a hazardous materials business plan to be investigated for the presence of hazardous materials and waste as part of the re-use, rehabilitation, or demolition process.</p> <p>Policy CH-13: Increase awareness of warning signs for the presence of toxic substances related to aging housing stock.</p> <p>Action Item CH-13a: Distribute informational materials on the warning signs of toxic substances through the Building Department.</p>	
Threshold 5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact	<p>Policy SAF-2: Continue to implement the Fresno County Multi-Hazard Mitigation Plan to address disasters such as earthquakes, drought, flooding, hazardous material spills, water contamination, epidemics, fires, extreme weather, major transportation accidents, and terrorism.</p> <p>Action Item SAF-2a: Review and revise, as necessary, the Municipal Code to ensure effective organization, responsiveness, and continuity of government during declared emergencies.</p> <p>Action Item SAF-2b: Procure generators, or another suitable alternative, for back-up power at City Hall, the Police Department, the Fire Department, and all domestic water distribution infrastructure.</p> <p>Action Item SAF-2c: The City, in conjunction with other local, State, and Federal agencies, shall ensure operational readiness of the Emergency</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Operations Center (EOC), conduct annual training for staff, and maintain, test, and update equipment to meet current standards.</p> <p>Action Item SAF-2d: Monitor potential risk from seismic and geologic hazards and implement actions identified by the Multi-Hazard Mitigation Plan to reduce these risks.</p> <p>Action Item SAF-2e: Sponsor and support educational programs regarding emergency response, disaster preparedness protocols and procedures, and disaster risk reduction.</p> <p>Action Item SAF-2f: Sponsor and support cooling centers during extreme heat days</p> <p>Policy SAF-3: Continue to coordinate with Fresno County and other jurisdictions to prepare and implement Emergency Preparedness Plans and to conduct emergency and disaster preparedness exercises to test these plans.</p> <p>Policy SAF-4: Provide a street network with safe and efficient routes for emergency vehicles, meeting necessary street widths, turn around radius, and other factors as determined in coordination with emergency service providers.</p>	
Threshold 7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Hydrology and Water Quality			
Threshold 1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Potentially Significant Impact	<p>Policy PF-17: Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.</p> <p>Policy PF-18: Continue to cooperate with the Selma-Kingsburg-Fowler (SKF) County Sanitation District to design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy PF-19: Actively participate in the Selma-Kingsburg-Fowler (SKF) County Sanitation District wastewater master plan update proves to ensure it aligns with planned land uses and projected demands for the City of Fowler.</p> <p>Policy PF-20: Design and construct stormwater system infrastructure as needed to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements.</p> <p>Action Item PF-20a: Develop a storm drainage master plan which outlines necessary infrastructure improvements to the storm drainage system.</p>	
<p>Threshold 2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?</p>	<p>Potentially Significant Impact</p>	<p>Policy SAF-13: Conserve and, where feasible, create or restore areas providing water quality benefits such as undeveloped open space areas, basins, and drainage canals.</p> <p>Policy SAF-15: Require new development to protect water quality through site design, pollution prevention, storm water treatment, runoff reduction measures, BMPs, and LID strategies.</p> <p>Action Item SAF-15a: Review and revise, as appropriate, City standards to allow for LID strategies. Periodically review City standards to ensure innovative or new site design strategies which protect water quality are permitted, as appropriate.</p> <p>Policy SAF-16: Require the use of native, drought tolerant, or low water use landscaping in both public and private development to reduce or eliminate the need for landscape irrigation.</p> <p>Action Item SAF-16a: Review and revise, as necessary, the adopted water efficient landscape standards for consistency with the State Model Water Efficient Landscape Ordinance, as amended. As required, submit reports on the City's implementation of its landscape standards to the California Department of Water Resources and/or other agencies.</p> <p>Action Item SAF-16b: Update City design standards to require residential developers to provide a no-turf landscape option that is priced the same as the standard landscape option.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy SAF-17: Promote programs to improve water efficiency in new and existing buildings.</p> <p>Policy SAF-18: Explore the use of recycled water to irrigate landscape areas.</p> <p>Action Item SAF-18a: Coordinate with Selma-Kingsburg-Fowler (SKF) County Sanitation District on what options are available to reuse recycled water.</p> <p>Policy SAF-25: Encourage low-impact development by allowing for alternative stormwater management techniques including the provision of vegetated areas, infiltration trenches, and dry wells.</p> <p>Action Item SAF-25a: Review and revise, as necessary, the Zoning Ordinance and other City standards to allow for low-impact stormwater management site design features.</p> <p>Action Item PF-20b: Require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.</p> <p>Action Item PF-20c: Require new development to include grading and erosion control plans prepared by a registered engineer or land surveyor.</p> <p>Policy PF-21: Protect groundwater resources within the Planning Area. This includes protecting the occurrence of groundwater recharge, as well as the quality and quantity of available groundwater resources.</p>	
<p>Threshold 3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:</p> <ul style="list-style-type: none"> result in substantial erosion or siltation on- or off-site; 	Potentially Significant Impact	Policies PF-20, PF-21, PF-22, PF-23, PF-24, SAF-13, and SAF-15 and action item SAF-15a, as outlined above.	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
<ul style="list-style-type: none"> substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows? 			
Threshold 4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundations?	Less than Significant Impact	See Policies SAF-19, SAF-20, SAF-21, SAF-22, SAF-23, SAF-24, SAF-25 and Action Item SAF-25a as outlined above.	No Impact
Threshold 5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Land Use and Planning			
Threshold 1: Would the project physically divide an established community?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Mineral Resources			
Threshold 1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Noise			
Threshold 1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general	Potentially Significant Impact	Policy CH-25: New development of the land uses listed in <i>Table 7-1</i> shall be located, designed, and operated in such a way that external noise levels from stationary noise sources do not exceed the maximum identified. Noise levels shall be measured immediately within the property line of the	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
<p>plan or noise ordinance, or applicable standards of other agencies?</p>		<p>affected land use. Where two land uses meet, the more restrictive standard shall be used.</p> <p>Action Item CH-25a: Require an acoustical analysis as part of the environmental review process when uses are proposed within the contour lines as shown on <i>Figure 7-1</i> that exceed the exterior noise levels identified in <i>Table 7-1</i>.</p> <p>Action Item CH-25b: Require an acoustical analysis as part of the environmental review process when a proposed use is likely to exceed the permitted exterior noise levels identified in <i>Table 7-1</i>.</p> <p>Action Item CH-25c: Temporary uses such as live music events, festivals, or markets that are considered short-term or intermittent may exceed maximum noise levels but shall incorporate noise reduction measures to the extent feasible.</p> <p>Action Item CH-25d: Review and revise, as necessary, the Municipal Code to reflect the noise standards contained in this chapter.</p> <p>Policy CH-26: New development shall be designed and operated in such a way that interior noise levels from both stationary and mobile noise sources do not exceed 45 dBA L_{dn} for adjacent residential uses or other uses where people normally sleep and 45 dBA L_{eq} at peak hour for adjacent office, school, church, or similar use.</p> <p>Policy CH-27: New uses increasing stationary and/or mobile noise levels shall be subject to the following thresholds for CEQA significance:</p> <ul style="list-style-type: none"> • Where existing ambient noise levels are less than 60 dB, an increase of 5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant; • Where existing ambient noise levels are between 60 and 65 dB, an increase of 3 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant; • Where existing ambient noise levels are greater than 65 dB, an increase of 1.5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant. 	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy CH-28: Require noise generators to provide increased setbacks, walls, landscaped berms, other sound-absorbing barriers, or a combination thereof to prevent excessive noise exposure and reduce noise levels to acceptable levels, as needed.</p> <p>Policy CH-29: Require noise reduction methods along major roadways in order to protect adjacent, noise-sensitive land uses against excessive noise. Noise reduction methods shall include design strategies, including setbacks, landscaped berms, and other sound-absorbing barriers, when possible, in lieu of sound walls, to mitigate noise impacts and enhance aesthetics. Sound walls may also be appropriate noise-reduction strategies.</p> <p>CH-30: When sound walls are proposed, encourage a combination of berms and/or landscaping and walls to produce a more visually pleasing streetscape.</p> <p>CH-31: Require roof-mounted and detached mechanical equipment to be acoustically buffered when adjacent to residential uses to prevent equipment noise in excess of 55dBA as measured at the nearest residential property line.</p> <p>CH-32: Purchase City vehicles and equipment with low noise generation. Maintain City vehicles to minimize noise.</p> <p>Action Item CH-32a: Consider City vehicles and equipment as part of the Capital Improvement Program process.</p>	
<p>Threshold 2: Would the project result in generation of excessive ground borne vibration or ground borne noise levels?</p>	<p>Potentially Significant Impact</p>	<p>CH-33: Transportation and City infrastructure construction shall not be subject to typical noise standards so long as construction occurs between the hours of 7 AM and 7 PM, Monday through Friday, or between 8 AM and 5 PM on weekends and federal holidays. Construction may occur outside of these times if completing the work within these time frames is deemed infeasible.</p> <p>CH-34: The City shall require an assessment of construction noise impacts on nearby noise-sensitive land uses and associated activities to minimize those impacts as part of the discretionary review process.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>CH-35: Require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on current City or FTA criteria.</p> <p>CH-36: The City may require a project-specific vibration impact assessment and associated impact reduction measures for projects involving the use of major vibration-generating equipment which could result in vibration levels in excess of 0.2 in/sec peak particle velocity (PPV).</p>	
<p>Threshold 3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?</p>	<p>Less than Significant Impact</p>	<p>Policies and Action Items listed above.</p>	<p>Less than Significant Impact</p>
Population and Housing			
<p>Threshold 1: Would the project induce substantial unplanned population growth in an area, either directly (for Sample, by proposing new homes and businesses) or indirectly (for Sample, through extension of roads or other infrastructure)?</p>	<p>Less than Significant Impact</p>	<p>Mitigation measures are not warranted.</p>	<p>Less than Significant Impact</p>
<p>Threshold 2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?</p>	<p>Less than Significant Impact</p>	<p>Mitigation measures are not warranted.</p>	<p>Less than Significant Impact</p>
Public Services			
<p>Threshold 1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</p> <ul style="list-style-type: none"> i. Fire protection? ii. Police protection? iii. Schools? 	<p>Potentially Significant Impact</p>	<p>Policy PF-11: In cooperation with the Fresno County Fire Protection District, provide firefighting equipment, facilities, and staffing sufficient to assure adequate response and fire flow at all times.</p> <p>Policy PF-12: Ensure adequate water supplies are available for fire suppression throughout the City and require development to construct all necessary fire suppression infrastructure and equipment.</p> <p>Policy PF-13: Maintain mutual aid agreements with other fire and emergency service departments in Fresno County to ensure adequate service throughout the City of Fowler and its Planning Area.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
<p>iv. Parks? v. Other public facilities?</p>		<p>Policy PF-14: Maintain staffing levels of City emergency service departments, including fire and police.</p> <p>Action Item PF-14a: Prepare a staffing plan for the Police Department to establish target staffing levels and update the plan periodically. The following staffing targets shall be used until the staffing plan is prepared and adopted:</p> <ul style="list-style-type: none"> • Target an average staffing level of 1.5 police officers per 1,000 persons when the City population is less than 10,000. • Target an average staffing level of 1.25 police officer per 1,000 persons once the City reaches a population of 10,000 or more. <p>Action Item PF-14b: Explore options to staff full-time or part-time fire fighter and support staff.</p> <p>Policy OS-1: Parks shall be developed according to the park classifications, access radii, and service level requirements outlined in <i>Table 8-1</i>.</p> <p>Policy OS-3: Within single family residential projects, whether attached or detached, a minimum of 5% of the project site, not inclusive of existing or future major road rights-of-way, shall be developed with usable open space. Such open space shall be maintained by an assessment district, landscape/lighting district, homeowners' association, or other appropriate maintenance entity.</p> <p>Action Item OS-3a: Adopt standards that establish minimum requirements for open space areas to qualify as usable for purposes of meeting the 5% usable open space requirement. Such standards shall require a minimum of a one-half acre park site. The remaining acreage needed to satisfy the 5% usable open space requirement may be made up of neighborhood trails or other usable open space areas meeting the minimum established requirements. In instances where 5% of a project site's acreage, exclusive of rights of way, results in less than one-half acre, the park site for that project site may be constructed equal to the minimum acreage required to comply with 5% standard.</p> <p>Policy OS-4: Usable open space areas, as required in, may fulfill the requirements for parkland dedication, per the City's Quimby Ordinance. To</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		qualify, such land shall be dedicated to the City and meet the minimum established requirements for usable open space.	
Recreation			
<p>Threshold 1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</p>	<p>Potentially Significant Impact</p>	<p>Policy OS-1: Parks shall be developed according to the park classifications, access radii, and service level requirements outlined in <i>Table 8-1</i>.</p> <p>Policy OS-3: Within single family residential projects, whether attached or detached, a minimum of 5% of the project site, not inclusive of existing or future major road rights-of-way, shall be developed with usable open space. Such open space shall be maintained by an assessment district, landscape/lighting district, homeowners' association, or other appropriate maintenance entity.</p> <p>Action Item OS-3a: Adopt standards that establish minimum requirements for open space areas to qualify as usable for purposes of meeting the 5% usable open space requirement. Such standards shall require a minimum of a one-half acre park site. The remaining acreage needed to satisfy the 5% usable open space requirement may be made up of neighborhood trails or other usable open space areas meeting the minimum established requirements. In instances where 5% of a project site's acreage, exclusive of rights of way, results in less than one-half acre, the park site for that project site may be constructed equal to the minimum acreage required to comply with 5% standard.</p> <p>Policy OS-4: Usable open space areas, as required in Policy OS-3 in the General Plan, may fulfill the requirements for parkland dedication, per the City's Quimby Ordinance. To qualify, such land shall be dedicated to the City and meet the minimum established requirements for usable open space.</p> <p>Policy OS-17: The City shall use a broad range of funding and economic development tools to ensure high quality development, maintenance, and programming of the City parks, trails, and recreation system.</p> <p>Funding and economic development tools may include exploring grant opportunities or establishing sponsorship opportunities, such "adopt-a-park" programs.</p>	<p>Less than Significant Impact</p>

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		Policy OS-18: All residential projects shall be subject to the payment of park development impact fees, as adopted by resolution of the City Council. Payment of these development impact fees shall be in addition to any parkland dedication or in-lieu fee payment requirements in accordance with Fowler’s adopted Quimby Act Ordinance, as applicable, except as provided for in <i>Policy OS-6</i> .	
Threshold 2: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Transportation			
Threshold 1: Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?	Potentially Significant Impact	<p>Policy CH-4: Require street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.</p> <p>Action Item CH-4a: Establish street design standards for each land use zone and require street trees of “medium” size or larger in commercial, residential, and mixed-use zones.</p> <p>Policy MOB-1: Design and construct a multimodal circulation system as shown on <i>Figure 9-1: Circulation Diagram</i>.</p> <p>Action Item MOB-1a: Establish and implement a Roadways Master Plan that addresses the following:</p> <ul style="list-style-type: none"> • Identification of design standards, and exceptions to those standards where deviations are appropriate, for the roadway network. Design standards should include pedestrian, bicycle, public transit, and vehicular accommodations to ensure the circulation network is designed for complete streets. • Identification of Transportation System Management (TSM) and Transportation Demand Management (TDM) strategies for improving efficiencies in the circulation system for all modes of travel. • Integration of a Vision Zero goal of reducing traffic fatalities and sever injuries to zero and adopting strategies to achieve this goal. 	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-14: Identify opportunities for a multi-modal transit hub within the City.</p> <p>Policy MOB-15: Support the development of paratransit service programs.</p> <p>Policy MOB-16: Support transit operator efforts to maximize return for short- and long-range transit needs.</p> <p>Action Item MOB-16a: Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).</p> <p>Policy MOB-17: Incorporate the potential for public transit service expansion throughout the City.</p> <p>Action Item MOB-17a: Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.</p> <p>Policy MOB-18: Improve route options and access for public transit City-wide, specifically west of SR 99.</p> <p>Action Item MOB-18a: Coordinate with Fresno County Rural Transit Agency (FCRTA) and other public transit agencies to facilitate additional transit stops.</p> <p>Action Item MOB-18b: Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity.</p>	
Threshold 3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 4: Would the project result in inadequate emergency access?	Less than Significant Impact	Policy MOB-1: Design and construct a multimodal circulation system as shown on <i>Figure 9-1: Circulation Diagram</i> .	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item MOB-1a: Establish and implement a Roadways Master Plan that addresses the following:</p> <ul style="list-style-type: none"> • Identification of design standards, and exceptions to those standards where deviations are appropriate, for the roadway network. Design standards should include pedestrian, bicycle, public transit, and vehicular accommodations to ensure the circulation network is designed for complete streets. • Identification of Transportation System Management (TSM) and Transportation Demand Management (TDM) strategies for improving efficiencies in the circulation system for all modes of travel. • Integration of a Vision Zero goal of reducing traffic fatalities and sever injuries to zero and adopting strategies to achieve this goal. <p>Policy MOB-2: Streets are designated and planned according to the functional classifications listed in <i>Table 9-2</i>.</p> <p>Policy MOB-3: The right of way for arterials and collectors may be reduced to avoid disrupting existing development if the travel way generally meets the street classification design requirements listed in <i>Table 9-2</i>.</p> <p>Policy MOB-4: Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.</p> <p>Action Item MOB-4a: Prepare guidelines for the evaluation of vehicle miles travelled. The guidelines should include significance criteria for evaluating impacts, thresholds of applicability for discretionary projects, and guidance on analyzing transportation impacts.</p> <p>Action Item MOB-4b: Identify a range of actions available for developments to mitigate transportation impacts, specifically targeted at reducing vehicle miles traveled.</p> <p>Policy MOB-5: Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>segments where additional improvements are not feasible. LOS “D” may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS “E” may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.</p> <p>Policy MOB-6: Use Intelligent Transportation Systems (ITS) to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.</p> <p>Policy MOB-7: Prioritize operational solutions over major structural improvements to existing roadways where feasible.</p> <p>Policy MOB-8: Explore opportunities for management and maintenance of traffic control facilities to fall under the City’s jurisdiction.</p> <p>Policy MOB-9: New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.</p> <p>Policy MOB-10: Develop a multi-purpose recreational bikeway network and support facilities.</p> <p>Action Item MOB-10a: Review and revise, as needed, the Zoning Ordinance to include provisions for short-term and long-term bicycle parking and storage facilities.</p> <p>Policy MOB-11: Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.</p> <p>Action Item MOB-11a: Review and revise, as needed, public works standards to include pedestrian and bicycle safety features where appropriate.</p> <p>Action Item MOB-11b: Establish design standards to ensure the bikeway network is easily identifiable and consistent with standard signs and markings, as designated by the State of California Traffic Control Devices Committee and the State Bikeway Committee.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-12: Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.</p> <p>Policy MOB-13: Coordinate with Caltrans, Fresno COG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.</p> <p>Policy MOB-14: Identify opportunities for a multi-modal transit hub within the City.</p> <p>Policy MOB-15: Support the development of paratransit service programs.</p> <p>Policy MOB-16: Support transit operator efforts to maximize return for short- and long-range transit needs.</p> <p>Action Item MOB-16a: Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).</p> <p>Policy MOB-17: Incorporate the potential for public transit service expansion throughout the City.</p> <p>Action Item MOB-17a: Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.</p> <p>Policy MOB-18: Improve route options and access for public transit City-wide, specifically west of SR 99.</p> <p>Action Item MOB-18b: Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-19: Designated truck routes for use by heavy commercial and industrial traffic shall include Golden State Boulevard, Manning Avenue, and Temperance Avenue, as shown in <i>Figure 9-2</i>.</p> <p>Policy MOB-20: Encourage the efficient movement of goods.</p> <p>Action Item MOB-20a: Identify economically feasible street and highway improvement and maintenance projects that will improve goods movement.</p> <p>Action Item MOB-20b: Identify opportunities to support commercial and industrial access to existing rail facilities within the Planning Area.</p> <p>Policy MOB-21: Facilitate goods movement and delivery through internal site design of commercial and industrial areas.</p> <p>Policy MOB-22: Ensure truck access points and loading facilities are designed to reduce conflict with sensitive land uses.</p> <p>Policy MOB-23: Coordinate with Caltrans in the design of capital improvement projects near SR 99.</p> <p>Policy MOB-24: Continue to support Golden State Boulevard as a secondary route connecting the Kingsburg Selma Fowler corridor and providing access to the City of Fresno, Calwa, and Malaga.</p> <p>Policy MOB-25: Coordinate local transportation planning with the Fresno COG Regional Transportation Plan (RTP), Fresno County Rural Transit Agency (FCRTA), and other agencies on relevant transportation plans to ensure eligibility for state and federal funding.</p> <p>Policy MOB-26: Collaborate with Fresno County to integrate right-of-way and improvement standards for roads that cross jurisdictional boundaries. For development outside the City’s boundaries, but within the SOI, City and County staff will cooperate and agree on reasonable design standards and negotiate logical transitions from City to County Standards. In general, for such development under County jurisdiction but within the Sphere of</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Influence, City Standards should apply if annexation would logically occur in the short to intermediate range.</p> <p>Policy MOB-27: Provide for the logical, timely, and economically efficient extension of road infrastructure improvements.</p> <p>Action Item MOB-27a: Annually review and revise the CIP to ensure roadway improvements are prioritized and scheduled for construction over at least a 5-year period.</p> <p>Policy MOB-28: Seek all available means to finance improvements, including State and Federal grants.</p> <p>Policy MOB-29: Use appropriate entitlement processes and financial tools to ensure new development contributes a fair share of the transportation improvements and/or costs to provide necessary improvements.</p> <p>Action Item MOB-29a: Participate in the establishment of regional transportation mitigation fees and/or benefit districts to be assessed on new development. The fees shall cover a reasonable share of the costs of providing local and subregional transportation improvements needed for serving new development.</p> <p>Policy MOB-30: Existing points of ingress and egress shall be consolidated whenever possible. Driveway consolidation for new development shall be consistent with City standards and implemented through access agreements along arterials.</p> <p>Action Item MOB-30a: Review and revise, as necessary, City standards to establish criteria for site ingress and egress and driveway locations.</p> <p>Policy MOB-31: Ingress and egress to shopping centers shall minimize left turn movements into and out of parking or loading areas.</p> <p>Policy MOB-32: Review standards for traffic signalization and revise to reflect alternative ways, beyond the current warrant study, for the installation of traffic lights, stop signs, and alternative signalization methods.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Policy MOB-33: Require residential developments along arterials to back on to such streets with ornamental fencing, landscaping, and waiver of access, or to provide frontage roads with limited points of access to the street. “Open ended cul de sacs” to major streets are also required for pedestrian access.</p> <p>Policy MOB-34: Limit access points and intersections of streets and highways based on the road’s General Plan classification and function. Access points must be located a sufficient distance away from major intersections to allow for safe, efficient operation.</p> <p>Action Item MOB-34a: The distance between commercial driveways on arterial streets should be not less than 400 feet. Where practical and desirable, commercial driveways should be located on adjacent collector streets rather than on arterial streets.</p> <p>Action Item MOB-34b: Driveway access to major activity centers, including multifamily development, should be located no closer than 200 feet to the intersection of a collector or arterial street.</p> <p>Policy CH-1: Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.</p> <p>Action Item CH-1a: Identify gaps in the existing pedestrian and bicycle network to inform capital improvements programming and grant funding opportunities.</p> <p>Action Item CH-1b: Prioritize pedestrian and bicycle improvement projects that close gaps in the mobility network and those which link the east and west sides of the city.</p> <p>Action Item CH-1c: Amend road design standards, as necessary, to include complete street design principles.</p> <p>Action Item CH-1d: Develop and implement an Active Transportation Plan.</p>	

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
		<p>Action Item CH-1e: Pursue funding for the adoption of a Safe Routes to School Master Plan to assist in the planning and funding of bicycle and pedestrian infrastructure improvements along school routes.</p> <p>Policy CH-2: Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.</p> <p>Action Item CH-2a: Review and revise the Zoning Ordinance, as needed, to include complementary land uses within zoning districts.</p> <p>Policy CH-3: Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.</p> <p>Action Item CH-3a: Conduct a visual quality assessment of bicycle and pedestrian facilities to determine the efficacy of existing active transportation improvements and to help prioritize future improvements.</p> <p>Action Item CH-3b: Require street lighting within the rights-of-way of all public streets.</p>	
Tribal Cultural Resources			
<p>Threshold 1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <ul style="list-style-type: none"> i. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant 	Potentially Significant Impact	Policies CDES-10, CDES-12, and CDES-13, outlined in the Cultural Resources Section.	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
<p>pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>			
Utilities and Service Systems			
<p>Threshold 1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?</p>	Potentially Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
<p>Threshold 2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?</p>	Potentially Significant Impact	<p>Policy PF-16: Design and construct water system infrastructure as needed to meet current and future water demands and system requirements.</p> <p>Action Item PF-16a: Prepare and maintain a water systems master plan to estimate future water demands, identify an adequate supply of water to meet future demands, and identify potential new water supplies.</p> <p>Policy PF-17: Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.</p> <p>Policy PF-22: Support local efforts to implement SGMA. Coordinate with applicable GSAs to implement appropriate policies and programs identified in adopted GSPs.</p> <p>Policy PF-23: Where appropriate, integrate identified actions and projects from the GSP into the City’s Capital Improvement Program.</p>	Less than Significant Impact
<p>Threshold 3: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected</p>	Potentially Significant Impact	<p>Policy PF-17: Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.</p>	Less than Significant Impact

Impact	Level of Significance Before Policies, Action Items, and Mitigation Measures	Policies, Action Items, and Mitigation Measures	Level of Significance After Policies, Action Items, and Mitigation Measures
demand in addition to the provider’s existing commitments?		<p>Policy PF-18: Continue to cooperate with the Selma-Kingsburg-Fowler (SKF) County Sanitation District to design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.</p> <p>Policy PF-19: Actively participate in the Selma-Kingsburg-Fowler (SKF) County Sanitation District wastewater master plan update proves to ensure it aligns with planned land uses and projected demands for the City of Fowler.</p>	
Threshold 4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Potentially Significant Impact	Policy PF-26: Ensure solid waste pick-up and disposal facilities are sufficient to meet new development needs.	Less than Significant Impact
Threshold 5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Potentially Significant Impact	Policy PF-25: Facilitate activities that reduce waste production and/or encourage recycling or reuse of waste when possible to reduce the amount of solid waste sent to landfill in order to meet State targets.	Less than Significant Impact
Wildfire			
Threshold 1: Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 2: Would the Fowler 2040 GP, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact
Threshold 4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than Significant Impact	Mitigation measures are not warranted.	Less than Significant Impact

Chapter 1 Introduction

This California Environmental Quality Act (CEQA) Draft Environmental Impact Report (DEIR) examines the potential environmental impacts associated with implementation of the City of Fowler (Fowler) 2040 General Plan (GP). The Fowler 2040 GP is a long-term framework for the overall development of the City's planning area and the protection of Fowler's agricultural, natural, and cultural resources. The environmental review process for the adoption of the GP is the legal basis for preparing this DEIR.

1.1 Environmental Impact Report Background

The Fowler 2040 GP establishes the community's vision for the future development of the city and provides comprehensive policies for the city relating to land use, community design, housing, community health and equity, open space, mobility, economic development, community resiliency and safety, and public facilities. This DEIR has been prepared on behalf of Fowler in accordance with CEQA (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulation (CCR), Title 14, Chapter 3, Section 15000, et seq.). In accordance with CEQA Guidelines Section 15121(a), the purpose of a DEIR is to: (1) Inform public agency decision-makers and the general public of the significant environmental impacts of a project; (2) Identify possible ways to minimize, reduce, or avoid significant adverse impacts; and (3) Describe reasonable alternatives to the project.

This chapter of the DEIR:

- Provides an overview of the background of the proposed project;
- Describes the purpose and legal authority of the DEIR;
- Provides an overview of the Fowler 2040 GP;
- Summarizes the scope and content of the DEIR;
- Lists lead, responsible, and trustee agencies for the DEIR;
- Describes the intended uses of the DEIR; and
- Provides a synopsis of the environmental review process required under CEQA.

Additionally, the contents of DEIR include:

Executive Summary	Provides a summary of the characteristics of the Fowler 2040 GP, as well as the environmental impacts and recommended mitigation measures.
Chapter 1: Introduction	Provides an overview of the background of the Fowler 2040 GP.
Chapter 2: Project Description	Provides a detailed discussion of the Fowler 2040 GP.
Chapter 3: Environmental Setting	Describes the existing environmental and geographic conditions within Fowler.
Chapter 4: Environmental Impact Analysis	Describes the potential environmental effects associated with development facilitated by the Fowler 2040 GP, identifies policies of the GP that would reduce potential

	impacts, and provides mitigation measures when significant effects are identified.
Chapter 5: Other CEQA Required Sections	Discusses issues such as growth inducement and significant irreversible environmental impacts.
Chapter 6: Alternatives	Discusses alternatives to the Fowler 2040 GP, including the CEQA-required “no project” alternative.
Chapter 7: References	Lists informational sources for the DEIR involved in the preparation of the document.

1.1.1 Program Environmental Impact Report

This DEIR fulfills the requirements for a Program DEIR. Although the legally required contents of a Program DEIR are the same as those of a Project DEIR, Program DEIRs are by necessity more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project DEIR.

As provided for in CEQA Guidelines Section 15168, a Program DEIR may be prepared for a series of actions that may be characterized as one large project. Use of a Program DEIR provides Fowler (as lead agency) the opportunity to consider broad policy and program-wide mitigation measures and along with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis. Agencies generally prepare Program DEIRs for programs or a series of related actions that are linked geographically, are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program, or are individual activities carried out under the same authority and having generally similar environmental impacts that can be mitigated in similar ways.

By its nature, a Program DEIR considers the broad impacts associated with implementing a program (such as a General Plan or Specific Plan) and does not, and is not intended to, examine the specific environmental impacts associated with specific projects that may be accommodated by the provisions of General or Specific Plans. Once a Program DEIR has been prepared, subsequent activities within the program must be evaluated to determine what, if any, additional CEQA analysis must be performed. If the Program DEIR addresses the program’s impacts as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program DEIR scope and additional environmental analysis may not be required (CEQA Guidelines Section 15168(c)). When a lead agency relies on a Program DEIR for a subsequent activity, it must incorporate applicable policies, mitigation measures, and alternatives developed in the Program DEIR into the subsequent activities (CEQA Guidelines Section 15168(c)(3)). If a subsequent activity would have impacts not contemplated or not within the scope of the Program DEIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or project-level DEIR. In those cases, the Program DEIR still serves a valuable purpose as the first-tier environmental analysis.

1.1.2 Purpose of the Environmental Impact Report

The Fowler 2040 GP is a comprehensive statement of the City’s goals, policies, figures, and action items intended to guide the future development of Fowler. This DEIR is the primary source of environmental information for use by the City when considering adoption of the General Plan. It has been prepared to analyze potentially significant environmental impacts associated with implementation of General Plan policies and programs along with the future development within the planning area and incorporates appropriate and feasible mitigation measures and project alternatives that would minimize or eliminate these impacts.

The purpose of this document is to:

- Satisfy CEQA requirements for analysis of environmental impacts and alternatives by including a comprehensive programmatic evaluation of the physical impacts of the overall Fowler 2040 GP;
- Inform decision-makers and the public of the potential environmental impacts of the Project during review of, and prior to adoption of, the Fowler 2040 GP;
- Recommend appropriate and feasible measures to mitigate any significant adverse impacts;
- Provide a basis for the review of subsequent development projects and future public improvements within the planning area allowing for subsequent environmental documents to be tiered from the Final EIR.

As a wide-ranging environmental document, the Program DEIR uses expansive thresholds as compared to the project-level thresholds that might be used for a DEIR on a specific development project. It should not be assumed that impacts determined not to be significant at a program level would not be significant at a project level. In other words, determination that implementation of the proposed project as a program would not have a significant environmental effect does not necessarily mean that an individual project would not have significant impacts based on project-level CEQA thresholds, even if the project is consistent with the Fowler 2040 GP.

This DEIR represents the best effort, at a programmatic level, to evaluate the potential environmental impacts of the Fowler 2040 GP given its long-term planning horizon. It can be anticipated that conditions will change; however, the assumptions used are the best available at the time of preparation and reflect existing knowledge of patterns of development. This DEIR is intended to provide decision-makers and the public with information that enables informed consideration of the environmental consequences of the proposed project. This DEIR identifies significant or potentially significant environmental impacts, as well as mechanisms by which those impacts can be reduced to less-than-significant levels, whether through the implementation of policies identified in the Fowler 2040 GP, through incorporation of mitigation measures, or through the implementation of specific alternatives to the proposed project. In a practical sense, this document functions as a tool for fact-finding, allowing concerned citizens and agency staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure.

Table 1-1: Notice of Preparation Comments and DEIR Responses

Commenter	Comment/Request	How and Where it was Addressed
Native American Heritage Commission (NAHC)	NAHC Comment letter summarizes requirements for tribal consultation per Assembly Bill (AB) 52 and SB 18 and recommends such consultation of California Native American tribes that are traditionally and culturally affiliated with the geographic areas of the proposed project. NAHC also provides recommendations for Cultural Resources assessments which include contacting California Historical Resources Information System (CHRIS) and NAHC prior to ground disturbance.	See Sections 4.5, Cultural Resources, and 4.18, Tribal Cultural Resources, for details regarding tribal cultural resources. NAHC and South San Joaquin Valley Information Center (SSJVIC) (CHRIS) were contacted in February 2021 for Sacred Lands File (SLF) search and Records Searches in the planning area. AB 52 and SB 18 tribal consultation letters mailed out in August 2022. No responses received to date.

Commenter	Comment/Request	How and Where it was Addressed
Department of Conservation-Division of Land Resources Protection	Department of Conservation Comment letter discusses recommendations to mitigate for the conversion of agricultural land and suggests that all possible feasible measures should be taken, such as agricultural conservation easements and mitigation banks.	See Section 4.2, Agriculture and Forestry Resources, for analysis of impacts to agricultural lands, for details regarding environmental impacts, policies, and mitigation measures for the conversion of agricultural land.

1.1.3 Legal Authority

The Project consists of the proposed adoption and implementation of the Fowler 2040 GP, which requires the discretionary approval by the Fowler City Council; therefore, the Project is subject to the environmental review requirements of CEQA. In accordance with CEQA Guidelines Section 15121(a), the purpose of this DEIR is to serve as an informational document that:

“...will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.”

This DEIR has been prepared as a Program DEIR pursuant to CEQA Guidelines Section 15168. A Program DEIR is appropriate for a series of actions that can be characterized as one large project and as stated in the CEQA Guidelines, are related either:

1. Geographically,
2. As logical parts in the chain of contemplated actions,
3. In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
4. As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

This DEIR fulfills the requirements for a Program DEIR. Although the legally required contents of a Program DEIR are the same as those of a Project DEIR, Program DEIRs are necessarily more general and may contain a broader discussion of impacts, alternatives, and mitigation measures than a Project DEIR. As provided in CEQA Guidelines Section 15168, a Program DEIR may be prepared for a series of actions that may be characterized as one large project. Use of a Program DEIR provides the City (as the lead agency) with the opportunity to consider broad policies and program-wide mitigation measures, as well as greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis. By its nature, a Program DEIR considers the large-scale effects associated with implementing a program (such as a General Plan or Specific Plan) and does not, and is not intended to, examine the specific environmental effects associated with individual actions that may be undertaken under the guise of the larger program.

1.2 Scope and Content

In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) of the DEIR was circulated to potentially interested parties from November 1, 2021 to December 1, 2021. The following issues from the CEQA Guidelines Appendix G Checklist would be discussed in the DEIR.

Aesthetics	Land Use and Planning
Agriculture and Forestry Resources	Mineral Resources
Air Quality	Noise
Biological Resources	Population and Housing
Cultural Resources	Public Services
Energy	Recreation
Geology and Soils	Transportation
Greenhouse Gas Emissions	Tribal Cultural Resources
Hazards and Hazardous Materials	Utilities and Service Systems
Hydrology and Water Quality	Wildfire

This DEIR evaluates potential impacts in each of these resource areas for full buildout of the Fowler 2040 GP planning area.

1.3 Lead, Responsible and Trustee Agencies

Fowler is the lead agency under CEQA for this DEIR, as it has the primary discretionary authority to determine whether or how to approve the Fowler 2040 GP, including:

- Certification of the Program DEIR;
- Adoption of the Fowler 2040 GP; and
- Application to Fresno Local Agency Formation Commission (Fresno LAFCo) to initiate annexations and/or amendment of the City's Sphere of Influence (SOI).

CEQA Guidelines Section 15381 establishes the role of responsible agencies that may have review authority over aspects of future proposed projects or approval authority over projects that could potentially be implemented as a result of the Fowler 2040 GP policies or action items. Responsible agencies and their roles are provided below.

- The California Department of Transportation (Caltrans) has responsibility for approving future improvements to State Route (SR) 99;
- Fresno LAFCo has responsibility to review proposals for the formation of new local governmental agencies and for changes in the organization of existing agencies. Fresno LAFCo will be responsible for review and approval of proposed changes to Fowler's SOI and City limits;
- The California Department of Fish and Wildlife (CDFW) has responsibility for issuing take permits and streambed alteration agreements for any projects with the potential to affect plant or animal species listed by the State as rare, threatened, or endangered or projects that would disturb waters of the State;
- Any other public agencies, such as: Fresno County, Fresno Council of Governments (FCOG), San Joaquin Valley Air Pollution Control District, Fresno County Fire Protection District, California Department of Housing and Community Development, Consolidated Irrigation District, Fresno Irrigation District, the Regional Water Quality Control Board (RWQCB), the South Kings Groundwater Sustainability Agency, the Central Kings Groundwater Sustainability Agency, and the North Kings Groundwater Sustainability Agency.
- Other public agencies that may own land within City boundaries.

Trustee agencies have jurisdiction over certain resources held in trust for the people of California but do not have a legal authority over approving or carrying out the project. Potential trustee agencies for the Fowler 2040 GP may include CDFW.

1.3.1 Subsequent Actions

Implementation of the Fowler 2040 GP will require a number of subsequent actions:

- **Municipal Code Amendments.** The Zoning and Subdivision Ordinances will be updated to reflect changes to GP Land Use designations and to address any code requirements inconsistent with the Fowler 2040 GP.
- **Sphere of Influence Amendment.** Fowler’s SOI is determined by Fresno LAFCo. Following the City’s adoption of the Fowler 2040 GP, application will be made to LAFCo to align the SOI with the planning area.
- **Annexation and Rezoning.** Although lands throughout the planning area receive land use designations as part of the Fowler 2040 GP, additional processes (rezoning and annexation) must occur in order to bring those lands into the city limits. These actions will occur on an as-needed basis as development occurs subsequent to adoption of the Fowler 2040 GP and amendment to the SOI.
- **Infrastructure Master Planning.** Infrastructure Master Planning will occur following the adoption of the Fowler 2040 GP to implement the policies identified as part of the GP. This includes the planning of public infrastructure such as roadways, water, storm drainage, and sewer, as well as other types of public infrastructure such as parks and trails.
- **Groundwater Sustainability Agency Boundary Amendments.** The Fowler 2040 GP planning area overlaps three Groundwater Sustainability Agency (GSA) areas. Upon expansion of Fowler’s SOI, amendments to the GSA boundaries may be required.

1.4 Intended Use of the DEIR

This DEIR is an informational document for use in Fowler’s review and consideration of the Fowler 2040 GP. This document is a Program DEIR. CEQA Guidelines Section 15168(a) states that:

“A Program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in a chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria, to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts which can be mitigated in similar ways.”

As a programmatic document, this DEIR presents and discloses a city-wide assessment of the environmental impacts of the GP. The information and analysis in this DEIR will be used by Fowler’s planning staff, Planning Commission, and City Council along with responsible and trustee agencies and the general public.

The Fowler 2040 GP will guide subsequent actions taken by the City in its review of new development projects and the establishment of new and/or revised citywide or area-specific programs. This Program DEIR serves as a first-tier environmental document under CEQA, supporting second-tier environmental

documents for projects with detailed designs that have been developed for implementation within the planning area. A Program DEIR is not intended to provide analysis of site-specific impacts of individual projects, as these projects are not currently defined to the level that would allow for such an analysis. As individual future projects are proposed and considered, the City will undertake specific environmental analysis of those projects. Those analyses will be able to incorporate by reference the appropriate information from this Program DEIR regarding secondary impacts, cumulative impacts, broad alternatives, and other relevant factors. If the City's initial assessment of a later activity determines that the activity would have no new impacts and that no new mitigation measures would be required, that activity would not be subject to further review in the form of a negative declaration, mitigated negative declaration, or EIR. Where a subsequent environmental document is required, such review would focus on impacts specific to the project or its site that have not been considered in this Program DEIR.

1.5 Environmental Review Process

The environmental impact review process required under CEQA is summarized below. The steps appear in sequential order.

1. **Notice of Preparation (NOP) Distributed.** Immediately after deciding that a DEIR is required, the lead agency must file a NOP soliciting input on the DEIR scope to "responsible," "trustee," and involved federal agencies; to SCH, if one or more state agencies is a responsible or trustee agency; and to parties previously requesting notice in writing. The NOP must be posted in the County Clerk's office for 30 days. A scoping meeting to solicit public input on the issues to be assessed in the DEIR is not required but may be conducted by the lead agency. The NOP public comment period for the GP Update DEIR was from *November 1, 2021 to December 1, 2021* and a scoping meeting was held on November 18, 2021. A notification for the NOP was published in *The Business Journal* and sent to the State Clearinghouse on November 3, 2021. A total of two public comments were received in response to the NOP and scoping process (refer to [Table 1-1](#)).
2. **DEIR Prepared.** The DEIR must contain: (1) table of contents or index; (2) summary; (3) project description; (4) environmental setting; (5) significant impacts (direct, indirect, cumulative, growth inducing and unavoidable impacts); (6) alternatives; (7) mitigation measures; and (8) irreversible changes.
3. **Public Notice and Review.** A lead agency must prepare a Public Notice of Availability of a DEIR. The Notice must be placed in the County Clerk's office for 30 days (PRC Section 21092) and sent to anyone requesting it. Additionally, public notice of DEIR availability must be given through at least one of the following procedures: (1) publication in a newspaper of general circulation; (2) posting on and off the project site; and (3) direct mailing to owners and occupants of contiguous properties. The lead agency must consult with and request comments on the DEIR from responsible and trustee agencies, and adjacent cities and counties. The minimum public review period for a DEIR is 30 days. When a DEIR is sent to SCH for review, the public review period must be 45 days, unless a shorter period is approved by the Clearinghouse (PRC Section 21091). Distribution of the DEIR may be required through SCH.
4. **Notice of Completion.** A lead agency must file a Notice of Completion with SCH as soon as it completes a DEIR.
5. **Final EIR.** A Final EIR must include: (1) any revisions to the DEIR; (2) copies of comments received during public review; (3) list of persons and entities commenting; and (4) responses to comments.

6. ***Certification of Final EIR.*** The lead agency shall certify that: (1) the Final EIR has been completed in compliance with CEQA; (2) the Final EIR was presented to the decision-making body of the lead agency; and (3) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project.
7. ***Lead Agency Project Decision.*** A lead agency may: (1) disapprove a project because of its significant environmental impacts; (2) require changes to a project to reduce or avoid significant environmental impacts; or (3) approve a project despite its significant environmental impacts, if the proper findings and a statement of overriding considerations are adopted.
8. ***Findings/Statement of Overriding Considerations.*** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that: (1) the project has been changed to avoid or substantially reduce the magnitude of the impact; (2) changes to the project are within another agency's jurisdiction and such changes have been or should be adopted; or (3) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. If an agency approves a project with unavoidable significant environmental impacts, it must prepare a written Statement of Overriding Considerations that set forth the specific social, economic, or other reasons supporting the agency's decision.
9. ***Mitigation Monitoring and Reporting Program.*** When an agency makes findings on significant impacts identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant impacts.
10. ***Notice of Determination.*** An agency must file a Notice of Determination after deciding to approve a project for which an EIR is prepared (CEQA Guidelines Section 15094). A local agency must file the Notice with the County Clerk. The Notice must be posted for 30 days and sent to anyone previously requesting notice. Posting of the Notice starts a 30-day statute of limitations on CEQA challenges (PRC Section 21167(c)).

Chapter 2 Project Description

2.1 Overview of the City of Fowler 2040 General Plan

California law (GC Section 65300) requires that each city and county adopt a comprehensive general plan addressing the mandatory “elements” (or chapters) listed in GC Section 65302. The required elements for all jurisdictions are *Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety*. Cities and counties within the boundary of the San Joaquin Valley Air Pollution Control District must address *Air Quality* in their general plans. Cities and counties that have identified disadvantaged communities must also address *Environmental Justice* in their general plans.

Fowler was incorporated in 1908 and adopted its first comprehensive General Plan (GP) in 1976. Certain elements have been revised or updated, but Fowler has not completed a comprehensive update of its GP since its original adoption. In 2004, Fowler adopted the 2025 Fowler GP, a focused update to its GP, with revisions to the Land Use and Circulation chapters and the addition of an Economic Development chapter. The Housing Element of the Fowler GP was more recently adopted in April of 2016, as required by the GC, as part of a coordinated effort with the County of Fresno and 12 of the 15 cities in the county. The Multi-Jurisdictional Housing Element created a regional plan for addressing the housing needs of Fresno County. The Fowler 2040 GP incorporates the adopted Multi-Jurisdictional Housing Element by reference.

As part of the GP process, the Fowler 2040 GP has been reorganized and reformatted with updated goals, policies, and action items that reflect the community’s vision and address the mandatory elements. The Fowler 2040 GP provides a community vision that sets forth a vision statement and supporting principles, establishes goals and policies guiding future development, and identifies specific action items to achieve those goals and polices. It is a comprehensive, long-term plan for managing the physical development of the community.

The Fowler 2040 GP is intended to function as a policy document to guide land use decisions within the identified planning area through 2040. The Fowler 2040 GP was developed through a public outreach and engagement process and analysis by City staff, elected and appointed officials, and the community. Each element of the Plan addresses different aspects of the community and identifies action items to guide residents, decision-makers, businesses, and City staff toward achieving the community vision. The Fowler 2040 GP has been organized into nine elements: Land Use, Community Design, Housing, Community Health and Equity, Open Space, Mobility, Economic Development, Community Resilience and Safety, and Public Facilities. These nine chapters cover all the topics that are required to be included in a general plan under State law (land use, open space, conservation, housing, circulation, safety, noise, air quality, and environmental justice).

The 2025 Fowler GP included a planning area containing 3,939 acres. The Fowler 2040 GP expands the planning area to include an additional 1,751 acres, for a total planning area acreage of approximately 5,690 acres. The Fowler 2040 GP also brings the general plan into compliance with new laws related to environmental justice, complete streets, flood and fire protection, and climate adaptation. Characteristics of the Fowler 2040 GP planning area are described in more detail in [Section 2.4.1](#).

2.2 Fowler 2040 General Plan Document Organization

The Fowler 2040 GP is organized around a series of elements, allowing the plan to address the implementation of the community vision statement and supporting principles. The following chapters of

the GP describe the context for the related topic areas, the goals and policies for each of the elements, and implementation action items to guide Fowler’s management and development through 2040.

Introduction. Provides an overview of the purpose, intent, and organization of the GP. This chapter also contains diagrams depicting the Fowler’s planning area and jurisdictional boundaries as well as summarizes the planning process

Community Vision. Identifies the Community Vision and outlines the five Supporting Principles for Fowler.

Land Use Outlines the location, and density or intensity of all land uses within Fowler, including housing, business, industry, and open space. It identifies land use designations which note where development is appropriate and helps to structure other Fowler policies, programs, and activities related to land use and development.

Community Design Guides the visual character of Fowler’s built environment. This chapter presents the Fowler’s goals and policies around urban design and preservation of community character.

Housing The Housing Element has been adopted separately from the GP and is not being updated as part of this Project.

Community Health and Equity Establishes goals and policies to enhance community health in areas where public health, social equity, and land use planning intersect. These topic areas include pollution exposure, access to public facilities, access to nutritious and healthy food and safe and sanitary homes, opportunities for physical activity, and opportunities for civil engagement.

Open Space Establishes goals and policies for providing public open spaces, parks, recreational facilities, and trails.

Mobility Identifies goals and policies for the circulation system, including roadways, multimodal and active transportation networks, truck routes, and public transit. It is the guide for safe and efficient movement of goods and people throughout the planning area.

Economic Development Outlines goals and policies for economic vitality, prosperity, and growth as well as regional coordination related to economic goals.

Community Resiliency and Safety Identifies goals and policies for health and safety, including disaster preparedness, emergency services, and noise. It also outlines polices to address hazardous materials, waste, hydrology, and geological and seismic hazards. This chapter includes goals and policies related to climate resilience and adaptation. This chapter also discusses the preservation of natural and managed resources including agricultural land and cultural assets.

Public Facilities Identifies goals and policies for public facilities, including water, wastewater, and storm drainage, and public services such as solid waste, schools, and libraries. Public safety, including police and fire services, is also addressed.

Implementation Strategy Identifies actions to implement the GP goals and policies and identifies entities responsible for each action.

Glossary This chapter defines terms and common acronyms used throughout the GP.

Technical Information This chapter contains technical information required by the Government Code that supports related policy chapters, such as a Climate Adaptation Vulnerability Assessment, fire hazard mapping, and an analysis of disadvantaged communities within the planning area.

Fowler’s 5th Cycle Housing Element has been previously adopted and has established existing goals and policies to meet the housing needs of Fowler. These goals and policies will remain in effect and be a part of the regulatory setting. Goals and policies proposed as a part of the Fowler 2040 GP are contained as a part of the analysis.

2.3 Project Location

The City of Fowler is located within the southern central portion of Fresno County in the central San Joaquin Valley, approximately 11 miles south of downtown Fresno. Fowler is located west of the Sierra Nevada Mountains within the San Joaquin Valley Air Basin. Fowler is roughly bisected by SR 99, Union Pacific Railroad (UPRR), and Golden State Boulevard, which trend northwest to southeast through most of the Valley. Other incorporated cities near Fowler include Selma (5 miles to the southeast), Kingsburg (10 miles to the southeast), Reedley (13 miles to the southeast), Parlier (8 miles to the southeast), and Sanger (8 miles to the northeast) (See [Figure 2-1](#)). Fowler is mostly surrounded by agricultural land except for the south boundary, which adjoins both agriculture and heavy industrial land uses. Fowler’s SOI abuts that of the City of Selma to the southeast.

The San Joaquin River and the Kings River are the two principal drainages within the San Joaquin Valley. Fowler is located roughly 16 miles south of the San Joaquin River and 10 miles northwest of the Kings River.

2.4 Project Characteristics

The Fowler 2040 GP is a comprehensive update to the City’s 2025 Fowler GP policy document. The Fowler 2040 GP establishes a community vision along with goals and policies that respond to statutory requirements for general plans and additional local issues of importance. Together, the vision, goals, and policies in the Fowler 2040 GP will guide future development within the planning area and provide a foundation upon which the community’s vision can be realized.

2.4.1 Planning Area

California GC Section 65300 requires each city to include in its general plan all territory within the boundaries of the incorporated area as well as “any land outside its boundaries which in the planning agency’s judgement bears relation to its planning.” The Fowler 2040 GP planning area encompasses approximately 5,690 acres (approximately nine square miles) consisting of the existing corporate boundary and SOI along with approximate 1,195 additional acres; the planning area is inclusive of public rights-of-way. In the City’s judgement, it has an interest in guiding land use and circulation decisions within the planning area because of the impacts that decisions made for these lands may have on quality of life in Fowler. The Fowler 2040 GP goals and polices apply within the Fowler city limits and are also intended help coordinate long-term development policy within the broader planning area and with adjacent jurisdictions.

The planning area is illustrated in [Figure 2-3](#) and as described below.

City Limits

The city limits include approximately 1,693 acres and indicate the area within which the City of Fowler may exercise its powers as a municipal corporation. The City is generally bounded by East Clayton Avenue and East Adams Avenue to the north, East Manning Avenue and East South Avenue to the south, South

Temperance Avenue, South Harris Avenue, and Golden State Boulevard to the east, and State Route (SR 99) and South Sunnyside Avenue (see [Figure 2-3](#)). Any change to the city limits, typically in the form of annexation, would require approval of Fresno LAFCo.

Sphere of Influence

An SOI indicates an area of likely future expansion of a local agency and is the area within which it has, or will have, the ability to provide public services and utilities. In the case of cities, the SOI typically extends beyond the city limits and consists of unincorporated land under county jurisdiction. Along with identifying the probable future extent of the agency, the purpose of an SOI is to prevent overlapping jurisdictions and duplication of services, thereby helping to ensure efficient provision of services while discouraging urban sprawl and the premature conversion of agricultural and open space lands. As with annexations, Fresno LAFCo determines the SOIs for all local agencies in Fresno County. LAFCOs are required to review SOIs every five years or whenever an SOI amendment is proposed, whichever is earlier. As of its most recent amendment in 2007, the Fowler SOI includes approximately 4,495 acres, as shown on [Figure 2-3](#).

Expansion Area

The expansion area includes approximately 1,195 acres located beyond the City's existing SOI. This area has been included in the planning area because, in the City's judgement, it represents land outside the existing city limits and SOI that relates to Fowler's development. The expansion area comprises three sections of land, as shown on [Figure 2-3](#). The northwestern expansion area would extend Fowler's potential for expansion west to S. Minnewawa Avenue and E. Kenneth Avenue, respectively. The southern expansion area proposes to expand Fowler's potential for expansion to S. Temperance Avenue and E. Manning Avenue south to E. Springfield Avenue and connecting back to SR 99, squaring off the City's southern boundary. The northeastern expansion area proposes to expand Fowler's potential for expansion to E. Lincoln Avenue towards the north and S. Locan Avenue towards the east.

2.4.2 Land Uses and Growth Management

Land Use Diagram and Designations

The land use diagram for the Fowler 2040 GP is shown in [Figure 2-4](#). It illustrates the location and extent of different land uses for all parcels within the planning area, expressing the intended uses of property, and is used to direct future land development. The diagram also shows Fowler's growth management tier boundaries, including the Priority Development Area (PDA) and subsequent Urban Growth Tiers I, II, and III. The proposed land use plan includes 12 land use designations, as described in [Table 2-1](#), including the minimum and/or maximum densities and intensities for each designation. As the density and intensity standards for each land use designation are applied to future development projects and land use decisions, properties will gradually transition from one use to another, and land uses will ultimately shift to align with the intent of the GP.

Dual Designations

Neighborhood and community park space programmed on the land use diagram but that has not yet been developed is schematic in nature and parks may be located on any suitable lands in the general vicinity. In the event parks are not constructed in the locations planned, the underlying land use designation, or the dual designation, shown in [Figure 2-5](#) shall apply. One additional site has been assigned a dual designation to allow for a potential transition in land use, also shown in [Figure 2-5](#). The buildout assumptions outlined in [Section 2.5](#) reflect these alternate designations, assuming the more intense use.

Table 2-1: Proposed Land Use Designations

Designation	Description	Density/Intensity	Acreage/Percent per Land Use Diagram
RESIDENTIAL LAND USES			
LDR – Low Density Residential	<p>Low density residential is characterized by larger lots for single family residential development. Lot sizes would typically range from 8,500 to 12,000 square feet and larger. It is not envisioned that lots greater than one acre in size would be appropriate within the City limits.</p> <p>This designation is typically programmed near the edges of the community and agricultural land to allow for compatible transition of uses.</p>	0.0-3.6 du/ac	790 (16.5%)
MLDR – Medium Low Density Residential	<p>Medium low density residential is characterized primarily by single family homes. Lot sizes would typically range from 7,000 to 10,000 square feet.</p> <p>This designation is typically programmed near the edges of the community and agricultural land to allow for compatible transition of uses.</p>	3.7-5.5 du/ac	937 (18.9%)
MDR – Medium Density Residential	<p>Medium density residential is characterized by detached single family residential development, attached dwelling units, apartments, or townhomes. Lot sizes would typically range from 3,500 to 7,000 square feet.</p> <p>This designation is typically programmed between the higher and lower residential densities and serves as a transitional land use. It is also appropriate near neighborhood commercial and park land use designations.</p>	5.6-13.5 du/ac	733 (14.7%)
MHDR – Medium High Density Residential	<p>Medium high density residential is characterized by apartments, townhomes, or detached or attached single family residential development. Lot sizes for smaller lot single family development may range from 3,500 to 5,000 square feet.</p> <p>This designation is typically programmed near commercial centers, the downtown, and parks.</p>	8.0-13.5 du/ac	203 (4.1%)
HDR – High Density Residential	<p>High density residential is characterized by apartments or townhomes and is intended to be located near major community facilities, business centers, and downtown.</p> <p>This designation is typically programmed near commercial centers, the downtown, and parks.</p>	13.6-21.8 du/ac	83 (1.7%)

Designation	Description	Density/Intensity	Acreage/Percent per Land Use Diagram
COMMERCIAL USES			
NC – Neighborhood Commercial	<p>Neighborhood commercial provides for commercial uses serving convenience and commercial needs, but also offers general merchandise, variety, and specialty items and are intended to serve the smaller market area surrounding the site.</p> <p>This designation is typically programmed near activity centers, homes, and the downtown. Neighborhood Commercial uses are most appropriate on sites of 10 acres or smaller.</p>	Maximum FAR 0.4	28 (0.6%)
CC – Community Commercial	<p>Community commercial provides an activity center oriented towards the downtown district. The designation is also appropriate outside the downtown in primary commercial districts where a range of retail, financial, governmental, and entertainment activities occur. Mixed use residential uses are also encouraged in Community Commercial locations.</p> <p>This designation is typically programmed near major intersections and SR 99.</p>	13.6-21.8 du/ac Maximum FAR 0.4	104 (2.1%)
GC – General Commercial	<p>General Commercial provides for commercial areas with a wide range of retail and service activities along major traffic corridors and at the interchange of major streets with Highway 99 and Golden State Boulevard and are intended to provide for visitor-serving uses, including restaurants, lodging, and gasoline service areas.</p> <p>This designation is typically programmed near major intersections and SR 99.</p>	Maximum FAR 0.4	210 (4.2%)
INDUSTRIAL USES			
LI – Light Industrial	<p>Light industrial provides for uses such as business park, research and development, low intensity warehousing, fabricating, assembly, and other such similar industrial uses, which are typically conducted indoors.</p> <p>This designation is typically programmed along the SR 99 and Golden State Boulevard corridor in order to provide a buffer between Heavy Industrial uses and non-industrial designations.</p>	Maximum FAR 0.6	598 (12%)
HI – Heavy Industrial	<p>Heavy industrial provides for uses such as manufacturing, fabricating, process, assembling, wholesale and storage uses, trucking terminals, and quasi-public and</p>	Maximum FAR 0.6	1,105 (22.2%)

Designation	Description	Density/Intensity	Acreage/Percent per Land Use Diagram
	<p>utility structures and facilities. Heavy industrial often requires exposed or unenclosed processing and storage of uncovered materials or equipment.</p> <p>This designation is typically programmed along the SR 99 and Golden State Boulevard corridor.</p>		
OPEN SPACE USES			
P/OS – Parks and Open Space	<p>Parks and open space includes areas of permanent open spaces, parks, and/or areas precluded from major development.</p> <p>This designation is dependent on land acquisition for determining final location. Parks should be equally distributed throughout the City.</p>	Maximum FAR 0.25	55 (1.1 %)
PF – Public Facility	Public facility includes areas owned and/or maintained by public or institutional agencies such as facilities owned by the City, schools, hospitals, and similar facilities.	Maximum FAR 0.25	123 (2.5%)

Note: Acreages are rounded to the nearest number.

Growth Management

Growth management strategies encourage the orderly development of land to effectively manage municipal service expansion and maintain services for existing development. Additionally, they aim to balance growth with demand for new development, reducing the premature conversion of farmland and other natural resource and open space areas.

Fowler has developed a growth management strategy to effectively manage growth while meeting the requirements of State legislation. This strategy involves the establishment of the PDA and three urban growth boundaries (Urban Growth Tier I, II, and III) and associated thresholds to determine when and where development may occur. The Fowler 2040 GP establishes thresholds that denote when development may move into later growth tiers. Once development thresholds within a specific Tier have been met, additional Growth Tiers are opened, allowing infrastructure to expand. Thresholds are split between each use type: residential, commercial, and industrial. They are intended to maintain an approximately 10-year allotment of development potential for each land use type.

Development will first be concentrated in the PDA, including approximately 3,962 acres, identified in **Figure 2-3**. Urban Growth Tier I is located in the western portion of the planning area and includes approximately 697 acres designated for residential and commercial land. Growth Tier II, located to the northeast, includes approximately 744 acres of residential and commercial land uses. Finally, Growth Tier III, located to the south, includes approximately 287 acres of residential, commercial, and industrial land uses.

2.5 Land Use Assumptions and Potential Buildout

Several assumptions were made in the analysis of the preferred land use alternative to determine overall buildout potential. Buildout potential assumes a reasonable amount of development within a given range, rather than assuming land uses would build out to the maximum allowed density or intensity. All calculations related to density and intensity for each land use account for buildout potential. Density is expressed as dwelling units per acre (du/ac) and intensity is expressed as floor area ratio (FAR). For the purposes of this analysis, residential development is assumed at 80 percent of maximum density for the low, medium low, medium, and medium high-density designations and a minimum density of 20 du/ac is assumed for residential development in the high density as well as community commercial designations where residential uses are permitted. Further, for properties designated for community commercial uses, 30 percent was assumed to accommodate residential uses. Commercial and industrial development was assumed at 50 percent of maximum intensity, open space at 10 percent of maximum intensity, and public facilities at 40 percent of maximum intensity. All park space shown on the proposed land use diagram has a dual designation, as described in the Dual Designation section above. The buildout potential outlined below reflects these dual designations.

The full buildout potential or capacity of the Fowler 2040 GP includes approximately 14,764 units and 25,616,946 square feet of commercial and industrial space, resulting in a population of 48,131 and 30,667 jobs. These numbers assume that development, or redevelopment, would occur consistent with the buildout assumptions for each land use designation on all parcels within the planning area. While full buildout is not anticipated to occur within the approximately 20-year planning horizon of the Fowler 2040 GP, the impact analysis (both temporary [i.e., construction-related] and operational effects) has assumed full buildout of the Fowler 2040 GP and is based on the land uses identified in [Figure 2-4](#) as well as the proposed transportation improvements identified in [Figure 2-5](#). The analysis also evaluates the indirect environmental effects of construction and operation of the land uses and transportation improvements that may take place under the Fowler 2040 GP and its associated project components. Most impact analysis topics are not limited to occurring within a specific timeframe (i.e., by 2040); however, select impact analysis topics have assumed full buildout by 2042 to align with the Fresno COG traffic modeling horizon year, including air quality, energy, greenhouse gas emissions, noise, and transportation.

2.6 Project Objectives

CEQA Guidelines Section 15124 requires that a project description be accompanied by a “statement of objectives sought by the proposed project.” The Guidelines go on to state that the “objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the DEIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project.” Fowler has identified the following objectives for the proposed Project:

- Provide for growth of Fowler to meet long-term needs, including housing, employment, recreational opportunities, and a diversified economy, while maintaining the character of the community;
- Provide a transportation system that includes multiple travel modes and routes, including roadways, bicycling, walking, public transit opportunities, and increased access to major regional routes;
- Provide increased park and recreation opportunities;
- Provide increased services on the west side of SR 99;

- Promote community resiliency per capita through reductions in vehicle miles traveled, improved air quality, and reductions in energy usage;
- Provide and support public facilities and infrastructure with sufficient capacity to adequately serve the needs of the growing community.

In addition to these objectives, this DEIR provides mitigation measures to address potential impacts from future projects up to the full buildout capacity of the Fowler 2040 GP.

Figure 2-1: Regional Map

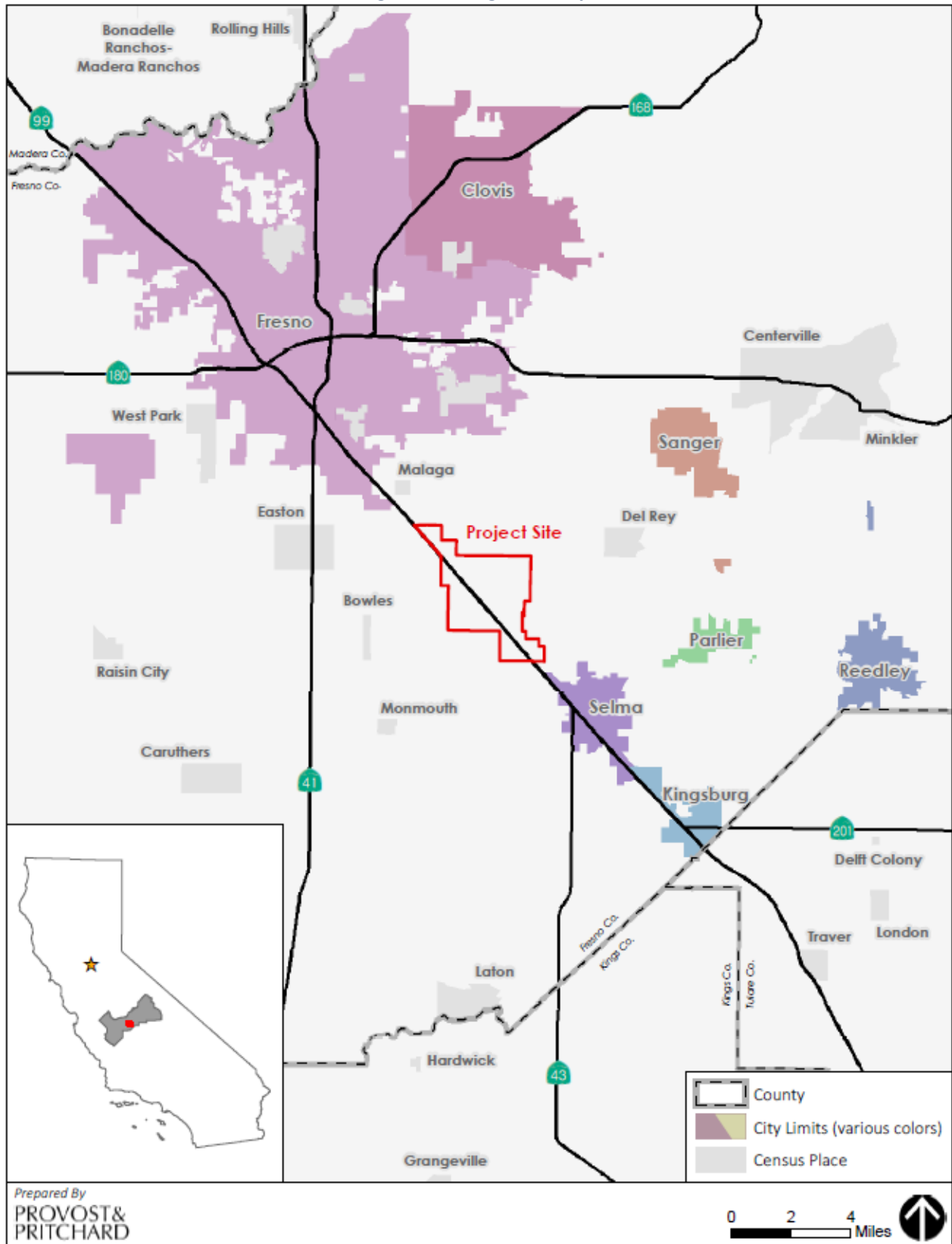


Figure 2-2: Topo Map

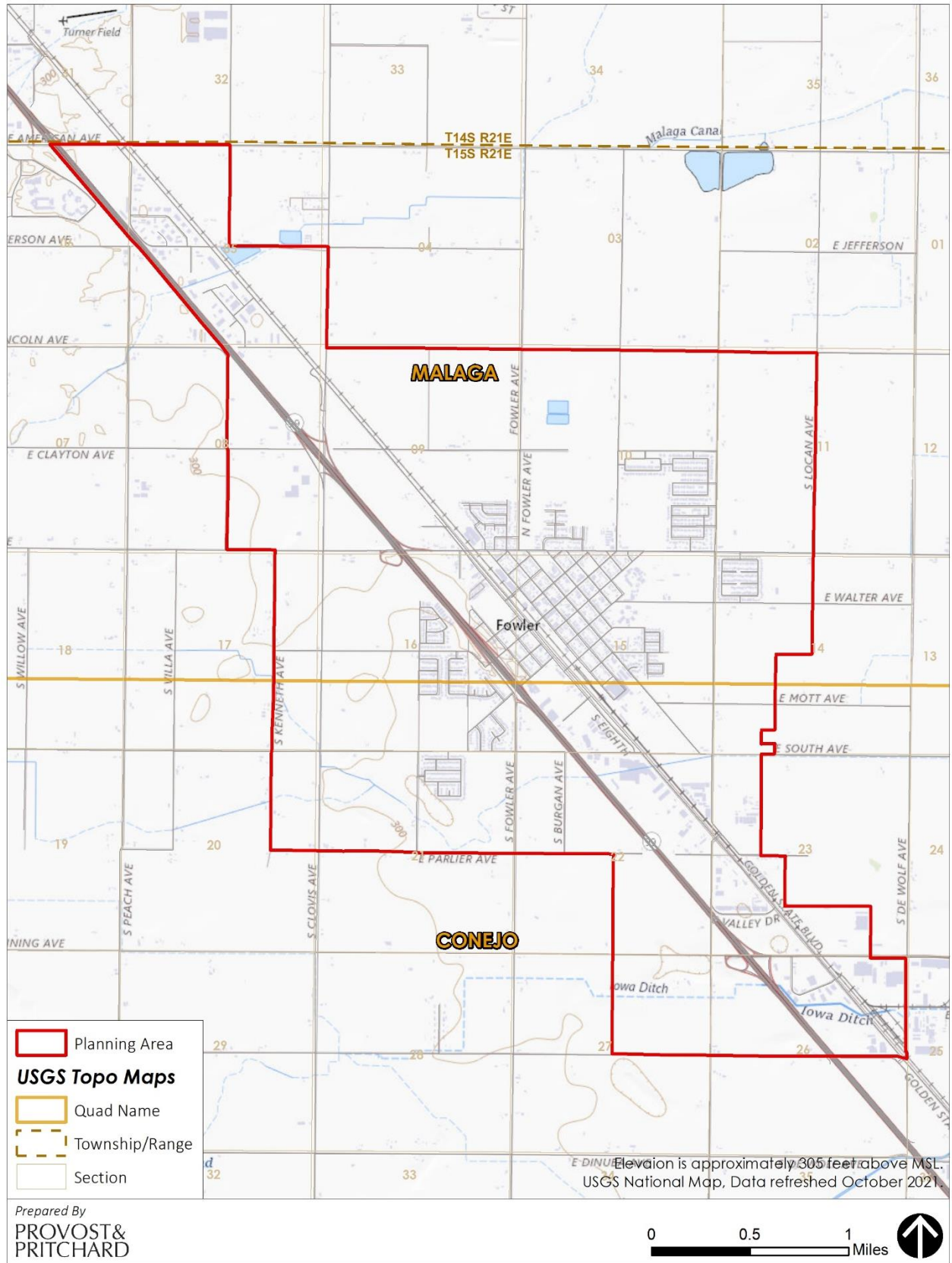


Figure 2-3: Planning Area Boundary

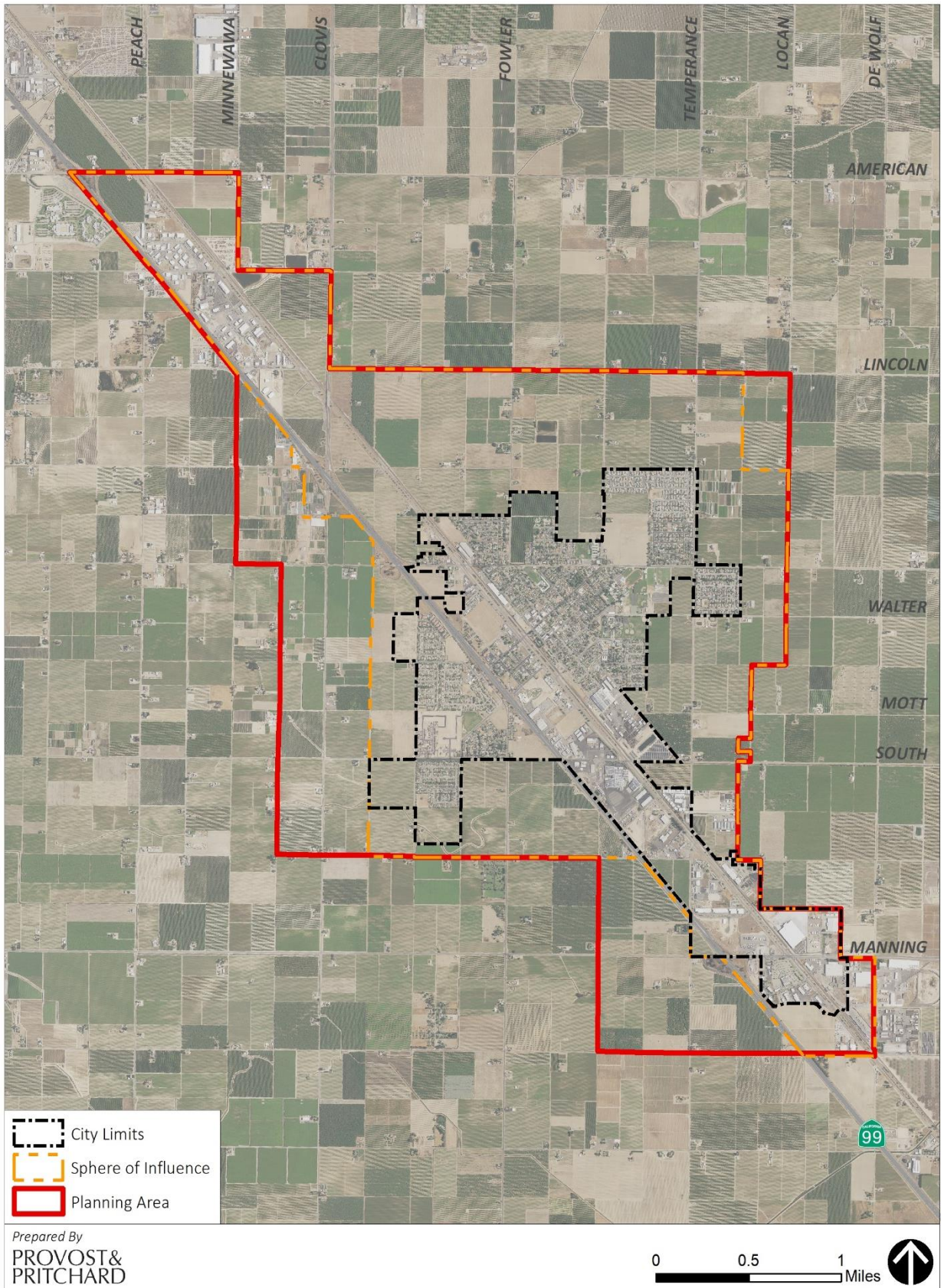


Figure 2-4: Land Use Diagram

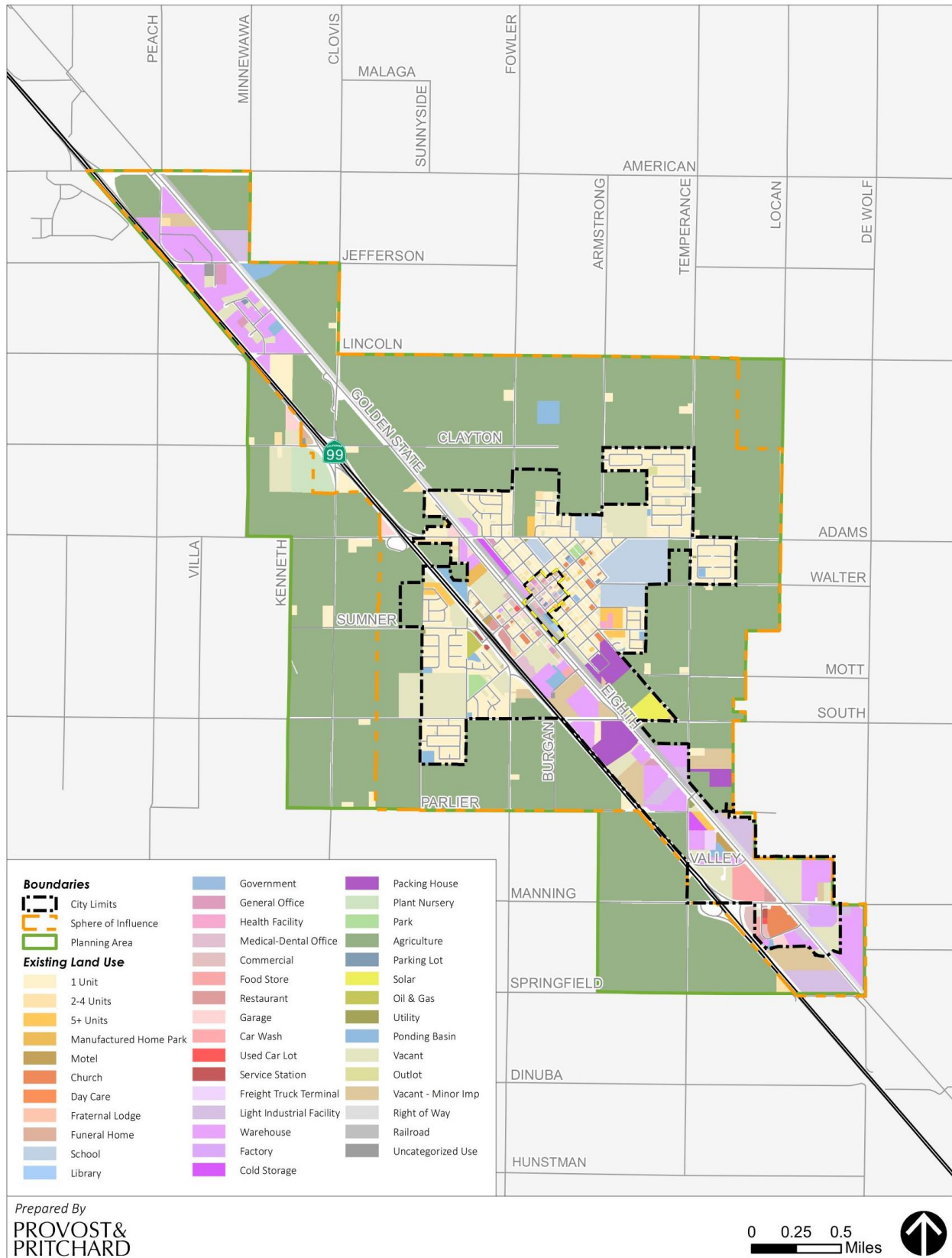


Figure 2-5: Dual Designation Map

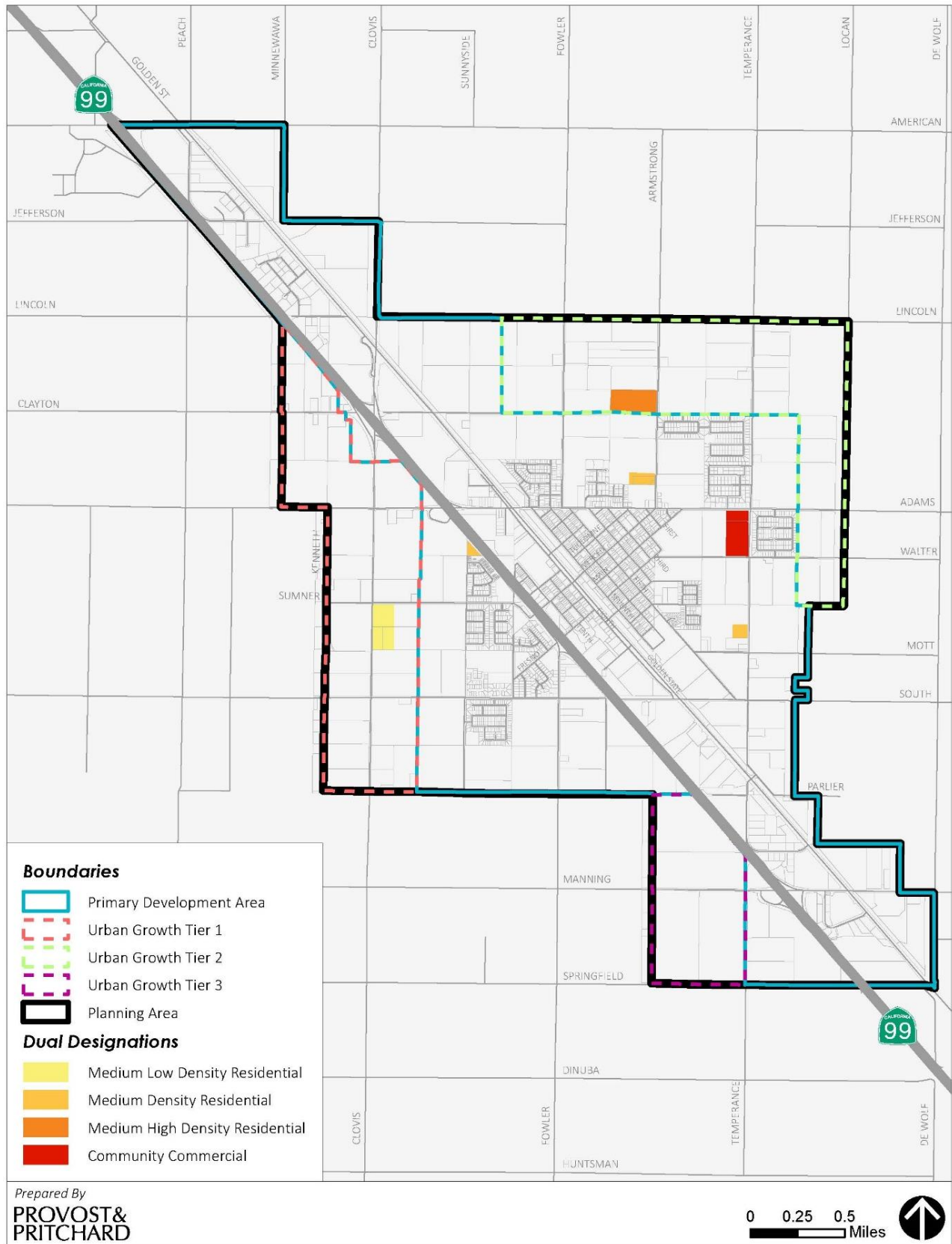
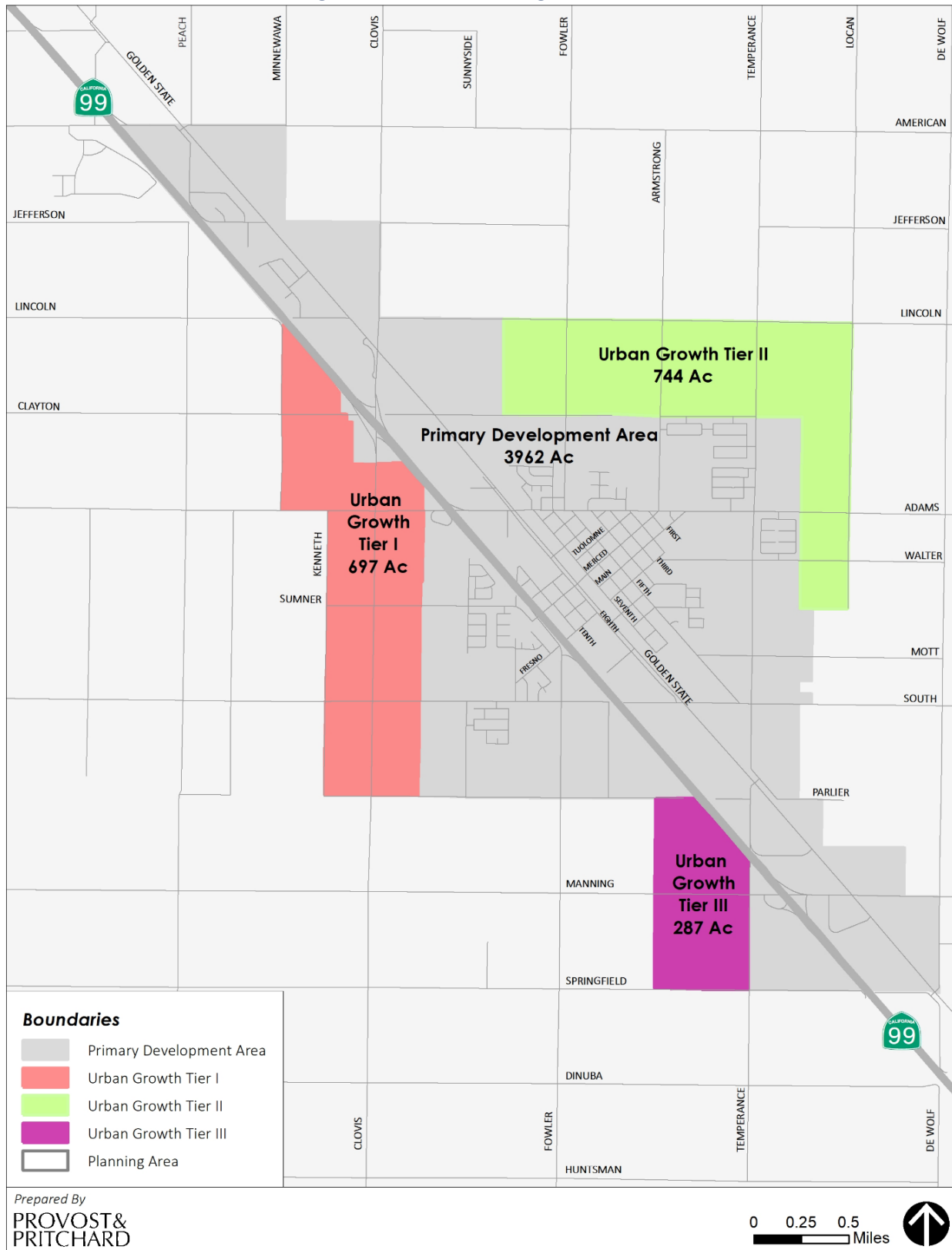


Figure 2-6: Growth Management Tiers



Chapter 3 Environmental Setting

According to CEQA Guidelines Section 15125, a DEIR must include a description of the existing physical environmental conditions in the vicinity of a project to provide the baseline condition against which project-related impacts are compared. This section provides a general overview of the environmental setting for the proposed Fowler 2040 GP. More detailed descriptions of the environmental setting for each environmental issue area can be found in 3.3.

3.1 Regional Setting

Fowler is in the south-central area of Fresno County in the central San Joaquin Valley. Fowler is bisected by SR 99, Union Pacific Railroad, and Golden State Boulevard, approximately 11 miles south of the City of Fresno, and 5 miles of the City of Selma. Other incorporated cities near Fowler include Selma (5 miles to the southeast), Kingsburg (10 miles to the southeast), Reedley (13 miles to the southeast), Parlier (8 miles to the southeast), and Sanger (8 miles to the northeast) (See [Figure 2-1](#)). Fowler's SOI abuts that of the City of Selma to the southeast. Fowler is located on relatively level land with an elevation of 308 feet. The San Joaquin River and the Kings River are the two principal drainages within the San Joaquin Valley. Fowler is located roughly 16 miles south of the San Joaquin River and 10 miles northwest of the Kings River. Fowler is mostly surrounded by agricultural land except for the south boundary of the city which is surrounded by heavy industrial uses. While the region is not in high-risk zones for most natural hazards, extreme heat and drought are common risks, and ground shaking could occur in the event of an earthquake.

3.2 Physical Setting

3.2.1 Topography and Hydrology

Fowler is located on the Valley floor, which largely consists of flat, nearly level topography lacking substantially or obvious geologic landforms. The Valley is generally defined by the Sierra Nevada Mountain Range and foothills to the east, the Coastal Ranges to the west, and the Tehachapi Mountains to the south.

Fowler is located within the Kennedy Pond watershed; Hydrologic Unit Code: 180300090206. The San Joaquin River and the Kings River are the two principal drainages within the San Joaquin Valley, and Fowler is generally located approximately 18 miles south of the San Joaquin River and 9 miles northwest of the Kings River.

3.2.2 Climate

The San Joaquin Valley Air Basin (SJVAB), in which Fowler is situated, has an inland Mediterranean climate characterized by warm, dry summers and cooler winters. Summer temperatures often exceed 100°F and can vary as much as 30°F. Winters are for the most part mild and humid, with average high in the 50s, while the average daily low temperature is approximately 45°F. The surrounding topographic features restrict air movement through and out of the basin and, as a result, the SJVAB is highly susceptible to pollutant accumulation over time. Inversion layers are formed in the SJVAB throughout the summer and winter; and inversion layer is created when a mass of warm air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor.¹ According to the United

¹ (Kings County Council of Governments 2018)

States Environmental Protection Agency (USEPA), the San Joaquin Valley has some of the nation’s worst air quality.²

The SJVAB is generally considered to have a Mediterranean climate, characterized by sparse rainfall and hot, dry summers. With an average of over 260 sunny days per year, the SJVAB provides favorable conditions for ozone formation. While precipitation and fog during the winter block sunlight and reduce ozone concentrations, wintertime fog provides favorable conditions for the formation of particulate matter.

3.2.3 Demographics

Fowler was incorporated June 15, 1908, and in 1910 it recorded a population of 675. In 1920 Fowler had a population of 1,528.³ In 2004, Fowler had approximately 1,445 homes and the population had increased from 2,245 in 1974,⁴ to 4,100 in 2004,⁵ nearly doubling in size over 30 years. Since 2004, Fowler has experienced continued growth in the form of new dwelling unit production at an average annual rate of 2.4 percent, according to building permits issued by Fowler. As of January 1, 2019, Fowler contained 2,061 housing units and 6,605 residents.⁶ According to the State Department of Finance compounded annual growth rate data, Fowler is projected to have a higher growth rate but would add just 4,130 persons between 2015 and 2050.

Fowler has 1,828 households, according to the 2019 United States Census Bureau. A household includes all people living together in a housing unit, which may include one or more families living together, a person living alone, or a group of related or unrelated people. Fowler’s households have an average of 3.37 people. This is slightly higher than the averages for Fresno County and California, which are 3.16 and 2.96 respectively.

Fowler is primarily Hispanic, with Hispanics and Latinos representing 68.7 percent of the total population. White and Asian people comprise the next largest ethnic groups, representing 17.4 percent and 9.7 percent of Fowler’s population, respectively.⁷ A more detailed breakdown is provided in [Table 3-1](#).

Table 3-1: Fowler Ethnic Population as of 2019

	Number	Percent
White	1,079	17.4%
Black or African American	11	0.2%
Asian ¹	605	9.7%
American Indian/Alaska Native	14	0.2%
Hawaiian and Pacific Islander	0	0.0%
Some other race	0	0.0%
Two or more races	234	3.8%
Hispanic or Latino (of any race)	4,257	68.7%
Total	6,200	100.0%
¹ Including South Asian Populations		

3.3 Land Use Setting

² (United States Environmental Protection Agency 2018)

³ (Woeste 1998)

⁴Ibid.

⁵ (United States Census Bureau 2019)

⁶ (State of California Department of Finance 2021)

⁷ (United States Census Bureau 2019)

3.3.1 Existing Land Uses

An existing land use represents the use that currently occupies a property. Existing uses are distinguishable from the planned land use or applicable zone district of a property, as it is often the case that the existing use on a property differs from what would be allowed as new development. The distribution of the existing land uses is shown in **Figure 3-1**.

The breakdown of the existing land uses within the City limits, SOI, Expansion Area, and total planning area can be found in **Table 3-2**. Residential uses make up the largest category within the city limits at nearly 31 percent, followed by vacant land at 22 percent. Agricultural uses make up a significant portion of both the SOI and expansion area, at 84.2 percent and 89.7 percent, respectively. Within the overall planning area, agriculture occupies 63.9 percent of the land, residential uses occupy approximately 10 percent, industrial uses make up 9.4 percent, while commercial and office uses occupy just 2.7 percent. Public uses, such as churches, government facilities, schools, and other utilities, occupy an additional 5 percent. The remaining 9 percent comprises vacant land and right-of-way. Most existing development lies on the east side of SR 99, although substantial residential development exists to the west. Retail and industrial uses are generally clustered along the eastern side of SR 99.

Table 3-2: Existing Land Uses

Existing Land Use	City Limits Acres (%)	Sphere of Influence ^a Acres (%)	Expansion Area ^b Acres (%)	Planning Area ^c Acres (%)
Residential Uses	378.1 (30.8%)	46.1 (1.8%)	17.7 (2.8%)	441.9 (9.9%)
1 Unit	334.9	41.6	17.8	394.35
2-4 Units	14.2	4.0	5.0	23.2
5+ Units	24.0	0.5	-	24.5
Manufactured Home Park	5.0	-	-	5.0
Commercial and Office Uses	69.1 (5.6%)	29.6 (1.1%)	23.9 (3.8%)	122.6 (2.7%)
Commercial	3.5	-	-	3.5
Day Care	8.0	5.2	-	13.2
Food Store	0.3	-	-	0.3
Fraternal Lodge	18.8	-	-	18.8
Funeral Home	1.0	-	-	1.0
Garage	0.4	1.4	-	1.9
General Office	8.7	3.2	5.1	17.0
Medical-Dental Office	4.9	5.7	-	10.7
Motel	5.1	-	-	5.1
Parking Lot	5.3	-	-	5.3
Plant Nursery	1.6	1.1	-	2.7
Restaurant	-	13.0	18.8	31.8
Service Station	8.5	-	-	8.5
Used Car Lot	1.9	-	-	1.9
Industrial Uses	223.7 (18.2%)	197.1 (7.6%)	0.0 (0%)	420.8 (9.4%)
Cold Storage	8.5	-	-	8.5
Factory	12.2	-	-	12.2
Freight Truck Terminal	4.2	-	-	4.2
Light Industrial Facility	32.7	44.2	-	76.9
Packing House	45.3	9.5	-	54.8
Warehouse	120.8	143.4	-	264.2
Public/Quasi-Public and Institutional Uses	191.3 (15.6%)	29.9 (1.2%)	0.0 (0%)	221.2 (5%)
Church	18.4	-	-	18.4
Government	1.7	-	-	1.7
Health Facility	2.4	-	-	2.4
Library	0.7	-	-	0.7
Oil, Gas	4.6	-	-	4.6

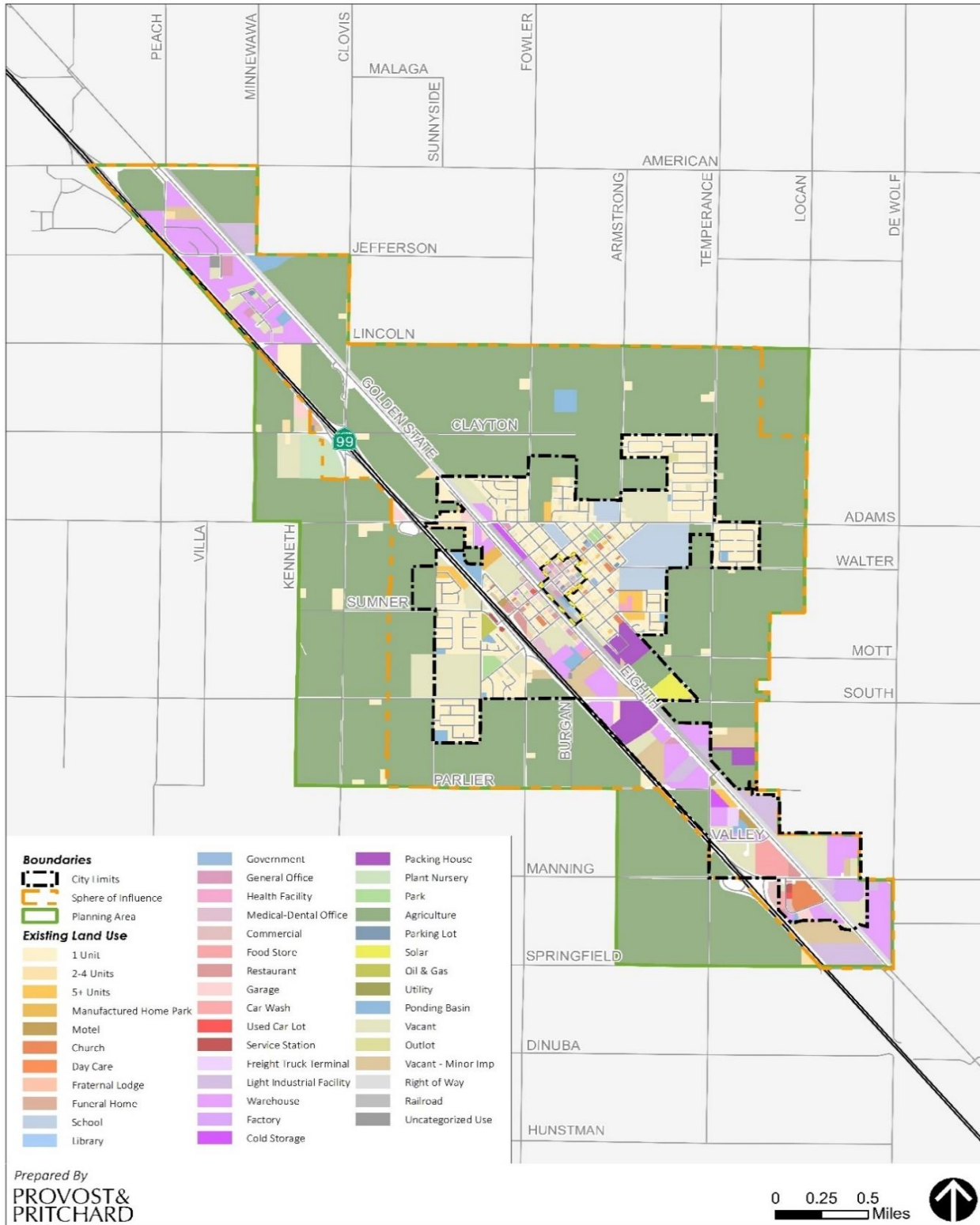
Existing Land Use	City Limits Acres (%)	Sphere of Influence ^a Acres (%)	Expansion Area ^b Acres (%)	Planning Area ^c Acres (%)
Park	8.0	-	-	8.0
Ponding Basin	24.1	22.1	-	46.2
Railroad	27.8	7.8	-	35.6
School	85.7	-	-	85.7
Solar	15.8	-	-	15.8
Utility	2.2	-	-	2.2
Agriculture	96.7 (7.9%)	2185.4 (84.2%)	567.2 (89.7%)	2849.4 (63.9%)
Agricultural crops	96.7	2185.4	1,075.2	3,357.0
Vacant and Right-of-Way	270.2 (22%)	108.1 (4.2%)	23.8 (3.8%)	402.1 (9%)
Vacant	208.8	36.2	23.8	268.8
Vacant – Minor Improvements	42.6	49.0	-	91.6
Right-of-Way	18.7	22.9	-	41.6
TOTAL	1229.0	2596.3	632.6	4457.8
^a Includes acreage in the SOI boundary, exclusive of acreage in Fowler limits.				
^b Includes acreage in the Expansion Area, exclusive of acreage in Fowler limits and SOI.				
^c Includes acreage in City limits, SOI, and Expansion Area				

3.3.2 Existing Access and Transportation Network

The roadway system within the planning area includes SR 99 as well as numerous city streets and county routes. Fowler’s current street hierarchy, also known as a functional classification system, groups streets into categories. There are five existing road classifications within the planning area: freeways, expressways, arterials, collectors, and local streets. SR 99 is the major regional transportation route into and out of Fowler.

There are three exits from SR 99 that provide access directly into Fowler: Adams Avenue, Merced Street, and Manning Avenue. Other commonly used entrances into Fowler include North Fowler Avenue, South Fowler Avenue, South Temperance Avenue, Golden State Boulevard, and East South Avenue. While SR 99 provides easy access to northern and southern California from Fowler, it also acts as a dominant physical barrier, separating the city into eastern and western areas. Only Adams Avenue, Merced Street, and Manning Avenue provide access across the highway, limiting the flow of both automobile and pedestrian traffic between the east and west sides of Fowler.

Figure 3-1: Existing Land Uses⁸



⁸ (Fresno County 2019)

Chapter 4 Environmental Impact Analysis

This analysis addresses the potential for significant environmental effects that may occur as a result of implementation of the Fowler 2040 GP. Significant effect is defined by CEQA Guidelines Section 15382 as:

“a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.”

The assessment of each issue area begins with a discussion of the environmental baseline conditions related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by Fowler and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential impacts are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

Significant and Unavoidable. An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the CEQA Guidelines.

Less than Significant with Mitigation Incorporated. An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the CEQA Guidelines.

Less than Significant. An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.

No Impact. The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mandatory policies and identified, feasible, mitigation measures that would eliminate or reduce the corresponding potentially significant environmental impacts. The analysis then discusses the residual or remaining impacts and the resulting level of significance after implementation of the policies and mitigation measure(s). The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed Project in conjunction with other planned and pending developments as identified in [Section 2.5](#).

Because the proposed project is a general plan, cumulative impacts are treated somewhat differently than would be the case for a project-specific development. CEQA Guidelines Section 15130(b)(1)(B) provides the following direction relative to cumulative impact analysis. The discussion:

“should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted

or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.”

By its nature, a general plan considers cumulative impacts as far as it considers cumulative development that could occur within a city’s plan area. Therefore, the analysis of project impacts effectively constitutes the cumulative analysis.

4.1 Cumulative Development

CEQA defines cumulative impacts as two or more individual actions that, when considered together, are considerable or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development facilitated by the Fowler 2040 GP and other nearby projects. For example, traffic impacts of two nearby projects may be less than significant when analyzed separately but could have a significant impact when analyzed together. Cumulative impact analysis allows an to provide a reasonable forecast of future environmental conditions and can more accurately gauge the impacts of a series of projects. CEQA does not require an analysis of incremental impacts that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the .

Because the proposed project is the GP, cumulative impacts are treated somewhat differently than would be the case for a project-specific development. Section 15130 of the CEQA Guidelines provides the following direction relative to cumulative impact analysis:

“Impacts should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.”

By its nature, a general plan considers cumulative impacts as far as it considers cumulative development that could occur within a city’s planning area over a defined timeframe.

4.2 Aesthetics

This section evaluates impacts to aesthetic resources, including scenic vistas, scenic resources, visual character and quality, and light and glare that could result from implementation of the Fowler 2040 GP.

4.2.1 Environmental Baseline

General Visual Character

Fowler is located in Fresno County, which is located in the San Joaquin Valley. Like most cities in the San Joaquin Valley, Fowler is an agricultural community that is surrounded by farmland. Fowler is situated between the Sierra Nevada Mountain Range to the northeast and the Coastal Mountain Range to the west. Fowler is located approximately 11 miles from downtown Fresno, the most populous city in the San Joaquin Valley. The nearest scenic resource that can be viewed from Fowler is the Sierra Nevada Mountain Range approximately 40 miles to the northeast. Additionally, the Coastal Mountain Range, approximately 45 miles east of Fowler, runs northwest-southeast along the California coast sprawling inland easterly. Fowler's center is a commercial hub with residential neighborhoods radiating outward.

Fowler features a flat landscape organized around a primarily orthogonal system of roadways. Most of Fowler's land area is developed with low-density residential neighborhoods. Because the community started as a farming town and is still surrounded by agricultural land uses, it retains a rural, small-town atmosphere. The suburban/rural interface is most prominent on Fowler's eastern, western, and southwestern edges. In these locations, new housing subdivisions are sited between working farms and large residential estate lots of two to five acres. The area beyond Fowler's boundaries to the west, east, northeast, and north is dominated by agricultural uses and undeveloped open spaces.

Scenic Vistas

Scenic vistas may be designated at the federal, State, or local level and generally includes an expansive view, usually from an elevated point or open area. A designated scenic vista is a view that possesses visual and aesthetic qualities of high value to the community. Scenic vistas can provide views of natural features or significant structures and buildings.

Scenic Resources

Scenic resources contribute to a sense of community identity and can provide economic value from tourism. The definition and value of a scenic resource is subjective, but the term generally refers to the uniqueness, unity, and appeal of a view. In a city context, this can mean a variety of things, including views and viewpoints, scenic corridors, view streets, and visual focal points. It should be noted that scenic resources can be elements of either the natural or built environment valued for aesthetics. In Fowler there are two main sources for scenic resources: 1) built structures that help define the identity and aesthetic quality of Fowler (including gateways providing identifiers unique to Fowler, signaling the entrance to the city), and 2) views of the natural and human made landscape, including the Sierra Nevada mountains and agricultural land. Existing Community Gateways are shown in [Figure 4-2](#). The "Blossom Trail", a trail that is characterized by orchard groves that blossom each spring, is located within the vicinity of Fowler, to the northeast of the planning area.⁹

Light and Glare

Within the city limits of Fowler, homes and businesses emit light both during the day and night. Light sources present within developed areas of the City and would be included as new development occurs

⁹ (Fresno County 2022)

within the planning area. Light and glare from indoor or outdoor uses can reduce visibility of the night sky, create potential hazards to drivers, and be a nuisance to residential areas. The planning area has typical light conditions found in suburban areas (e.g., roadway lighting, commercial parking lot and building lighting, residential buildings, headlights from motor vehicles). Sources of daytime glare include direct beam sunlight and reflections from windows, architectural coatings, glass, and other shiny reflective surfaces. Nighttime lighting and associated glare is produced by both stationary and mobile sources. Stationary sources of nighttime light include structure illumination, decorative landscape lighting, lighted signs, and streetlights. The primary source of mobile nighttime light is motor vehicle headlights, particularly from SR 99 and other high-traffic roadways. Sources of light and glare in residential areas include street lighting along major roads, residential security lighting, and parking lot lighting. In commercial and industrial areas, parking lots, lighted signage, and strip mall development are sources of light pollution.

Figure 4-1: Community Gateway Sign



4.2.2 Regulatory Setting

Federal

There are no federal regulations, plans, programs, or guidelines associated with aesthetics that are applicable to the Project.

State

California Scenic Highway Program

Caltrans maintains the California Scenic Highway Program to protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to those highways. The Caltrans Scenic Highway program allows local jurisdictions to officially designate a scenic highway to ensure protection of the visual resources along its corridor. Caltrans identifies highways as eligible for the program, and the local

jurisdiction submits an application to be officially designated. The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.¹⁰ Protection of visual resources for the designated corridor include regulating land use and development, outdoor advertising, landscaping, and building design.

California Building Code

The California Building Code (CBC), Part 2 of Title 24 in the CCR, is based on the International Building Code and combines three types of building standards from three different origins:

- Building standards that have been adopted by State agencies without change from building standards contained in the International Building Code;
- Building standards that have been adopted and adapted from the International Building Code to meet California conditions;
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the International Building Code that have been adopted to address particular California concerns.

The CBC includes standards for outdoor lighting that are intended to improve energy efficiency, and to reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

Scenic Rivers

According to Rivers.org, there are no wild and scenic rivers located within the planning area.¹¹ The nearest wild and scenic river to Fowler is the Kings River, which is officially designated approximately 42.5 miles to the northeast of Fowler and runs northeast to southwest.

Scenic Highways

According to Caltrans, there are no designated scenic highways within the Project area.¹² The nearest officially designated scenic highway is State Route 180, approximately 14.5 miles to the northeast of the city. The FCOG is working on a “Highway 99 Beautification” project that involves the portion of SR 99 that runs through Fowler. A master plan for the project was released in 2016 and is currently being implemented.¹³

Local

Fowler Municipal Code

The Fowler Municipal Code contains standards and regulations that help shape the aesthetic character of Fowler and are used to implement and enforce the goals and policies of the GP. The following regulations aim to maintain the aesthetic quality of Fowler:

- Title 5, Chapter 21: Nuisances – addresses property nuisances related to neighborhood preservation (5-21.101), weeds, vegetation and rubbish (5-21.102), garbage (5-21.103), inoperative or abandoned motor vehicles (5-21.104), and nuisance vacant buildings (5-21.301). The City regulates property maintenance and appearance and restricts any conditions which the City has determined to be a visual nuisance or offense.

¹⁰ (California Department of Transportation 2022)

¹¹ (National Wild and Scenic Rivers System 2022).

¹² (California Department of Transportation 2022)

¹³ (Fresno Council of Governments 2021)

- Title 8, Chapter 10: Administrative Code - regulates the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, occupancy, equipment, use height area, and maintenance of all buildings and structures and equipment as therefor in the Fowler, and providing for the issuance of permits and the collection of fees therefor, the City adopts the 1994 edition of the Uniform Administrative Code and all appendix, as prepared by the International Conference of Building Officials.
- Title 10, Chapter 1: City Parks and Recreation – establishes rules and regulations for activities permitted within City parks and other public facilities to protect the aesthetic quality of the public spaces. Such activities prohibited include the destruction of vegetation or soil, littering, and posting or removing signs.

Fowler Building Code

This ordinance is found in Title 5, Chapter 21: Article 2 of the Municipal Code. Fowler acts in accordance with the current regulations of the California Building, Fire, Housing, Plumbing, Mechanical, Electrical, and related codes, as well as the Uniform Administrative Code and Uniform Code for the Abatement of Dangerous Buildings. Violations of this ordinance are considered a nuisance.

Street Tree Law of the Fowler

Found in Title 7, Chapter 1 of the Municipal Code, this law regulates the planting, trimming, pruning, and removal of any tree or shrub within any public area and prohibits such activities without the permission of the City Superintendent.

Fowler Zoning Ordinance

Land uses established by the GP are implemented by other local regulatory documents, primarily the Zoning Ordinance. The Zoning Ordinance classifies all land within the city limits in order to regulate “the uses of land; the density of population; the uses and locations of structures; the height and bulk of structures; the open spaces about structures, the appearance of certain uses and structures; the areas and dimensions of sites; the location, size and illumination of signs and requiring off-street parking and off-street loading facilities.” Because the GP and Zoning Ordinance work together to regulate development activity, all aspects of zoning are required to be consistent with the General Plan.

4.2.3 Methodology and Thresholds of Significance

The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Reactions to the same aesthetic conditions vary based on the viewer. This section evaluates the anticipated changes in Fowler’s visual environment from existing conditions to buildout of the Fowler 2040 GP. It is important to underscore that the Project is a general plan and does not propose specific development. This analysis therefore focuses on land use and infrastructure changes envisioned under the Fowler 2040 GP, and their aesthetic impacts on the community in terms of arrangement of development to open space, density and intensity of development, and lighting sources. Individual projects would be subject to design review for consistency with adopted standards and potential environmental impact evaluation when proposed. State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to aesthetics. The Fowler 2040 GP would have a significant impact if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly

accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or

- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

4.2.4 Impacts

Threshold 1: Would the Project have substantial adverse effect on a scenic vista?

No Impact. Fowler has not designated specific scenic vistas for protection, nor has Fresno County designated such vistas in the immediate vicinity of Fowler. There are also no designated State scenic highways or scenic rivers in the planning area. Fowler is an agricultural community that is surrounded by farmland and is situated approximately 40 miles west of the Sierra Nevada Mountain Range. Although agricultural land could be considered to have scenic qualities, it is not a designated scenic resource by any applicable regulation. In the same manner, the Sierra Nevada Mountain Range could subjectively be considered to be of scenic quality it is not a designated scenic resource by any applicable regulation. As there are no scenic vistas within Fowler, development as proposed in the Fowler 2040 GP would have no impact on a designated scenic vista.

Threshold 2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. Fowler is located on the San Joaquin Valley floor, which is characterized by its generally flat topography. Due to its flat topography, Fowler does not have any geologic formations considered to be scenic. According to Caltrans, there are no designated scenic highways within the Project area with the closest designated scenic highway located approximately 14.5 miles to the northeast. While there are no scenic highways within Fowler or in its vicinity, Fresno COG has adopted the “Highway 99 Beautification Master Plan”, which has been adopted for the purpose of providing an aesthetically pleasing corridor from the San Joaquin River to the Kings River, where Highway 99 bisects communities within Fresno County.. In order to facilitate visually appealing development along the SR 99 corridor, the Fowler Municipal Code (FMC) contains the Highway Beautification Overlay District, which applies enhanced development standards to land adjacent to the highway. However, as Fowler does not contain scenic resources within a State scenic highway, there would be no impact.

Threshold 3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. Fowler does not fall within the definition of ‘urbanized area’ in CEQA Guidelines Section 15387. That said, Fowler possesses many urban characteristics. Its central core contains residential, commercial, and public uses with industrial development extending north and south along Golden State Boulevard and additional residential development extending west and east away from the core; this type of development is typical of a city. In contrast, the perimeter of Fowler is bordered primarily by agricultural land.

The planning area consists of the incorporated limits of Fowler along with surrounding portions of unincorporated Fresno County. Zoning and other regulations governing scenic quality applicable to the Fowler include FMC provisions relating to development review and subdivision design. Policies in the Fowler 2040 GP are intended to complement and further the intent of these provisions regulating scenic

quality and resources and design guidelines, and any development occurring under the Fowler 2040 GP would be subject to regulations in the FMC.

Development accommodated under the Fowler 2040 GP would result in an incremental increase in new residential, commercial, and industrial uses within planning area. However, new development or redevelopment being under the Fowler 2040 GP would comply with applicable zoning and other regulations governing scenic quality. For these reasons, the impact of the Project on scenic quality within Fowler would be less than significant.

Threshold 4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant. Nighttime illumination and glare impacts are effects of a project’s exterior lighting upon adjoining uses and areas.

New development resulting from implementation of the Fowler 2040 GP would necessitate the use of additional light fixtures and would contribute to existing conditions of light and glare. New light sources may include residential and non-residential interior and exterior lighting, parking lot lighting, commercial signage lighting, and lamps for streetscape and public recreational areas. Most new development resulting from the Project would take place in or near developed and urbanized areas, where moderate light and glare already exist, and would not be out of character with the urban environment. The FMC contains provisions that would limit light and glare for new residential and non-residential development, including shielding light sources from neighboring properties or public rights-of-way. Further, policy CH-5 and CDES-19 and action items CDES 19a and CDES-23a, as outlined below, further limits the impact of new sources of light and glare on surrounding areas.

Policy CH-5 Establish lighting standards that limit public lighting to produce a warm color temperature that protects circadian rhythms.

Policy CDES-19 Require commercial projects to provide transitions when new or expanded commercial development is proposed adjacent to planned or zoned residential areas.

Action Item CDES-19a Review and revise, as needed, the Zoning Ordinance to integrate compatibility standards for commercial development adjacent to residential and other sensitive users. Such compatibility standards shall address, at a minimum, increased building setbacks, enhanced landscaping, lighting standards, masonry wall requirements, and/or loading or operational limitations.

Action Item CDES-23a Adopt industrial standards in consideration of the following design principles:

Exterior lighting should be integrated within the architectural design for industrial buildings. Light sources should not be visible and should be shielded to reflect down onto the ground and not into streets or neighboring property. Utility connections should be coordinated with architectural elements of the site and/or building so as not to be a visual nuisance. Utilities should be underground or screened from view from the street.

Storage facilities should be screened and constructed to prevent visual clutter.

Permanent outdoor storage should be screened by landscaping or materials compatible with the surrounding buildings’ architecture.

Varied architectural details should be applied to all façades exposed to public view. Blank end walls and long, monotonous façades shall be avoided. Treatments shall include architectural features, landscaping, or art elements that tie into the overall design theme.

Compliance with existing regulations, such as the FMC, as well as the Fowler 2040 GP policy and action item listed above would ensure that potential impacts related to light and glare are less than significant.

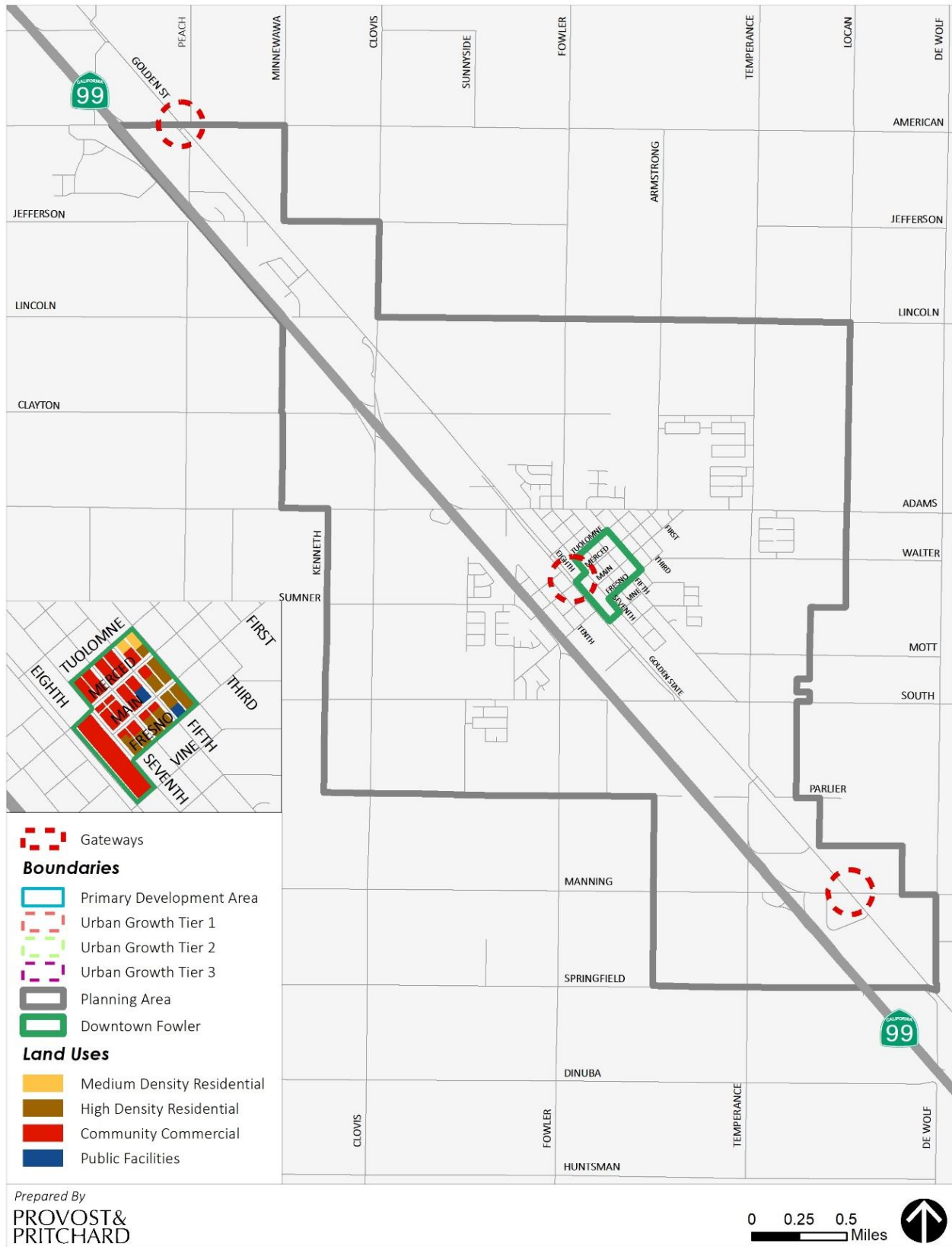
4.2.5 Mitigation Measures

Mitigation measures are not required.

4.2.6 Cumulative Impacts

The scope for considering cumulative impacts to aesthetics are the geographic areas covered by the Fowler 2040 GP planning area. Cumulative development in the planning area would intensify urban development. This new development would incrementally contribute to regional urbanization in Fresno County. However, the overall land use vision and policies in Fowler 2040 GP would ensure the visual compatibility of new development with the existing community and would minimize degradation of scenic resources. As described above, construction of future development projects allowed under full buildout would be required to comply with regulatory requirements and the policies and action items related to the preservation and enhancement of viewsheds and the protection of scenic resources. Accordingly, the Project would have a less than cumulatively considerable impact to visual and scenic resources.

Figure 4-2: Community Gateways and Downtown Area



4.3 Agriculture and Forestry Resources

This section evaluates impacts to agricultural resources within the planning area, including direct impacts associated with the conversion of agricultural land to non-agricultural use and potential indirect impacts to adjacent agricultural operations that could result from implementation of the Fowler 2040 GP.

4.3.1 Environmental Baseline

Fowler's identity, history, and economy derive from its location in a rich agricultural region. Fowler is positioned in the heart of the San Joaquin Valley of California, one of the largest producers of agricultural products in the world. This region exports billions of dollars' worth of crops every year. Fowler is a community reliant on agriculture as a major part of its economy and culture. Land surrounding the City is almost exclusively used for agricultural purposes. While most of Fowler is developed, there are some spots where agricultural uses can be found within the city limits. The CDFW and the USFS (United States Forest Service) do not recognize any of the lands in or near Fowler to contain any forest or timberland.¹⁴

Farmland Mapping and Monitoring Program:

The California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) is a non-regulatory program that produces "Important Farmland" maps and statistical data used for analyzing impacts on California's agricultural resources. The FMMP maps are updated every two years (although most recently in 2018) with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. The maps identify eight land use categories, five of which are agriculture related: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land – rated according to soil quality and irrigation status. Each is summarized below:¹⁵

- PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non- irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- GRAZING LAND (G): Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.
- URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential,

¹⁴ (California Department of Fish and Wildlife 2022)

¹⁵ (California Department of Conservation 2022)

industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- OTHER LAND (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
- WATER (W): Perennial water bodies with an extent of at least 40 acres.

Figure 4-3 illustrates the various FMMP designations within the planning area. While the dominant designation within the city limits is “urban and built-up land,” there are also small areas of “farmland of local importance” and “other lands”. Lands surrounding Fowler are primarily designated as “prime farmland” along with some areas that are “farmland of statewide importance”. The FMMP also provides land use conversion information for decision makers to use in their planning for the future of California’s agricultural land resources.

Agricultural/Urban Interface Issues

Development within and adjacent to agricultural areas can create a variety of potential conflicts for both growers and urban uses. Existing areas of potential conflict are located in the east, south, and northwest portions of the planning area where there is active agricultural production adjacent to sensitive land uses such as residences. Potential agricultural/urban land use conflicts can arise from the following activities, among others:

Potential Concerns for Urban Neighbors

- Dust problems in vicinity of residential neighborhoods, particularly near schools;
- Odors and health concerns associated with fertilizer/pesticide application and livestock ;
- Noise related to farming equipment or farm worker activities; and
- Farmworker parking.

Potential Concerns for Agricultural Interests

- Restrictions on activity arising from neighbor concerns/complaints;
- Loss of revenue and competitiveness; and
- Competition for water and land.

4.3.2 Regulatory Setting

Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local governments and private programs and policies that protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are reviewed by a federal agency or with assistance from a federal agency. Under FPPA, farmland includes Prime Farmland, Land of Statewide or Local Importance, and Unique Farmland. Farmland subject to FPPA requirements does not

have to be currently used for crop production, but can be forest land, pastureland, cropland, or other land but does not include water bodies or land developed for urban uses (i.e., residential, commercial, or industrial uses).

The Natural Resource Conservation Service administers the FPPA and uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites of federally funded or assisted projects. This score is an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level.

Farm Bill Conservation Programs

The Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) designated funding for Natural Resource Conservation Service farmland conservation programs, including the Farm and Ranch Lands Protection Program, Wetland Reserve Program, Grassland Reserve Program, Conservation of Private Grazing Land Program, Conservation Reserve Program, Conservation Stewardship Program, Environmental Quality Incentives Program, Agricultural Water Enhancement Program, and Wildlife Habitat Incentives Program.

United States Department of Agriculture and United States Forest Service

The United States Department of Agriculture, United States Forest Service is a federal agency that manages public lands in national forests and grasslands. The United States Forest Service is the largest forestry research organization in the world and provides technical and financial assistance to State and private agencies whose purpose it is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

State

Williamson Act

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use through a tax incentive model. The intent of the program is to preserve active, productive agricultural lands by discouraging their premature and unnecessary conversion to urban uses. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Landowners may apply to contract with the local agency to voluntarily restrict their land to agricultural and compatible uses. Restrictions are enforced through a rolling 10-year term contract. Unless the landowner or the local agency files a notice of nonrenewal, the 10-year contract is automatically renewed at the beginning of each year. In return for the voluntary restriction, contracted parcels are assessed for property tax purposes at a rate consistent with their actual (agricultural) use, rather than potential market value. The 5,690-acre planning area contains approximately 1,374 acres of land under Williamson Act contracts (24.1 percent of the planning area), of which 159 acres have been non-renewed (See [Figure 4-4](#)).

Farmland Security Zones

In 1998, the State legislature established the Farmland Security Zone (FSZ) program. FSZs function similarly to Williamson Act contracts, although the land subject to the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. FSZ contracts have a minimum 20-year term, during which property owners are offered an incentive of greater property tax reductions compared to Williamson Act contract tax incentives. The nonrenewal and cancellation procedures are like those for Williamson Act contracts.

Land Evaluation and Site Assessment Model

The DOC also employs a land evaluation and site assessment model that incorporates that of the federal model and adds factors to evaluate a given project's size, the soil resource quality at the project site, water

resource availability, surrounding a soil resource quality, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. These factors are rated, weighted, and combined into numeric score that provides the basis for determining a project's potential significance relative to agricultural land conversion.

California Timberland Productivity Act

To ensure that timber resource lands are available in the future, the California Timberland Productivity Act of 1982 (GC Section 51100, et seq.) provided mechanisms by which lands being used for timber production can be zoned as "timberland production zones" where uses are limited to timber production and related activities.

Forest Practice Act

The Forest Practice Act of 1973 ensures logging is done in a manner that preserves and protects fish, wildlife, forests, and streams in the State. The California Department of Forestry and Fire Protection (CAL FIRE) enacts and enforces this and associated rules that protect these resources.

CAL FIRE ensures that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and Board rules apply to all commercial harvesting operations for landowners of small parcels, to ranchers owning hundreds of acres, and large timber companies with thousands of acres. The Timber Harvesting Plan is the environmental review document landowners present to CAL FIRE, and it outlines what will be harvested, how it will be harvested, and the steps that will be taken to prevent damage to the environment.

Urban & Community Forestry Program

Under PRC Section 4799.06, the California Resources Agency and CAL FIRE manage the California Urban Forestry Act of 1978, which offers initiatives to local jurisdictions to participate in the Urban Greening Program. This program is part of California Climate Investments, a statewide initiative to reduce greenhouse gas emissions and their effects. Adding millions of trees to urban landscapes in urban areas adds to healthy communities and supports statewide sustainability initiatives.¹⁶

Local

Local Agency Formation Commission

Under the Cortese-Knox-Hertzberg Act, each county has a Local Agency Formation Commission (LAFCo) with the power to review and act on proposals for the expansion of city or special district boundaries. LAFCos have no official authority over land use, but their boundary decisions, especially those dealing with city expansions, can influence the local pattern of urbanization and its impact on agricultural land.

Fresno County LAFCo is a five-member body with two county representatives, two city representatives, and one public member, along with three alternate members. The Commission is supported by an Executive Officer, counsel, and other staff. State law requires LAFCos to consider agricultural land and open space preservation in all decisions related to expansion of urban development.

Zoning Ordinance

Fowler's Zoning Ordinance does not contain a specific zone district for agriculture; however, the Urban Reserve zone district serves to protect lands designated for eventual urban development to ensure the orderly conversion of these lands to nonagricultural use; to preserve lands best suited for agriculture from the encroachment of incompatible uses; and to provide appropriate areas for certain open uses of land that are not injurious to agriculture but that may not be harmonious with urban uses.

¹⁶ (California Department of Forestry and Fire Protection 2022)

4.3.3 Methodology and Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to agriculture and forestry resources. The Fowler 2040 GP could have a significant impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by GC Section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

According to the California DOC, loss of prime farmland or farmland of statewide importance with a Land Evaluation and Site Assessment (LESA) score of 80 to 100 points is considered a significant adverse impact. The loss of agricultural land with a LESA score of between 60 and 79 is considered significant if either the Land Evaluation or the Site Assessment subcategories have scores of 20 or better. The loss of agricultural land with a LESA score of between 40 and 59 is considered significant if both the Land Evaluation and the Site Assessment subcategories have scores of 20 or better.¹⁷ Analysis of whether or not a project would have a significant impact under the LESA model would be considered on a case-by-case basis for individual projects.

4.3.4 Impacts

Threshold 1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Potentially Significant Impact. Development and buildout associated with the Fowler 2040 GP would result in the conversion of lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the FMMP to a non-agricultural use. The acreages of each classification of the FMMP within the Fowler planning area is contained in [Table 4-1](#) below;¹⁸ also, refer to [Figure 4-3](#) for a corresponding exhibit.

Table 4-1: FMMP Acreages

FMMP Land Designation	Acreage Within 2040 Planning Area
Urban and Built-up Land	1,682
Farmland of Local Importance	151
Prime Farmland	3,487
Rural Residential	15
Farmland of State Importance	129
Semi-Agricultural and Rural Commercial	56
Unique Farmland	58

¹⁷ (California Department of Conservation 1997)

¹⁸ (California Department of Conservation 2018)

FMMP Land Designation	Acreage Within 2040 Planning Area
Vacant or Disturbed Land	112
Total	5,690

As shown in the table above, Fowler’s 2040 planning area is inclusive of approximately 3,487 acres of Prime Farmland, approximately 58 acres of Unique Farmland, and approximately 129 acres of Farmland of State Importance, totaling approximately 3,674 acres. Development consistent with the General Plan would result in conversion of all of these lands to non-agricultural uses. The loss of Prime Farmland, Unique Farmland, or Farmland of State Importance would constitute a significant impact. Mitigation banks and conservation easements have been discussed throughout the State as a way to mitigate for the conversion of Prime Farmland, Unique Farmland, and Farmland of State Importance; however, these options would only serve to preserve agriculture in areas that are not subject to development pressures or conversion due to urban development, rather than benefiting the immediate area or project vicinity. In addition, the use of agriculture easements within the planning area as mitigation would be dependent upon voluntary agreements by landowners to sell their property. Some property owners within the planning area may be more willing to sell their land than others, which could result in a scattering of easements throughout the planning area. The resulting patchwork pattern of development would be detrimental to both the agricultural and urban uses. In lieu fees have also been discussed as a way to mitigate for the loss of agricultural lands; however, Fowler does not have a program to administer such a fee. In addition, if a mitigation fee program is established in the future, the payment for mitigation is arbitrary and is not necessarily based on an amount that corresponds to the level of mitigation that the fee provides. The fees would be used to pay for conservation and restoration in places outside of the planning area and would not necessarily result in an equal substitute for the loss of agriculture land for which the fee would attempt to mitigate. Accordingly, the use of mitigation banks, in lieu fees, and conservation easements both within and outside the planning area have been deemed infeasible. At this time, the City has not identified a measure that would mitigate the loss of Prime Farmland, Unique Farmland, and Farmland of State Importance within its planning area; however, the policies listed below would help to minimize potential impacts to an extent. The use of growth management tiers, discussed in policies LU-8 and LU-9, would ensure that growth under the Fowler 2040 GP would occur in a logical manner, helping to reduce the severity of impacts on farmland. However, due to the infeasibility of any mitigation measures to minimize the impact on the conversion of agricultural land to non-agricultural use, the Fowler 2040 GP would have a significant and unavoidable impact regarding the conversion of Prime Farmland, Unique Farmland, and Farmland of State Importance to non-agricultural use.

Policy LU-8

Annex land into the City in accordance with adopted growth management thresholds and reject proposals for annexation that do not comply with requirements of General Plan policies relating to orderly and contiguous development and provision of public services and facilities.
 Allow annexation of residential land uses in the Tier I, Tier II, and Tier III development boundaries, as shown in *Figure 4 3: Growth Management Tiers*, according to the following thresholds:

Policy LU-9

Tier I:

- Annexation of property designated Medium High Density Residential or High Density Residential may occur within Tier I once:
 - 112 building permits for new dwelling units located on property designated either Medium High Density Residential or High Density

Residential in the Primary Development Area (PDA) have been issued after December 31, 2021.

- Annexation of property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential may occur within Tier I once both of the following have occurred:
 - 1,512 building permits for new dwelling units located on property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential in the PDA have been issued after December 31, 2021.
 - 155 building permits for new dwelling units located on property designated Medium High Density Residential or High Density Residential in the PDA have been issued after December 31, 2021.

Tier II:

- Annexation of property designated Medium High Density Residential or High Density Residential may occur within Tier II once:
 - 789 building permits for new dwelling units located on property designated either Medium High Density Residential or High Density Residential in the PDA or Tier I have been issued.
- Annexation of property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential may advance to Tier II once:
 - 3,005 building permits for new dwelling units located on property designated Low Density Residential, Medium Low Density Residential, or Medium Density Residential in the PDA or Tier I have been issued after December 31, 2021.
 - 1,068 building permits for new dwelling units on property designated Medium High Density Residential and High Density Residential in the PDA or Tier I have been issued after December 31, 2021. Building permits counted towards the higher density residential threshold may also be counted towards this threshold.

Tier III:

- Annexation of property designated Medium High Density Residential and High Density Residential may advance to Tier III once:
 - 1,492 building permits for new dwelling units on property designated Medium High Density Residential or High Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021.

- Annexation of property designated Low Density Residential, Medium Low Density Residential, and Medium Density Residential may advance to Tier III once:
 - 5,245 building permits for new dwelling units on property designated Low Density Residential, Medium Low Density Residential, and Medium Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021.
 - 2,053 building permits for new dwelling units on property designated Medium High Density Residential or High Density Residential in the PDA, Tier I, or Tier II have been issued after December 31, 2021. Building permits counted towards the higher density residential threshold may also be counted towards this threshold.

Exceptions: The following exceptions apply to the growth thresholds for each growth tier:

- The development of deed restricted affordable housing may occur in the next growth tier, regardless of whether the building permit issuance threshold in the previous tier has been met.
- The City may provide an exception to the growth tier thresholds for master planned properties that include properties within two growth tiers.

Policy SAF-33

Promote the preservation and economic viability of agricultural land adjacent to the Fowler Planning Area.

**Action Item
SAF-33a**

Amend local ordinances to require open space or other buffers for new development abutting agricultural areas planned for long-term use.

**Policy SAF-34
Action Item
SAF-34a**

Discourage the premature conversion of productive agricultural lands. Utilize master plans and the Capital Improvement Program (CIP) to implement the extension of urban services efficiently and responsibly.

**Action Item
SAF-34b**

Support the use of Williamson Act contracts to prevent the premature conversion of farmland and review and revise, as needed, the Fowler Municipal Code to facilitate the continuation of Williamson Act Contracted parcels, as appropriate, following annexation.

**Action Item
SAF-34c**

Review and revise, as appropriate, zoning regulations allowing for continued agriculture uses in the City limits where no development is proposed in the near-term.

Policy SAF-35

Require new development occurring in proximity to existing agricultural uses to acknowledge the potential effects of agricultural operations.

**Action Item
SAF-35a**

Adopt a Right-to-Farm Ordinance.

**Action Item
SAF-35b**

Prior to adoption of a Right-to-Farm Ordinance, continue to require that purchasers of homes located in the vicinity of agricultural operations be provided a Right-to-Farm notification of such activities by way of deeds and/or escrow documentation.

Compliance with Fowler 2040 GP policies LU-8, LU-9, SAF-33, SAF-34, SAF-35, and action items SAF-33a, SAF-34a, SAF-34b, SAF-34c, SAF-35a, and SAF-35b, and the use of growth management tiers, as discussed

above, would help to reduce the severity of many potentially significant impacts to agricultural resources, however, not all impacts to agricultural resources would be able to be reduced to a less than significant level. As a result, impacts would be significant and unavoidable..

Threshold 2: Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Potentially Significant Impact. Fowler’s Zoning Ordinance does not contain a specific zone district for agriculture; however, agricultural land that is currently within Fresno County (zoned AE-20; Exclusive Agriculture, 20-Acre Minimum) would be annexed into Fowler to facilitate development and would be rezoned for non-agricultural use pursuant to GC Section 65859; such rezoning would become effective upon completion of the annexation. Development of the planning area boundary is likely to result in the conversion of land currently under a Williamson Act contract to a non-agricultural use. According to 2016 data from the County, the 2040 planning area includes approximately 1,374 acres that were under a Williamson Act contract (See [Figure 4-3](#)). The DOC is in the process of developing the 2018 data sets for the FMMP mapping tool. As a result, the 2016 data used in this document is the most recently available data for FMMP mapping. Prior to development of land subject to a Williamson Act contract, the contract must either expire through the nonrenewal process or the owner must petition the City or County (whichever has land use jurisdiction at the time of the request) to cancel the contract. Among other provisions, cancellation requires the owner to pay a penalty equal to 12.5 percent of the market value of the land. Buildout of the Fowler 2040 GP would require nonrenewal and/or cancellation of all Williamson Act contracts within the planning area. While new Williamson Act contracts could be created, they would be required to be within an agricultural preserve and require an agreement between a landowner and the city or county.¹⁹ The conflict with and cancellation of a Williamson Act contract to facilitate future development would constitute a significant impact. In addition, while future development could be planned in such a way to avoid Williamson Act parcels to the extent possible, this would create a development structure that is non-contiguous with the rest of existing Fowler. Development in a non-contiguous manner would create inefficiencies in infrastructure, circulation, and other services provided to the residents of Fowler and therefore is infeasible. In addition, this solution has the potential to create County islands, which runs contrary to LAFCo’s statutory obligations, nor would Fowler be likely to approve development in this manner. Therefore, no feasible mitigation measures have been identified in relation to the cancellation of Williamson Act contracts within the 2040 planning area. Therefore, impacts would be Significant and Unavoidable.

Compliance with Fowler 2040 GP policies LU-8, LU-9, SAF-33, SAF-34, SAF-35, and action items SAF-33a, SAF-34a, SAF-34b, SAF-34c, SAF-35a, and SAF-35b, and the use of growth management tiers, as discussed above, would help to reduce the severity of many potentially significant impacts to agricultural resources, however, not all impacts to agricultural resources would be able to be reduced to a less than significant level. As a result, impacts would be significant and unavoidable.

Threshold 3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Fowler 2040 GP would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. According to the USDA and USFS, there is no forest land or timberland within or in the immediate vicinity of the planning area.²⁰ The nearest public

¹⁹ (California Department of Conservation 2019)

²⁰ (United States Department of Agriculture 2009)

or privately owned timberland to the City is located approximately 17 miles to the northeast of the City.²¹ In addition, Fowler’s Zoning Ordinance does not include any zone district that accommodates or delineates forest land or timberland. The Fowler 2040 GP would not cause the conversion of any forest land or timberland within the planning area. Therefore, there would be no impact.

Threshold 4: Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Fowler 2040 GP would not result in the loss of forest land or conversion of forest land to non-forest use. As discussed above, Fowler does not contain any forest land or timberland, nor does it contain any zone district for forest land or timberland use. The Fowler 2040 GP would not affect any forest land within the planning area, or within the immediate vicinity of the planning area. Therefore, there would be no impact.

Threshold 5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Potentially Significant Impact. As referenced in the discussions of Thresholds 1 and 2 above, the Fowler 2040 GP would result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to non-agricultural use and would result in conflicts with, or cancellation of, Williamson Act contracts. It is unknown if any other changes to the existing environment which, due to their location or nature, could result in other changes within the existing environment. Impacts that are known at this time would result in a significant impact on the environment.

Compliance with Fowler 2040 GP policies LU-8, LU-9, SAF-33, SAF-34, SAF-35, and action items SAF-33a, SAF-34a, SAF-34b, SAF-34c, SAF-35a, and SAF-35b, and the use of growth management tiers, as discussed above, would help to reduce the severity of many potentially significant impacts to agricultural resources, however, not all impacts to agricultural resources would be able to be reduced to a less than significant level. As a result, impacts would be significant and unavoidable.

4.3.5 Mitigation Measures

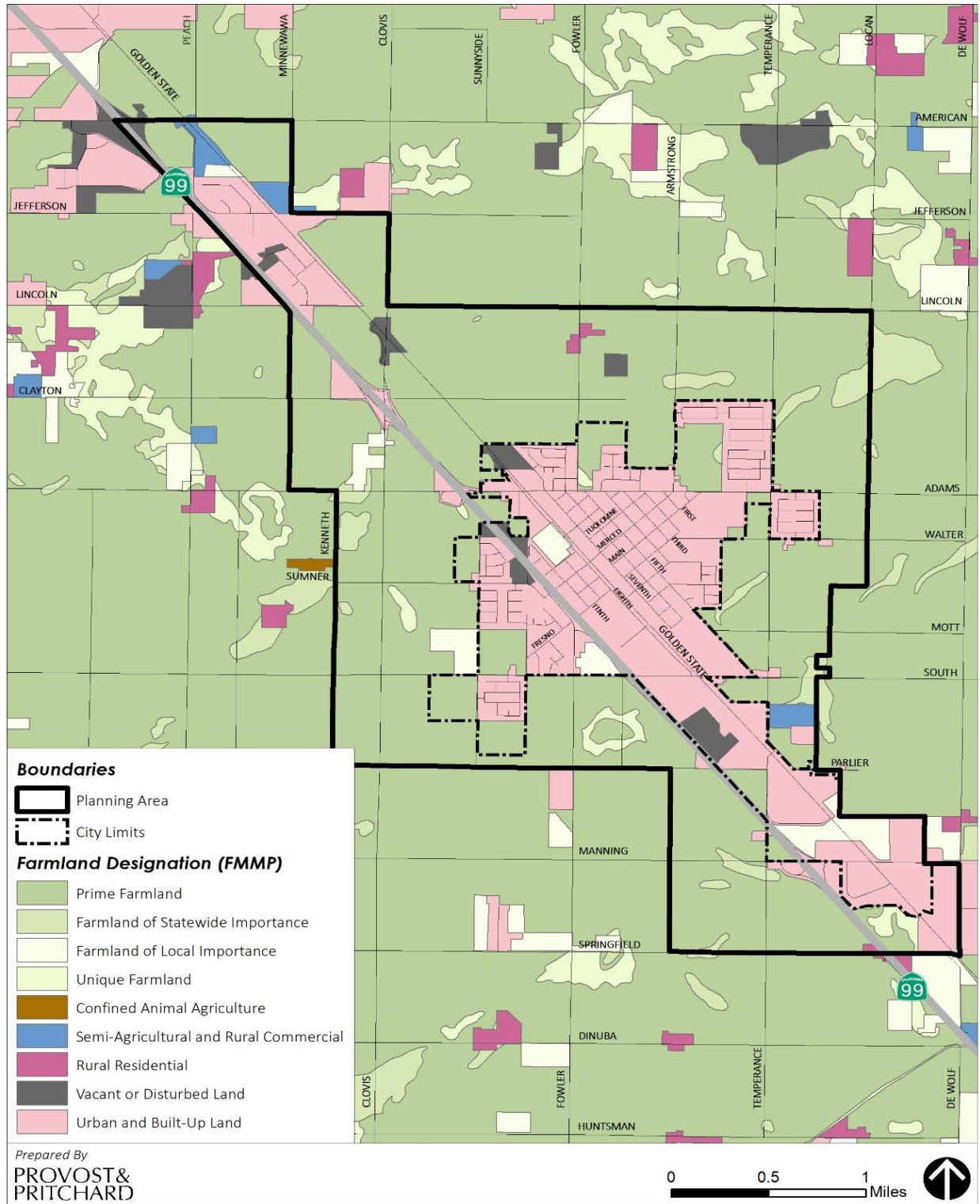
No feasible mitigation measures have been identified.

4.3.6 Cumulative Impacts

Future development and buildout of the Fowler 2040 GP would result in impacts to agricultural lands within the 2040 planning area. Development and buildout of the Fowler 2040 GP would not have a cumulative impact on forestry and forestry resources as there are no forests or timberlands located within the planning area. Any potential impacts due to the conversion of Prime Farmland, Unique Farmland, or Farmland of State Importance and any potential impacts resulting from the cancellation of a Williamson Act contract would be considered on a case-by-case basis for the subject property that an individual project would develop.

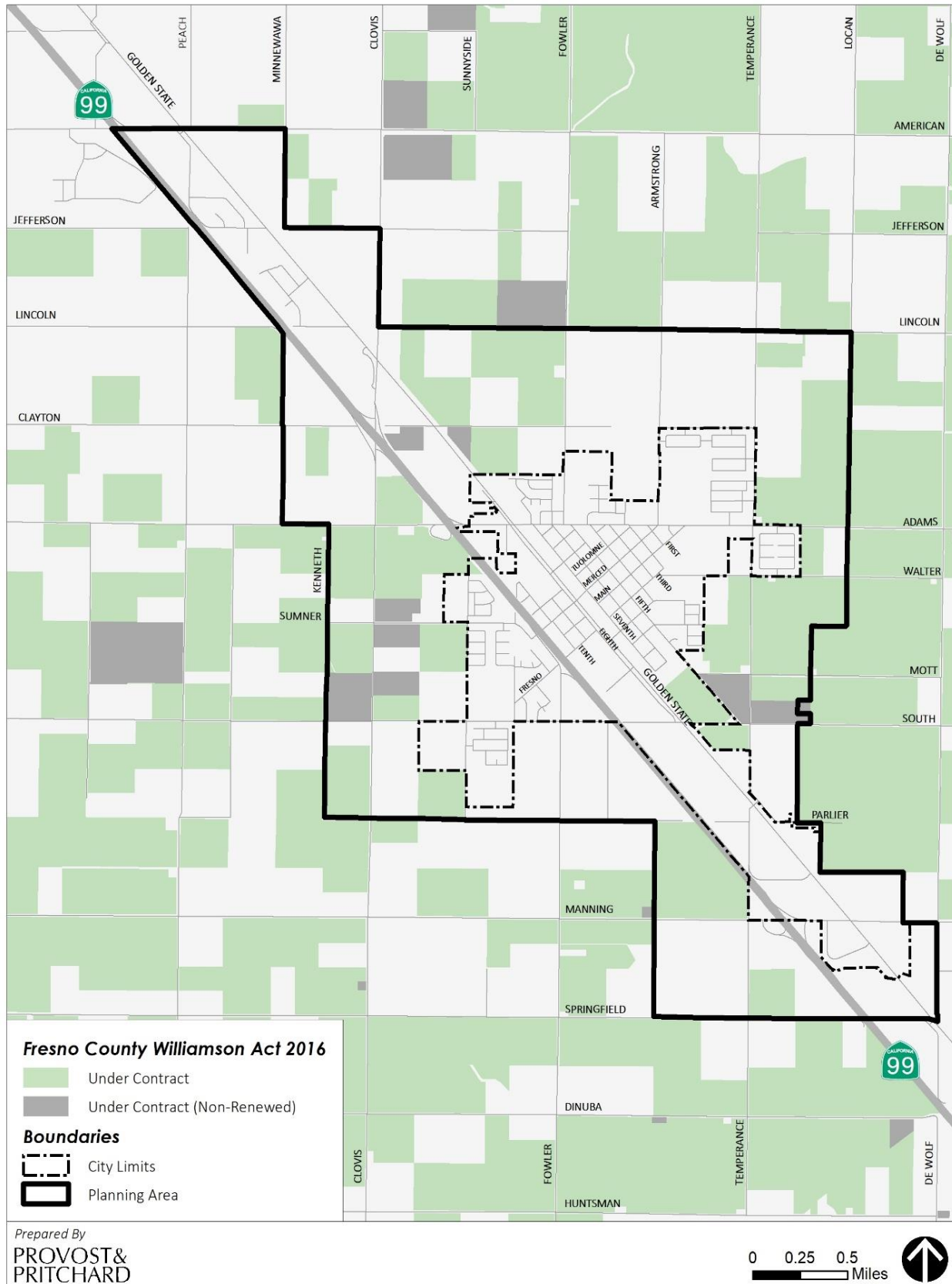
²¹ (California Department of Fish and Wildlife 2022)

Figure 4-3: Agricultural Resources²²



²² (California Department of Conservation 2016)

Figure 4-4: Williamson Act Contracts



4.4 Air Quality

This section evaluates impacts to air quality, including direct impacts affecting implementation of applicable air quality plans, exposure to pollutants, impacts to sensitive receptors, and other emissions in the planning area along with potential indirect impacts that could result from implementation of the Fowler 2040 GP.

4.4.1 Environmental Baseline

Climate Meteorology, Topography, and Pollutant Dispersion

The SJVAB, in which Fowler is situated, has an inland Mediterranean climate characterized by warm, dry summers and cooler winters. Summer temperatures often exceed 100°F and can vary as much as 30°F. Winters are for the most part mild and humid, with average high in the 50s, while the average daily low temperature is approximately 45°F.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Air temperature usually decreases as altitude increases. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Air above and below an inversion does not mix because of differences in air density thereby restricting air pollutant dispersal.

Wind speed and direction play an important role in the dispersion and transport of air pollutants. During summer periods, winds typically originate from the northern San Joaquin Valley and flow in a south-southeasterly direction through the Valley, down through the Tehachapi Pass and into the neighboring Southeast Desert Air Basin. During winter months, winds occasionally originate in the opposite direction, from the south end of the Valley, and flow in a north-northwesterly direction. Also, during winter months, the Valley experiences light, variable winds, less than 10 miles per hour. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of certain air pollutants.

The SJVAB is generally flat, bordered on the east by the Sierra Nevada Mountains; on the west by the Coast Ranges; and to the south by the Tehachapi Mountains. Airflow in the SJVAB is primarily influenced by marine air that enters through the Carquinez Straits where the San Joaquin-Sacramento Delta empties into the San Francisco Bay. The region's topographic features restrict air movement through and out of the basin. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Frequent transport of pollutants into the SJVAB from upwind sources also contributes to poor air quality.

Air Pollutants of Primary Concern

Criteria Air Pollutants

For the protection of public health and welfare, the federal Clean Air Act (CAA) required that the United States Environmental Protection Agency (USEPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the USEPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas standards established for the prevention of environmental and property damage are called secondary standards. The CAA allows states to adopt additional or more health-protective standards. The following provides a summary discussion of the criteria air pollutants of primary concern.

Ozone (O₃) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Oxides of Nitrogen (NO_x) are a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. USEPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles (PM₁₀)," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM_{2.5-10} is deposited in the thoracic region of the lungs.
- "Fine particles (PM_{2.5})," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossil fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of PM_{2.5}, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to its mass.

PM₁₀, PM_{2.5}, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, PM_{2.5} and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (CARB) and USEPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM₁₀. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO₂) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_x, suspended sulfur oxides (SO_x) particles contribute to the poor visibility. These SO_x particles can also combine with other pollutants to form PM_{2.5}. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). Occupational Safety and Health Administration (OSHA) regulates workplace exposure to H₂S.

Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by federal standards. CARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates (SO₄²⁻) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO₂

during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The CARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles: Are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride (C₂H₃Cl or VCM) is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Odors

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

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

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.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low

concentrations.²³ Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered “criteria pollutants” under either the CAA or the California Clean Air Act (CCAA) and are thus not subject to National or California AAQS (CAAQS). Instead, the USEPA and CARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the USEPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the CAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

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

At the state level, the CARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, Diesel-exhaust particulate matter (DPM) was added to the CARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The CARB has made the reduction of the public’s exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles.²⁴

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the South Coast Air Quality Management District (SCAQMD) are evaluated for TAC emissions. The SCAQMD limits emissions and public exposure to TACs through a number of programs. The SCAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SCAQMD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

Land Use Compatibility with TAC Emission Sources

CARB published an informational guide entitled: *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. CARB’s Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined “buffer zones.” It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies.²⁵ Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located

²³ (United States Environmental Protection Agency 1991)

²⁴ (California Air Resources Board 2005)

²⁵ Ibid

within the distances identified. CARB-recommended separation distances for various sources of emissions are summarized in [Table 4-2](#).

Table 4-2: Recommendations on Siting New Sensitive Land Uses Near Air Pollutant Sources

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.
<p><i>Recommendations are advisory, are not site specific, and may not fully account for future reductions in emissions, including those resulting from compliance with existing/future regulatory requirements.</i></p> <p><i>Source: CARB 2005</i></p>	

Sensitive Receptors

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

Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in the SJVAB. The Fresno-Drummond Street monitoring station is the closest representative monitoring station with sufficient data to meet USEPA and/or CARB criteria for quality assurance. The Fresno-Drummond Street monitoring station monitors ambient concentrations of O₃, NO₂, and PM₁₀. The Fresno-Hamilton and Winery monitoring station is the closest station monitoring PM_{2.5}. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2019 through 2021) and are summarized in [Table 4-2](#). As depicted, the state and federal O₃ and PM_{2.5}, and PM₁₀ standards were exceeded on numerous occasions during the past 3 years.

Table 4-3: Summary of Ambient Air Quality Monitoring Data

Pollutant	Monitoring Year		
	2019	2020	2021
Ozone (O₃)¹			
Maximum concentration (1-hour/8-hour average)	0.099/0.080	0.123/0.091	0.125/0.099
Number of days state/national 1-hour standard exceeded	1/0	11/0	9/1
Number of days 2008 national/2015 national 8-hour standard exceeded	2/10	14/27	16/39
Nitrogen Dioxide (NO₂)¹			
Maximum concentration (1-hour average)	42.3	66.8	64.5
Annual average	NA	NA	11
Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter (PM_{2.5})²			
Maximum concentration (national/state)	44.7/44.7	143.3/143.3	81.3/81.3
Annual Average (national/state)	11.2/NA	18.5/NA	13.7/NA
Number of days national standard exceeded (measured/calculated)	3/9.3	13/39.3	27/27.7
Suspended Particulate Matter (PM₁₀)¹			
Maximum concentration (national/state)	175.6/181.3	350.4/349.2	151.8/149.8
Number of days state standard exceeded (measured/calculated)	13/78.3	25/NA	20/NA
Number of days national standard exceeded (measured/calculated)	1/6.1	1/5.8	0/NA
<p><i>ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available</i></p> <p>1. Based on ambient concentrations obtained from the Fresno-Drummond Street Monitoring Station.</p> <p>2. Based on ambient concentrations obtained from the Fresno-Hamilton and Winery Monitoring Station</p> <p>2. Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.</p> <p>Source: CARB 2022a</p>			

4.4.2 Regulatory Setting

Federal

United States Environmental Protection Agency

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

The USEPA designates areas for ozone (O₃), carbon monoxide (CO), and nitrogen dioxide (NO₂) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (SO₂), areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The USEPA uses the

same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, USEPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for particulate matter of 10 microns or less (PM₁₀) based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated “unclassified.”

Clean Air Act

The CAA was first signed into law in 1970. In 1977, Congress added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, State attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. The USEPA is responsible for administering the CAA. NAAQS are summarized in [Table 4-4](#).

Toxic Substances Control Act

The Toxic Substances Control Act first authorized the USEPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies to inspect their schools for asbestos-containing building materials (ACBM) and to prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the CAA of 1970, the USEPA established the NESHAPs. These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include ACBM. NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBM associated with the demolition and renovation of structures.

State

California Air Resources Board

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing the California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in [Table 4-4](#). The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

Table 4-4: Summary of Ambient Air Quality Standards & Attainment Designations

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Non-Attainment	–	Non-Attainment
	8-hour	0.070 ppm		0.070 ppm	
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Non-Attainment	–	Attainment
	24-hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Non-Attainment	12 µg/m ³	Non-Attainment
	24-hour	No Standard		35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	Unclassified/ Attainment	35 ppm	Unclassified/ Attainment
	8-hour	9 ppm		9 ppm	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	0.053 ppm	Unclassified/ Attainment
	1-hour	0.18 ppm		0.100 ppb ^b	
Sulfur Dioxide (SO ₂)	AAM	–	Attainment	0.03 ppm	Unclassified/ Attainment
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m ³	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		1.5 µg/m ³	
	Rolling 3-Month Average	–		0.15 µg/m ³	
Sulfates	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

Source: SJVAPCD 2022

The State and national attainment status designations for the SJVAB are summarized in [Table 4-4](#). The SJVAB is currently designated as a nonattainment area with respect to the state ozone, PM₁₀, and PM_{2.5} standards, as well as the national 8-hour ozone and PM_{2.5} standards.

California Clean Air Act

The CCAA requires that all air districts in the State endeavor to achieve and maintain CAAQS for O₃, CO, SO₂, and NO₂ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Under the CCAA, CARB is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment

designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An “unclassified” designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

Assembly Bill 170

Requires cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts.

Senate Bill 709

Gave the San Joaquin Valley Air Pollution Control District (SJVAPCD) more responsibility in terms of permitting, fee implementation, and agricultural assistance, but also gives the air district the authority to require the use of best available control technology (BACT) for existing sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing. It also allows the air district to adopt a surcharge on motor vehicle registration fees in counties within the air district.

Senate Bill 656 (Chapter 738, Statutes of 2003)

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified at Health and Safety Code Section 39614, to reduce public exposure to PM₁₀ and PM_{2.5}. SB 656 required CARB, in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM₁₀ and PM_{2.5} (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for PM_{2.5} and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal PM_{2.5} attainment plans, as well as for State ozone plans. This ensures continuing focus on PM reduction and progress towards attaining California’s more health protective standards. CARB adopted the list of air district control measures on November 18, 2004. CARB also developed a list of State PM control measures for mobile and stationary sources, including measures planned for adoption as part of CARB’s Diesel Risk Reduction Plan.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

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

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted a regulation to reduce diesel particulate matter (DPM) and oxides of nitrogen (NO_x) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation, establishes emissions performance

requirements, establishes reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

Small Off-Road Engine Exhaust Emission Regulations

In December 2021, CARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment.

Advanced Clean Cars II Regulations

In August 2022, CARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% zero emission and plug-in hybrid electric vehicles. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive.

Local

San Joaquin Valley Air Pollution Control District

The SJVAPCD is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective, and entrepreneurial air quality-management strategies. SJVAPCD's ten core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the Valley; continuous improvement; effective and efficient use of public funds; and respect for the opinions and interests of all Valley residents. To achieve these core values the SJVAPCD has adopted air quality plans pursuant to the CCAA and a comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the proposed Project are listed and described further below.

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the SJVAB. Relevant SJVAPCD air quality plans, rules and regulations are summarized below:

SJVAPCD Air Quality Plans

- **2016 Ozone Plan.** The SJVAB is designated nonattainment of state and federal health-based air quality standards for ozone. USEPA established 8-hour ozone standards in 1997 (84 parts per billion [ppb]), 2008 (75 ppb), and 2015 (70 ppb). The San Joaquin Valley is currently classified as in nonattainment for each of these increasingly stringent standards. The district has adopted plans for the 1997 and 2008 ozone standards and is on track to meet the attainment deadlines for both.

This plan included an in-depth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by USEPA in 2008) for all areas of the SJVAB no later than 2031. This plan went above and beyond minimum legal requirements by including a "Fast Track" control strategy. Through Fast Track, new strategies produce real reductions (even

though they cannot be legally counted in the plan at this time) and will clean the air before the deadline.

Currently the air district is drafting their 2022 Ozone Plan with goal of attaining the 70-ppb standard by the 2037 deadline. "Given that over 85% of remaining NO_x emissions in the Valley come from mobile sources under state and federal jurisdiction, it will be particularly important that continued efforts to reduce emissions from passenger vehicles, heavy duty trucks, locomotives, and other mobile sources be pursued."

- **2007 PM₁₀ Plan.** The Air District's *2007 PM₁₀ Maintenance Plan and Request for Redesignation*, approved on September 21, 2007, assures that the Valley will continue to meet the PM₁₀ standard and requests that USEPA formally redesignate, or label, the Valley to attainment status. The PM₁₀ Maintenance Plan was adopted on September 25, 2008.²⁶
- **PM_{2.5} Attainment Plan.** Throughout the years the SJVAPCD has implemented several plans to reduce PM_{2.5} and its effects on residents in the Valley. The most recent plan 2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards (Plan) builds on existing plans and measure adopted by the district and CARB to address federal air quality standards. This Plan integrates a comprehensive strategy that contains new stationary source measures that will be applied Valley wide and measures focused on reducing emissions in areas with the most difficult attainment challenges. Through the implementation of this comprehensive strategy, the Valley will experience air quality improvements as the region attains the federal PM_{2.5} standards as expeditiously as practicable. The 2018 PM_{2.5} Plan estimates that the SJVAB will reach the 2012 PM_{2.5} standard in 2025.

SJVAPCD Rules & Regulations

- **Regulation VIII. Fugitive PM₁₀ Prohibitions.** The purpose of this regulation is to reduce ambient concentrations of PM₁₀ by prohibiting, reducing, or mitigating anthropogenic emissions of fugitive dust, including emissions associated with various construction and operational activities.
- **Rule 4002. National Emissions Standards for Hazardous Air Pollutants.** This rule may apply to projects in which portions of an existing building would be renovated, partially demolished, or removed. With regard to asbestos, the NESHAP specifies work practices to be followed during renovation, demolition or other abatement activities when friable asbestos is involved. Prior to demolition activity, an asbestos survey of the existing structure may be required to identify the presence of any ACBM. Removal of identified ACBM must be removed by a certified asbestos contractor in accordance with California Division of Occupational Safety and Health (Cal/OSHA) requirements.
- **Rule 4102. Nuisance.** Applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 4103. Open Burning.** This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.1 of this rule prohibits the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes.
- **Rule 4601, Architectural Coatings.** This rule sets VOC limits on architectural coatings used in or on buildings, and on streets and parking lots.
- **Rule 4901, Woodburning Fireplaces.** On June 20, 2019, the SJVAPCD adopted and amendments to Rule 4901 to reduce the public's exposure to harmful particulates from wood smoke. Residential

²⁶ (San Joaquin Valley Air Pollution Control District n.d.)

wood burning is one of the largest sources of PM_{2.5} in the San Joaquin Valley during the winter season. Under the rule installation of new wood burning fireplaces and heaters is restricted at elevations below 3,000 ft. The rule also requires any modifications made to an existing fireplace or chimney must install an USEPA certified, gas fueled or electric device.

- **Rule 4641. Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- **Rule 4905, Natural Gas-fired Central Furnaces.** The purpose of this rule is to limit NO_x emission from natural gas-fired furnaces.
- **Rule 9510, Indirect Source Review (ISR).** The purpose of this rule is to reduce construction and operational emissions associated with the use of development projects through implementation of design features, on-site emission-reduction measures, or off-site measures or the payment of an off-site emissions reduction fee to the SJVAPCD. For projects subject to this rule, the ISR rule requires developers to mitigate and/or offset emissions sufficient to achieve: (1) 20-percent reduction of construction equipment exhaust NO_x; (2) 45-percent reduction of construction equipment exhaust PM₁₀; (3) 33-percent reduction of operational NO_x over 10 years; and (4) 50-percent reduction of operational PM₁₀ over 10 years. SJVAPCD ISR applications must be filed “no later than applying for a final discretionary approval with a public agency.”

Fresno Council of Governments

The Fresno Council of Governments (FCOG) is a voluntary association of local governments, one of California’s 38 regional planning agencies, and one of 500+ nationwide. FCOG undertakes comprehensive regional planning with an emphasis on transportation. FCOG is responsible for regional transportation planning in Fresno County and participates in developing mobile source emissions inventories used in air quality attainment plans.

Fresno County Regional Transportation Plan

FCOG’s 2022 Regional Transportation Plan (RTP) comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2040. FCOG’s first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-range transportation plans extend at least 20 years into the future. As the federally designated Metropolitan Planning Organization (MPO) and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region’s 15 cities, the County of Fresno, staff from related local public agencies, the SJVAPCD, Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, and each element is augmented by additional documentation. The RTP also contains a chapter that establishes the SCS to show how integrated land use and transportation planning can lead to more efficient use of autos and light trucks, as well as improve the overall quality of life in the region.

Local

Local regulations specifically pertaining to air quality are absent.

4.4.3 Methodology and Thresholds of Significance

San Joaquin Valley Air Pollution Control District Thresholds

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD has published the *Guide for Assessing and Mitigating Air Quality Impacts*.²⁷ This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts associated with project-level analyses. The SJVAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed development project would result in a significant air quality impact. The SJVAPCD's recommended thresholds of significance are summarized in [Table 4-5](#).

- Short-term Emissions—At the project level, construction impacts associated with proposed development projects would be considered potentially significant if project-generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or NO_x, 27 TPY of SO_x, or 15 TPY of PM₁₀ or PM_{2.5}.
- Long-term Emissions—Operational impacts associated with the proposed project would be considered potentially significant if project generated emissions would exceed 100 TPY of CO, 10 TPY of ROG or NO_x, 27 TPY of SO_x, or 15 TPY of PM₁₀ or PM_{2.5}.
- Conflict with or Obstruct Implementation of Applicable Air Quality Plan—Due to the region's non-attainment status for ozone, PM_{2.5}, and PM₁₀, if project-generated emissions of ozone precursor pollutants (i.e., ROG and NO_x) or PM would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans.
- Local Mobile-Source CO Concentrations—Local mobile source impacts associated with the proposed project would be considered potentially significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).
- Exposure to TACs would be considered potentially significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 20 in 1 million or would result in a Hazard Index greater than 1.
- Odor impacts associated with the proposed project would be considered potentially significant if the project has the potential to frequently expose members of the public to objectionable odors. Individual projects that would result in the creation of a new major odor source near existing sensitive receptor(s), or the location of a new sensitive receptor(s) near an existing major source of odor may result in a potentially significant impact that requires further analysis. Major sources of potential odors and SJVAPCD-recommended screening distances are summarized in [Table 4-6](#).

²⁷ (San Joaquin Valley Air Pollution Control District 2015)

**Table 4-5: SJVAPCD-Recommended CEQA
Significance Thresholds**

Pollutant	Construction Emissions (tons/year)	Operational Emissions (tons/year)
CO	100	100
NO _x	10	10
ROG	10	10
SO _x	27	27
PM ₁₀	15	15
PM _{2.5}	15	15

Source: SJVAPCD 2015

**Table 4-6: SJVAPCD Screening Distances for
Major Potential Odor Sources**

Type of Facility	Screening Distance
Wastewater Treatment Facilities	2 Miles
Sanitary Landfill	1 Mile
Transfer Station	1 Mile
Composting 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 Processing Facility	1 Mile
Rendering Plant	1 Mile

Source: SJVAPCD 2015

In addition to the above thresholds, the SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of individual project impacts on localized ambient air quality conditions. Accordingly, individual projects would also be considered to result in a significant contribution to localized ambient air quality if on-site emissions or ROG, NO_x, PM₁₀, PM_{2.5}, CO, or SO₂ associated with either short-term construction or long-term operational activities would exceed a daily average of 100 pounds per day for each of the pollutants evaluated.²⁸

Methodology

Short-term emissions associated with construction activities are largely dependent on the type of development proposed, area of ground disturbance, number of buildings to be demolished, equipment required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

Long-term operational increases in emissions of criteria air pollutants associated with energy use and area sources (e.g., landscaping activities, use of consumer products) using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. Emissions associated with energy use and area sources were calculated based on default usage rates contained in the model for Fresno County. Mobile-source emissions were calculated based on projected increases in vehicle miles traveled (VMT) and emission factors for

²⁸ (San Joaquin Valley Air Pollution Control District 2015)

Fresno County derived from the Emission Factor 2021 (EMFAC2021) computer program.²⁹ Increases in vehicle miles traveled were derived from the traffic analysis prepared for the proposed GP, including the assumption that full buildout of the Fowler 2040 GP would occur by 2042 to align with the Fresno COG transportation model horizon.³⁰ Emissions modeling files are provided in [Appendix C](#). Increased exposure of sensitive land uses to localized pollutant concentrations were qualitatively assessed.

4.4.4 Impacts

Threshold 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. Long-term emissions under the Fowler 2040 GP would be associated with mobile sources (e.g., vehicle trips) and stationary sources (e.g., electricity and natural gas). Emissions associated with individual projects, depending on project type and size, could exceed project-specific thresholds established by the SJVAPCD. However, such projects will be required to undergo independent, project-level CEQA review and determine whether a project is consistent with all applicable air quality plans. The most recently adopted air quality attainment plans in the San Joaquin Valley Air Basin are the SJVAPCD 2016 Ozone Plan, the 2018 PM_{2.5} Plan, the 2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-hour Ozone Standard, and the 2004 Revisions to the Carbon Monoxide Maintenance Plan. These SJVAPCD Air Quality Attainment Plans contain measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. If the General Plan would conflict with or obstruct the implementation of any air quality plan control measure, it would be inconsistent with the applicable air quality plans. All future development and infrastructure projects within the planning area would be subject to the General Plan goals, policies, and actions, which were adopted to reduce emissions and air quality impacts.

Daily VMT for the planning area under existing (year 2019) conditions and future year 2042 conditions is summarized in [Table 4-7](#). As shown, daily VMT for the Fowler planning area under existing conditions is 247,894. Under future year conditions (buildout of the Fowler 2040 GP), the projected daily VMT would be 1,240,395. In comparison to existing conditions, VMT would increase by approximately 992,501, or 400%.

Table 4-7: Projected Daily VMT Increase

Source	Amount
Existing VMT	247,894
Future VMT	1,240,395
VMT Increase Compared to Existing:	992,501
Percent increase in VMT:	400%
<i>Source: Kittelson & Associates, 2022</i>	

Population for the planning area under existing (year 2019) conditions and future year 2042 conditions is summarized in [Table 4-8](#). As shown, the Fowler planning area has an existing estimated population of

²⁹ (California Air Resources Board 2022)

³⁰ (Kittelson & Associates 2022)

approximately 6,808. At full buildout of the Fowler 2040 GP the City’s population is estimated to total of 48,404, an increase in population of approximately 41,596 new residents.

Table 4-8: Projected Population Growth

Source	Amount
Existing Population	6,808
Future Population	48,404
Population Increase Compared to Existing:	41,596
Percent increase in Population:	611%

Source: Kittelson & Associates, 2022

Implementation of the Fowler 2040 GP would result in an increase in the population of approximately 611 percent, whereas VMT would increase by approximately 400 percent. The estimated increase in VMT associated with the Fowler 2040 GP would be lower than the estimated increase in population growth. As a result, the Fowler 2040 GP would not be anticipated to result in overall VMT increases on a per capita basis and is discussed further in [Section 4.18](#).

Implementation of the Fowler 2040 GP is anticipated to result in a substantial increase in mobile-source emissions, as depicted in [Table 4-11](#). In addition to increases in mobile-source emissions, additional sources of emissions would include area sources, and energy use. Emissions associated with area sources would be predominantly associated with the use of consumer products (e.g., cleaning supplies), over which the City and SJVAPCD have little to no control. Landscaping equipment currently accounts for 24 annual tons of CO area emissions, which is anticipated to reduce to 0 tons in 2042 with the recent enactment of the SORE amendment.

Future development would be required to comply with SJVAPCD and state requirements, including (but not limited to) SJVAPCD Rule 9510, Title 24 energy-efficiency regulations, the SORE and Advanced Clean Cars II rule, which would help to reduce overall emissions associated with individual development projects.

- Policy LU-13** Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses.
- Action Item LU-13a** Review and revise the Zoning Ordinance, as necessary, to reflect increased density allowances for planned unit developments at the City’s discretion. Granting of additional density (not to exceed 25%) will depend on the developer’s demonstration of the quality of design in such areas as access, circulation, building placement, parking, provision of open space, and architectural design and compatibility with the surrounding area.
- Policy LU-18** Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development.
- Action Item LU-18a** Review and revise the Zoning Ordinance, as needed, to allow residential uses in the Community Commercial Designation.
- Policy LU-19** Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.
- Action Item LU-19a** Review and revise the Zoning Ordinance, as needed, to permit neighborhood-serving commercial uses, such as food markets, in residential zones through the Conditional Use Permit process.
- Policy LU-21** Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.

Policy CDES-16	Locate parking areas within commercial projects in a manner that promotes pedestrian activity.
Policy CDES-18	<p>New commercial projects are designed in such a way that they enhance Fowler’s character.</p> <p>Adopt commercial standards in consideration of the following design principles:</p> <ul style="list-style-type: none">• Commercial sites are designed with human scale and pedestrian amenities.• Landscaping is used to unify and improve the visual quality of commercial sites.• Where appropriate, commercial development should be oriented along the street edges of new commercial sites, at street corners, or along main roadways internal to larger developments.• Encourage the use of shared parking amongst various commercial and office uses where possible. Minimize required off-street parking.
Action Item CDES-18a	
Policy CDES-31	Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.
Policy CH-1	Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.
Action Item CH-1a	Identify gaps in the existing pedestrian and bicycle network to inform capital improvements programming and grant funding opportunities.
Action Item CH-1b	Prioritize pedestrian and bicycle improvement projects that close gaps in the mobility network and those which link the east and west sides of the city.
Action Item CH-1c	Amend road design standards, as necessary, to include complete street design principles.
Action Item CH-1d	Develop and implement an Active Transportation Plan.
Action Item CH-1e	Pursue funding for the adoption of a Safe Routes to School Master Plan to assist in the planning and funding of bicycle and pedestrian infrastructure improvements along school routes.
Policy CH-2	Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.
Policy CH-3	Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.
Action Item CH-3a	Conduct a visual quality assessment of bicycle and pedestrian facilities to determine the efficacy of existing active transportation improvements and to help prioritize future improvements.
Action Item CH-3b	Require street lighting within the rights-of-way of all public streets.
Policy CH-4	Require street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.
Action Item CH-4a	Establish street design standards for each land use zone and require street trees of “medium” size or larger in commercial, residential, and mixed-use zones.
Policy CH-6	Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board’s (CARB’s) Land Use Compatibility Handbook.
Policy CH-7	Consider the use of solid and vegetative barriers as a means for reducing near-roadway air pollution concentrations along SR 99 and local expressways.
Policy OS-10	The City shall implement the community trail network as shown <i>Figure 8-2: Trail Facilities</i> .

Policy OS-11	Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.
Policy OS-12	Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.
Policy MOB-4	Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.
Action Item MOB-4a	Prepare guidelines for the evaluation of vehicle miles travelled. The guidelines should include significance criteria for evaluating impacts, thresholds of applicability for discretionary projects, and guidance on analyzing transportation impacts.
Action Item MOB-4b	Identify a range of actions available for developments to mitigate transportation impacts, specifically targeted at reducing vehicle miles travelled.
Policy MOB-5	Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized
Policy MOB-6	Use Intelligent Transportation Systems (ITS) to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.
Policy MOB-9	New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
Policy MOB-10	Develop a multi-purpose recreational bikeway network and support facilities.
Action Item MOB-10a	Review and revise, as needed, the Zoning Ordinance to include provisions for short-term and long-term bicycle parking and storage facilities.
Policy MOB-11	Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
Action Item MOB-11a	Review and revise, as needed, public works standards to include pedestrian and bicycle safety features where appropriate.
Action Item MOB-11b	Establish design standards to ensure the bikeway network is easily identifiable and consistent with standard signs and markings, as designated by the State of California Traffic Control Devices Committee and the State Bikeway Committee.
Policy MOB-12	Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
Policy MOB-13	Coordinate with Caltrans, Fresno COG, Fresno County Rural Transit Agency (FCRTA,) and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
Policy MOB-14	Identify opportunities for a multi-modal transit hub within the City.
Policy MOB-15	Support the development of paratransit service programs.
Policy MOB-16	Support transit operator efforts to maximize return for short- and long-range transit needs.

Action Item MOB-16a	Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).
Policy MOB-17	Incorporate the potential for public transit service expansion throughout the City.
Action Item MOB-17a	Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.
Policy MOB-18	Improve route options and access for public transit City-wide, specifically west of SR 99.
Action Item MOB-18a	Coordinate with Fresno County Rural Transit Agency (FCRTA) and other public transit agencies to facilitate additional transit stops.
Action Item MOB-18b	Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity.

Implementation of policies LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, CH-7, OS-10, OS-11, OS-12 MOB-4, MOB-5, MOB-6, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18 and action items LU-13a, and CDES-18a of the Fowler 2040 GP would improve air quality by reducing emissions associated with future development projects, reducing the VMT per capita, and supporting sustainable development by helping to maintain a balanced ratio of jobs to housing units, placing an emphasis on connectivity with the community, multi-modal connectivity, and improved public transit throughout Fowler.

However, given the region’s current nonattainment status and uncertainty regarding the effectiveness of the proposed policies on individual development projects, this impact would be considered **potentially significant**.

Implementation of Mitigation Measure AQ-1 would reduce emissions associated with future development projects. However, given the region’s current nonattainment status and uncertainty regarding the effectiveness of future mitigation for individual development projects, this impact would be considered significant and unavoidable.

Threshold 2: Would the project 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?

Potentially Significant Impact. The 2040 Fowler GP consists of developing parcels that are currently vacant, or under-developed and have the potential for enhanced or further development. Future development within Fowler’s planning area, and associated increases in daily VMT are summarized in **Table 4-7**. As noted in **Table 4-9**, future development within the planning area would result in approximately 12,494 additional dwelling units. Daily VMT associated with future residential development would total approximately 457,846 miles. As noted in **Table 4-10**, future non-residential development would result in an increase of approximately 18,243,344 square feet and 383,368 miles traveled per day.

Table 4-9: Summary of Residential Land Uses within Planning Area

Land Use	Dwelling Units 2019	Daily VMT 2019	Dwelling Units 2042	Daily VMT 2042
Residential Low Density	391		2,275	
Residential Medium Low Density	636		4,122	
Residential Medium Density	1,214		4,752	
Residential Medium High Density	0		2,193	

Land Use	Dwelling Units 2019	Daily VMT 2019	Dwelling Units 2042	Daily VMT 2042
Residential High Density	775		1,449	
Mixed- Community Commercial	208		927	
Total Residential:	3,224	136,275	15,718	594,121
Increase Compared to Existing:			12,494	457,846
<i>Kittelson & Associates, Fowler Land Use Assumptions 2022</i>				
<i>Kittelson & Associates, Fowler VMT Impact Assessment 2022</i>				

Table 4-10: Summary of Non-Residential Land Uses within Planning Area

Land Use	Acres 2019	Daily VMT 2019	Acres 2042	Daily VMT 2042
Commercial Neighborhood	1.91		5.68	
Commercial Community	9.54		21.26	
Commercial General	19.96		41.92	
Industrial Light	33.01		178.70	
Industrial Heavy	100.42		331.54	
Public Park	15.80		55.03	
Public Facility	8.77		12.33	
Total Non-Residential	189.41	118,857	646.46	502,225
Increase Compared to Existing:			457.05	383,368
<i>Kittelson & Associates, Fowler Land Use Assumptions 2022</i>				
<i>Kittelson & Associates, Fowler VMT Impact Assessment 2022</i>				

Table 4-11: Summary of Operational Emissions Within Planning Area

Source	Emissions (tons/year) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Existing Year 2019 Conditions					
Area ²	60.0	1.5	24.6	0.2	0.2
Energy ²	1.2	10.3	7.3	0.8	0.8
Mobile ³	24.0	68.4	200.8	3.7	1.9
Total:	85.2	80.2	232.7	4.7	2.9
Proposed Year 2042 GP Buildout					
Area ²	250.6	7.2	118.9	1.1	1.1
Energy ²	4.7	41.2	27.9	3.2	3.2
Mobile ³	43.1	114.7	359.5	14.6	5.5
Total:	298.4	163.1	506.3	18.9	9.8
Net Increase Compared to Existing Conditions:	213.3	82.9	273.6	14.2	6.9
SJVAPCD Significance Thresholds ⁴ :	10	10	100	15	15
<p>1. Totals may not sum due to rounding.</p> <p>2. Emissions calculated using CalEEMod2020.4.0. Area source emissions are predominantly associated with the use of consumer products (e.g., cleaning supplies). Other area sources include landscape maintenance equipment, natural gas-fired appliances, and architectural coatings.</p> <p>3. Emissions calculated based on data derived from the VMT analysis prepared for this project and emission factors for Fresno County derived from EMFAC2021. Annual emissions of SO_x associated with typical development are anticipated to be negligible and were not included.</p> <p>4. SJVAPCD Significance Thresholds apply to individual projects and are presented for informational purposes only.</p> <p>5. Refer to Appendix C for emissions modeling assumptions and results.</p>					

Short-Term Air Quality Impacts

Construction activity associated with the 2040 Fowler GP would cause temporary emissions of various air pollutants from demolition, grading, construction worker travel, hauling of construction supplies, fuel combustion by equipment, and architectural coating would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The extent of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment, would depend on the equipment used and the hours of operation for each project. The extent of PM_{2.5} and PM₁₀ emissions would depend on the amount of disturbed soils, the length of disturbance time, whether existing structures are demolished, whether excavation is involved, and whether transporting excavated materials offsite is necessary. Dust emissions can lead to both nuisance and health impacts.

The SJVAPCD has not established plan-level significance thresholds for construction air pollutant emissions. At this time, most projects facilitated by the 2040 Fowler GP do not have sufficient detail to allow project-level analysis. As a result, short-term air quality impacts would be considered **potentially significant**.

Long-Term Air Quality Impacts

Long-term operational emissions associated with future development were quantified using the CalEEMod2020.4.0 based on the estimated increases in residential and non-residential development (refer to **Table 4-9** and **Table 4-10**, respectively). Estimated annual emissions associated with the proposed 2040 Fowler GP are summarized in **Table 4-11**. Emissions modeling was conducted for annual operational conditions under existing year 2019 and Fresno COG Model Horizon Year (2042) conditions. As noted in **Table 4-11**, annual emissions under existing conditions would total approximately 85.2 tons/year of ROG, 80.2 tons/year of NO_x, 232.7 tons/year of CO, 4.7 tons/year of PM₁₀, and 2.9 tons/year of PM_{2.5}. While emissions under the Fresno COG Model Horizon Year (2042) would total approximately 298.4 tons/year of ROG, 163.1 tons/year of NO_x, 506.3 tons/year of CO, 18.9 tons/year of PM₁₀, and 9.8 tons/year of PM_{2.5}.

As noted in **Table 4-11**, overall increases in emissions associated with future development would be largely associated with area and mobile sources. Under the newly adopted Advanced Clean Car II rule, mobile emissions will likely be reduced as adoption of EVs increases. Emissions associated with area sources would be predominantly associated with the use of consumer products (e.g., cleaning supplies). To a lesser extent, other area source emissions would be associated with the use of natural gas-fired appliances, landscape maintenance equipment, and architectural coatings. The recently adopted Small Off-Road Engine regulation will likely decrease emissions from landscape maintenance equipment under the Fowler 2040 GP, however its effects could not be quantified for modeling. As discussed previously, the SJVAPCD has not established quantitative plan-level significance thresholds for operational emissions. At this time, there is insufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts. For this reason, this impact would be considered **potentially significant**.

Implementation of Policies LU-21, CDES-31, CH-1, CH-6, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, and MOB-19 of the 2040 Fowler GP would help to reduce increases in criteria pollutants. Greenhouse Gas Mitigation Measures GHG-1 and GHG-2, and Air Quality Mitigation Measure AQ-1 shall be implemented to reduce project-generated emissions of air pollutants.

As noted above, the General Plan Update includes various measures to reduce energy demand and vehicle miles traveled, including the promotion of alternative means of transportation. The promotion

of alternatives to automotive transportation can help to reduce local and regional mobile-source emissions and energy consumption. Mitigation Measure AQ-1 would require individual projects to evaluate regional air quality impacts resulting from construction and operational emissions. Potentially significant impacts would require implementation of additional project-specific mitigation measures to further reduce project-generated emissions and associated air quality impacts. However, given the regions current nonattainment status and uncertainty regarding the effectiveness of future mitigation for individual development projects, short-term and long-term air quality impacts would be considered **significant and unavoidable**.

Threshold 3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Sensitive receptors as defined by the SJVAPCD include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The 2040 Fowler GP would include the development of land uses considered to be sensitive receptors, as well as new development near existing sensitive receptors. Activities associated with implementation of the 2040 Fowler GP could potentially include short-term, construction sources of TACs and long-term, operational sources of TACs, including stationary and mobile sources. TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health and PM_{2.5} can cause a wide range of health effects.

Short-Term Construction Emissions

Construction projects can result in short-term increases of TACs, as well as emissions of airborne fugitive dust. Emissions of DPM emitted from construction vehicles is of particular concern. Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest tightness, wheezing, and bronchitis. However, various other TACs from diesel exhaust also contribute to both cancer and non-cancer health risks. Construction-generated emissions of PM_{2.5} can also contribute to significant health impacts, particularly among the more sensitive population groups (i.e., children, elderly, etc.).

The amount of TACs generated during construction of individual projects would vary depending on numerous factors, including the size of the development, the type, age, and number of pieces of equipment required, and hours of use. Furthermore, it is anticipated that multiple construction projects could occur simultaneously within a given year and within a given area. Without detailed construction information (i.e., construction schedules, demolition, grading, excavation, and construction requirements), construction-generated emissions of TACs for individual projects cannot be quantified at this time. As a result, this impact would be considered **potentially significant**.

Long-Term Exposure Toxic Air Contaminants

Development of future land uses may include potential stationary sources of TACs, such as diesel-powered emergency-use power generators. The type and level of TAC emissions emitted would depend upon the nature of the land use and the specific methods and operations that involve toxic air emissions. Pursuant to SJVAPCD rules and regulations, including SJVAPCD Rule 2201 (New Source Review Rule), new and modified stationary sources of emissions are required to mitigate emissions using best available control technology and to offset emissions when above thresholds.

In addition to the long-term exposure to stationary emission sources, new land uses may also be exposed to emissions from mobile sources. Major roadways of potential concern with regard to mobile-source TACs typically include roadways with average-daily traffic (ADT) volumes of 100,000 or more. Within the

Planning Area, State Route 99 (SR-99) is considered the primary source of mobile-source TAC emissions. Average-daily traffic volumes along SR-99 located within the Planning Area range from approximately 94,000 to approximately 99,000 (Peters Engineering Group 2022).

The 2040 Fowler GP would include opportunities for new development and redevelopment near SR-99. In addition, depending on the type of future development, some projects contribute substantially to existing vehicle traffic on area roadways, particularly diesel-fueled heavy-duty trucks associated with industrial development. Such development could result in the exposure of sensitive receptors to mobile-sources of TACs. Given that future development could potentially result in increased exposure of sensitive land uses to TACs, this impact would be considered **potentially significant**. Policy CH-6 would require that future land uses be evaluated for consistency with siting recommendations as outlined in CARB's Land Use Compatibility Handbook (refer to [Table 4-2](#)). In addition, solid or vegetative barriers would be considered for reducing near-road air pollutant concentrations for development located along SR-99 and major local expressways.

Mobile-Source Carbon Monoxide

Buildout of the 2040 Fowler GP would result in new development or redevelopment that would generate additional vehicle trips on area roadways. Areas with high vehicle density, such as congested intersections, have the potential to create concentrations of CO ("CO hotspots") and could potentially expose sensitive receptors to harmful levels of pollution.

Localized CO concentrations are the result of the volume of cars along a road and the level of emissions generated by vehicles, rather than the flow of traffic. Vehicle CO emissions have declined over time due to stringent State standards for vehicle emissions and would continue to decline as more stringent standards are put in place. However, CO hotspots can occur if large numbers of vehicles are concentrated on a roadway. This becomes a concern when the LOS of a given roadway is negatively affected by a project enough to be classified as LOS E or F. According to the traffic analysis ([Appendix I](#)), two roadway segments are expected to operate at LOS E or F under 2040 Fowler GP buildout conditions: Merced Street between 8th and 10th Streets, and Golden State Boulevard between Valley Drive and Manning Avenue. Therefore, this impact would be considered **potentially significant**.

Implementation of the following policies and action items of the 2040 Fowler GP would require future development to assess impacts to the local circulation network and to encourage achievement of LOS C, where possible. It would also require use of ITS to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.

Implementation of Mitigation Measure AQ-2b would require the review of proposed development projects to ensure that future development projects would not result in an increase in localized CO concentrations that would adversely impact nearby sensitive receptors. With implementation of proposed General Plan Update policies, and MM AQ-2b, this impact would be considered **less than significant**.

Threshold 4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Potentially Significant Impact. The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Project-specific analysis would be assessed for new development planned for in the 2040 Fowler GP.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. As shown in

Table 4-6, the SJVAPCD established screening levels for potential odor sources based on distance to sensitive receptors. Land uses that typically produce objectionable odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities.³¹

The residential uses in the 2040 Fowler GP are not considered odor-generating land uses. At this time, the projects facilitated by the 2040 Fowler GP do not have sufficient detail to allow project-level analysis and thus it would be speculative to determine adverse odor affects from the Project. Therefore, odor impacts as a result of the proposed general plan would be considered **potentially significant**.

Implementation of proposed Mitigation Measure AQ-2a and compliance with applicable SJVAPCD rules and regulations would reduce the potential exposure of sensitive receptors to odors. However, even with mitigation, it may not be possible to reduce potential emissions of odors and related impacts to a less-than-significant level in all instances. As a result, this impact would be considered **significant and unavoidable**.

4.4.5 Mitigation Measures

MM AQ-1: Consider impacts on regional air quality when reviewing proposals for new development. Short-term construction and long-term operational quality impacts shall be evaluated in accordance with SJVAPCD-recommended guidance.

MM AQ-2a: Consider the localized air quality impacts on surrounding land uses, including emissions of toxic air contaminants and odors, when reviewing proposals for new development.

MM AQ-2b: The City will require new development projects to demonstrate LOS reductions for any project-associated intersection to an LOS E or F, or worsen an existing LOS F. If this requirement is not met, a project-specific CO Hotspot analysis shall be conducted. If the CO analysis shows levels above current applicable ambient air quality standards, the project proponent will be required to make intersection improvements to reduce CO emissions at the intersection, alter the project to reduce the impact, or implement other measures sufficient to demonstrate a reduction in predicted localized CO concentrations to below applicable ambient air quality standards.

4.4.6 Cumulative Impacts

The full buildout and development under the 2040 Fowler GP would result in the construction and operation of new development, which would result in increased area, mobile, and energy-related air emissions. As individual development projects are proposed, each project would be required to be analyzed against the SJVAPCD thresholds of significance. However, as it is unlikely that all subsequent projects would exceed these thresholds, it is anticipated that cumulative impacts would be considered **significant and unavoidable**.

³¹ (California Air Resources Board 2005); (San Joaquin Valley Air Pollution Control District 2015))

4.5 Biological Resources

This section evaluates direct and indirect impacts to biological resources, including regulated waterways and wetlands, sensitive habitats and mature native trees, sensitive plants and animals, and wildlife movement corridors, that could result from implementation of the Fowler 2040 GP.

4.5.1 Environmental Baseline

Habitat Types

The Fowler planning area is located in the San Joaquin Valley and consists of ruderal and agricultural habitats. The San Joaquin Valley is bordered by the Sierra Nevada Mountain range to the east and the California Coastal Mountain ranges to the west. According to the California Wildlife Habitat Relationship (CWHR) system's vegetation cover data, the only habitat types found within the planning area are agricultural (vineyard) and ruderal (urban).³² Figure 4-5 contains a map of the CWHR data layer within the planning area. The CWHR data was originally published in 1998, so expansion of urban areas within Fowler is not visualized, though this data does provide evidence that no high-quality wildlife habitat has been present within the planning area for at least the last 25 years. According to the CWHR, the planning area at the time was composed of 90.4% "Vineyard" habitat and 9.6% "Urban" habitat. Recent changes to habitat composition, as seen on aerial imagery in Figure 4-5, consists of conversion of farmland to ruderal and urban areas. These habitats are assumed to also be as highly disturbed by human activities, deterring wildlife and reducing habitat quality for special status species. Additionally, due to urbanization and agricultural practices, water features in the vicinity are limited to channelized irrigation canals and human made basins. Habitats within the planning area are disturbed or frequently maintained and therefore are of relatively low quality for most native wildlife species.

Ruderal Habitats

Ruderal habitats are characterized by a high level of human disturbance and dominated by non-native plant species or devoid of vegetation. Within Fowler, there are vacant, ruderal parcels of land interspersed throughout developed areas and agricultural lands. Ruderal areas within the planning area have minimal value to wildlife due to frequent human disturbance, presence of domestic dogs and cats, and an absence of vegetative cover. However, some disturbance-tolerant species may make incidental use of these ruderal lands. Ruderal habitats within Fowler also include developed areas, such as residential communities and commercial and industrial business development. These areas contain concrete sidewalks, paved streets and lots, and landscaping. Ornamental landscaping can provide habitat to some disturbance-tolerant species, though most wildlife would be deterred and find little in the way of resources.

Agricultural Habitats

Vineyards and orchards — single species of grapes or trees planted in a row — dominate the agricultural landscape in Fowler and the surrounding land. Rows under the vines or trees are usually sprayed with herbicides to prevent the growth of weedy herbaceous plants. Intensive agricultural practices in vineyards and orchards likely limit their value to wildlife and deter special status species; however, some avian and mammalian species have adapted to vineyard habitats.

Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for classifying and mapping all natural communities in California. Just like the special status plant and animal species (see

³² (California Department of Fish and Wildlife 2022)

below), these natural communities of special concern can be found within the California Natural Diversity Database (CNDDDB). The CNDDDB report can be found in [Appendix C](#).

According to CNDDDB, there are no recorded observations of natural communities of special concern within the planning area.

Designated Critical Habitat

The United States Fish and Wildlife Service (USFWS) often designates areas of “critical habitat” when listing species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. These areas designated as critical habitat can be found within the CNDDDB.

According to CNDDDB, there are no areas of designated critical habitat within the planning area.

Wildlife Movement Corridors

Wildlife movement corridors are routes that wild animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The planning area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, Fowler is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration.

Special Status Plants and Animals

A search of the CNDDDB for published accounts of special status plant and animal species was conducted for the *Malaga* and *Conejo* 7.5-minute quadrangles that together contain Fowler in its entirety, and for the 10 surrounding quadrangles: *Caruthers*, *Riverdale*, *Laton*, *Burris Park*, *Selma*, *Sanger*, *Round Mountain*, *Clovis*, *Fresno North*, and *Fresno South*³³. The CNDDDB report can be found in [Appendix C](#).

According to CNDDDB, there have been no recorded observations of special status species within the planning area; however, the special status animal and plant species list, found in [Table 4-12](#) and [Table 4-13](#), have recorded observations in the surrounding vicinity. Due to past and ongoing disturbance and an absence of suitable habitat, many of the species listed in [Table 4-12](#) and [Table 4-13](#) are unlikely to occur within the planning area. Furthermore, a number of the observations/occurrences were recorded more than 50 years ago³⁴, and the associated populations may have been subsequently extirpated.

³³ (California Department of Fish and Wildlife 2022)

³⁴ The CNDDDB comprises two data components: Text information and spatial information. An occurrence is an individual recorded siting of a rare, California-native species or natural community and a timeframe for that observation along with other vital information.

The following explanation of designations will assist with understanding [Table 4-12](#) and [Table 4-13](#).

EXPLANATION OF OCCURRENCE DESIGNATIONS

- Present: Species observed on the site at time of field surveys or during recent past
- Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
- Possible: Species not observed on the site, but it could occur there from time to time
- Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
- Absent: Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

- | | | | |
|-----|---------------------------------|-----|-----------------------------------|
| FE | Federally Endangered | CE | California Endangered |
| FT | Federally Threatened | CT | California Threatened |
| FPE | Federally Endangered (Proposed) | CCT | California Threatened (Candidate) |
| FPT | Federally Threatened (Proposed) | CFP | California Fully Protected |
| FC | Federal Candidate | CSC | California Species of Concern |
| | | CWL | California Watch List |
| | | CCE | California Endangered (Candidate) |
| | | CR | California Rare |

CALIFORNIA NATIVE PLANT SOCIETY (CNPS) LISTING

- | | | | |
|----|---|----|--|
| 1A | Plants Presumed Extinct in California. | 2A | Plants Presumed Extirpated in California, but more common elsewhere. |
| 1B | Plants Rare, Threatened, or Endangered in California and elsewhere. | 2B | Plants Rare, Threatened, or Endangered in California, but more common elsewhere. |

Table 4-12: List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat
American badger (<i>Taxidea taxus</i>)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.
Burrowing owl (<i>Athene cunicularia</i>)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.
California glossy snake (<i>Arizona elegans occidentalis</i>)	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CT, CWL	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation.
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.
Crotch bumble bee (<i>Bombus crotchii</i>)	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south in to Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .
Double-crested Cormorant (<i>Phalacrocorax auratus</i>)	CWL	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	FE, CE	An inhabitant of alkali sinks open grassland environments in western Fresno County. Prefers bare, alkaline, clay-based soils subject to seasonal inundation with more friable soil mounds around shrubs and grasses.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this

Species	Status	Habitat
		species was extirpated from most of its historic range in California, including the Central Valley. This species now occurs exclusively along the coast of southern California (USFWS, 1998).
Northern California legless lizard (<i>Anniella pulchra</i>)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.
Swainson's hawk (<i>Buteo swainsoni</i>)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.
Tricolored blackbird (<i>Agelaius tricolor</i>)	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.
Western mastiff bat (<i>Eumops perotis californicus</i>)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.
Western pond turtle (<i>Emys marmorata</i>)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.
Western spadefoot (<i>Spea hammondi</i>)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.

Table 4-13: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat
Alkali-sink goldfields (<i>Lasthenia chrysantha</i>)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the San Joaquin and Sacramento Valleys at elevations below 656 feet. Blooms February - April.
Bristly sedge (<i>Carex comosa</i>)	CNPS 2B.1	Found throughout Central and Northern California as well as the San Bernadino Mountains. Grows in wet meadows at elevations below 1,315 feet. Blooms July – September.
Brittlescale (<i>Atriplex depressa</i>)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkaline or clay soils, typically in meadows or annual grassland in at elevations below 1050 feet. Sometimes associated with vernal pools. Blooms June–October.
California alkali grass (<i>Puccinellia simplex</i>)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.
California jewelflower (<i>Caulanthus californicus</i>)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.
California satintail (<i>Imperata brevifolia</i>)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.
Forked hare-leaf (<i>Lagophylla dichotoma</i>)	CNPS 1B	Found in cismontane woodland, and valley and foothill grassland communities at elevations between 600 feet and 1100 feet.
Greene’s tuctoria (<i>Tuctoria greenei</i>)	FE, CR, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3500 feet. Blooms May – September.
Lesser saltscale (<i>Atriplex minuscula</i>)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April–October.
Madera leptosiphon (<i>Leptosiphon serrulatus</i>)	CNPS 1B	Found in openings in foothill woodland, often yellow-pine forest, and chaparral at elevations between 1000 feet and 4300 feet. Blooms April – May.
Panoche pepper-grass (<i>Lepidium jaredii</i> ssp. <i>album</i>)	CNPS 1B	Found on steep slopes, washes, alluvial-fans, and clay, sometimes alkaline, within Valley and Foothill Grassland communities in western Fresno County at elevations between 600–2400 feet. Blooms February–June.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations below 2600 feet. Blooms April – September.
Sanford’s arrowhead (<i>Sagittaria sanfordii</i>)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in freshwater-marsh, primarily ponds and ditches, at elevations below 1000 feet. Blooms May–October.

Species	Status	Habitat
Spiny-sepaled button-celery (<i>Eryngium spinosepalum</i>)	CNPS 1B	Found in the Sierra Nevada Foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 feet and 4160 feet. Blooms April–July.
Succulent owl’s-clover (<i>Castilleja campestris</i> var. <i>succulenta</i>)	FT, CE, CNPS 1B	Found in vernal pools, often in acidic soils at elevations below 2500 feet. Blooms April – July.

4.5.2 Regulatory Setting

Federal

Endangered Species Act

The Endangered Species Act (ESA), passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Once a species is listed, it is fully protected from a “take” unless a take permit is issued by the USFWS. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat ((16 USC (United States Code) 1532, 50 CFR (Code of Federal Regulations) 17.3)). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Clean Water Act – Section 404

Section 404 of the Clean Water Act (CWA) regulates all discharges of dredged or fill material into Waters of the United States. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines (33 CFR Section 323.2[f]).

Waters of the United States include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows (33 CFR Section 328.3[a]). Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR Section 328.3[b]). Waters of the United States exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the U.S. Army Corps of Engineers (USACE) as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 CFR Section 328.3[e]).

Discharge of fill material into Waters of the United States, including wetlands, is regulated by the USACE under Section 404 of the Clean Water Act (33 USC 1251–1376). Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the Clean Water Act (33 USC 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the RWQCB. To issue a water quality certification, the RWQCB must indicate that the proposed fill is consistent with the standards set forth by the State.

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668) protects these birds from direct take and prohibits the take or commerce of any part of these species. The USFWS administers the act, and reviews federal agency actions that may affect these species

State

California Endangered Species Act

The California Endangered Species Act (CESA), codified at Fish and Game Code (FGC) Section 2050, et seq., protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Predatory Birds – Fish and Game Code Section 3503, 3503.5, 3800

Under FGC Sections, 3503, 3503.5, and 3800, all predatory birds in the order Falconiformes or Strigiformes in California, generally called “raptors,” are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Lake and Streambed Alteration – Fish and Game Code Section 1601-1603

Under FGC Section 1601-1603, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a “Streambed Alteration Agreement” from CDFW prior to any alteration of a lakebed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

California Environmental Quality Act

CEQA provides that a species that is not listed on the federal or State endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA, public agencies must determine if a project would adversely affect a species that is not protected by the ESA or CESA. Species that are not listed under ESA or CESA, but are otherwise eligible for listing (i.e., candidate or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of “Species of Special Concern,” developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This

information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

California Native Plant Protection Act

The California Native Plant Protection Act is intended to preserve, protect, and enhance endangered or rare native plants in California. This act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under this Act, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare, although not threatened with immediate extinction, if it is in such small numbers throughout its range that it may become endangered if its present environment worsens. This act prohibits any person from importing into or taking, possessing or selling within California, except as incident to the possession or sale of the real property on which the plant is growing, any endangered or rare native plant or as otherwise excepted under the Act.

The CNPS maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to population of rare plants receive consideration under CEQA review. The CNPS ranking system applicable to the project are defined below:

- List 1A: Plants presumed extinct
- List 1B: Plants rare, threatened or endangered in California and elsewhere
- List 2: Plants rare, threatened or endangered in California, but more numerous elsewhere

Local

Street Tree Law of the City of Fowler

Found in FMC Title 7, Chapter 1, this law regulates the planting, trimming, pruning, and removal of any tree or shrub within any public area and prohibits these activities without the permission of the City Superintendent.

4.5.3 Methodology and Thresholds of Significance

The impact analysis is based on available literature regarding the existing biological resources within the planning area. Impacts to biological resources were assessed using significance criteria from federal, State, and local regulations. Impacts to flora and fauna may be determined to be significant even if they do not directly affect rare, threatened, or endangered species because development facilitated by the 2040 Fowler GP may result in indirect impacts to species.

PRC Section 21001(c) states that it is the policy of the State of California to “prevent the elimination of fish and wildlife species due to man’s activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities.” Impacts on biological resources were assessed using the following impact significance criteria, based on the State CEQA Guidelines Appendix G checklist. The Fowler 2040 GP would have a significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.5.4 Impacts

Threshold 1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact. According to CNDDDB data, there have been no documented occurrences of special status species within the planning area. While there are several special status species known to occur in the region, based on the highly disturbed (non-natural, urbanized state) nature of the planning area, sensitive species are not expected to regularly occur. San Joaquin kit fox, for example, is a highly mobile species that has both core and satellite populations throughout the Central Valley. However, the range of this species does not cross over the planning area, with the nearest suspected populations mapped approximately 50 miles southeast and 40 miles northwest of Fowler, respectively.³⁵ It is highly unlikely that this species would pass through the planning area during dispersal between populations. Developed and agriculturally disturbed areas within or surrounding the City include vineyards, almond orchards, cotton and alfalfa fields, irrigated row and field crops, residential development, commercial development, and industrial development. Species that occur in these habitats are typically adapted to anthropogenic disturbance and/or are ornamental species. Plant species in urban habitats typically consist of ornamental and other non-native invasive plant species, with large, developed areas lacking vegetation. Therefore, development facilitated by the Fowler 2040 GP would have a less than significant impact to special status species.

Threshold 2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. Riparian habitats are absent from the planning area. The San Joaquin River Ecological reserve, located approximately 18 miles northwest of the planning area in Fresno, includes a largely undisturbed riparian corridor.³⁶ The only water bodies present within the planning area and surrounding region are irrigation canals, which are highly maintained and used primarily for agricultural water

³⁵ (United States Fish & Wildlife Service 2022)

³⁶ (California Department of Fish and Wildlife 2022)

deliveries. Additionally, there are no CNDDDB-designated “natural communities of special concern” recorded within the planning area or surrounding lands. There would be no impact.

Threshold 3: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. According to currently available watershed data, wetlands, rivers, and streams that qualify as waters of the United States are absent from the planning area.³⁷ Canals are present within and adjacent to the planning area; however, these canals are excavated by humans, not within the footprint of a natural stream or river, and do not form tributaries to known waters of the United States. The National Wetland Inventory identifies multiple human excavated wetlands within the planning area³⁸. Depending on the size and function of these wetlands, they could potentially be categorized as waters of the United States or waters of the State. Future development within the planning area may, therefore, have adverse impacts on wetlands and areas under the jurisdiction of the RWQCB, and/or the USACE. If development occurring within the planning area will result in impacts to waters of the United States, the required permits from CDFW, USACE, and RWQCB will need to be secured. Compliance with each permit’s required avoidance, minimization, and mitigation measures will ensure that impacts to these potentially jurisdictional waters are less than significant in nature or are fully mitigated.

Threshold 4: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant. Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. Habitats within and surrounding the planning area are composed of ruderal/urban areas and intense agricultural production which would deter wildlife from dispersing through the region. Additionally, no high-value habitats are located nearby with the Sierra Nevada foothills located approximately 15 miles east of the planning area and the inner Coastal Range located approximately 40 miles west of the planning area. It is therefore highly unlikely that species would pass through the planning area during dispersal or migration. The only features in the planning area that could potentially be used for wildlife movement would be agricultural canals. However, canals in the region are highly maintained providing little cover for wildlife to move through the area. Any disturbance to agricultural canals during development facilitated by the Fowler 2040 GP would have little to no impact on wildlife movement in the region; therefore, any impacts would be less than significant.

Threshold 5: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant. Development facilitated by the Fowler 2040 GP would occur primarily in already developed areas or areas currently under agricultural production. However, there are trees such as street trees in these areas that could be removed or substantially pruned once development does occur.

³⁷ (United States Environmental Protection Agency 2022)

³⁸ (United States Fish and Wildlife Services 2022)

Development would be subject to all applicable local policies and regulations related to the protection of trees. Further, the following policies and action items of the Fowler 2040 GP would minimize impacts to trees within Fowler.

Policy OS-24	Require the retention of trees of significance (such as heritage trees) by promoting stewardship of such trees and ensuring that the design of development projects provides for the retention of these trees wherever possible. Where tree removal cannot be avoided, the City shall require tree replacement or suitable mitigation.
Action Item OS-24a	Develop and implement a Tree Preservation Ordinance for the preservation of the City's urban forest, including heritage trees, on public and private property.

With implementation of Fowler 2040 GP policy OS-24 and action item OS-24a, impacts to these biological resources would be less than significant.

Threshold 6: Would the Project conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. There are no Habitat Conservation Plans or Natural Community Conservation Plans applicable to the planning area. Therefore, there would be no impact.

4.5.5 Mitigation Measures

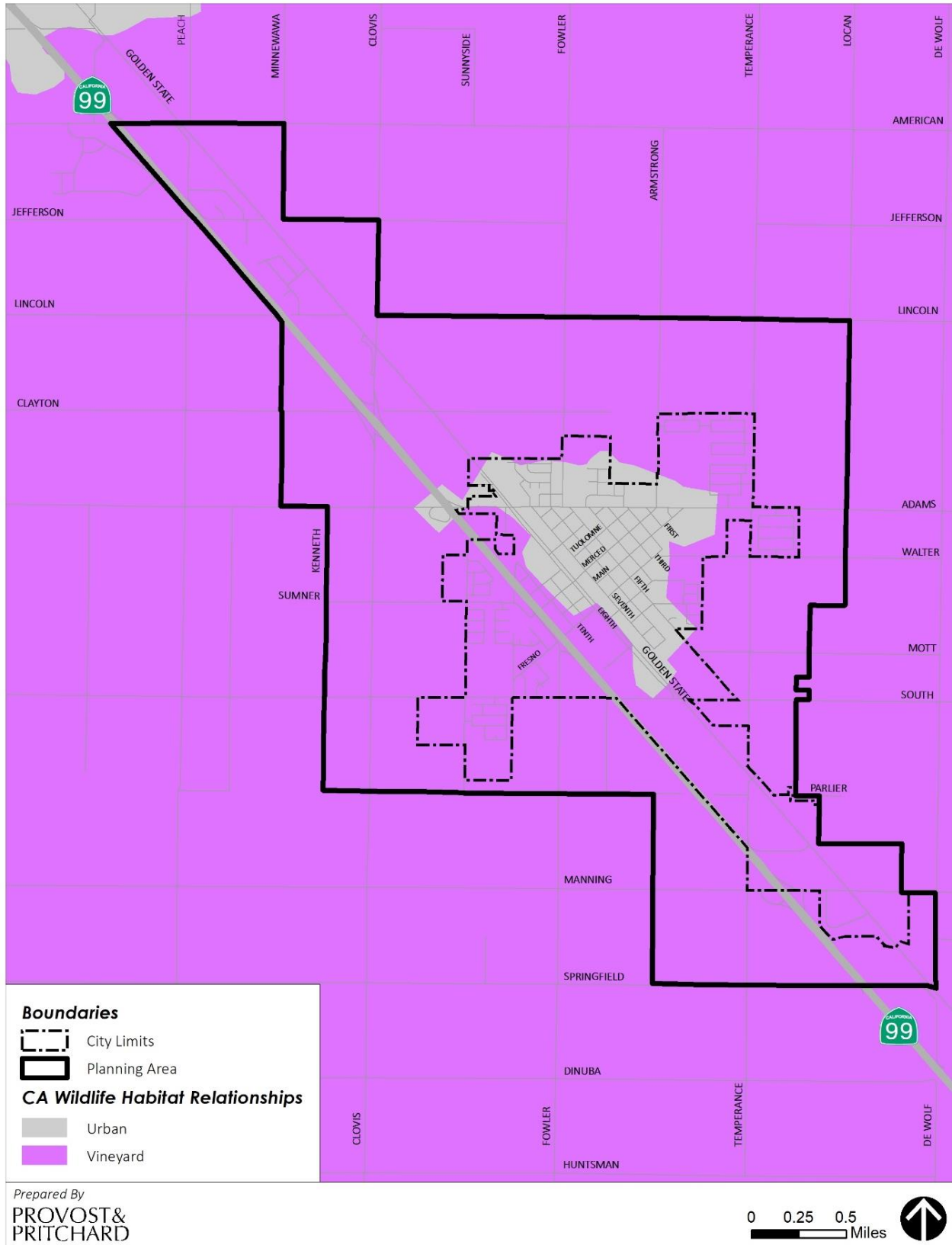
Mitigation measures are not required.

4.5.6 Cumulative Impacts

Potential impacts to biological resources, as described above, are related to direct and indirect impacts to special-status species or their habitat; impacts to wetlands; impacts to tree preservation; or interference with wildlife movement. Implementation of the Fowler 2040 GP could result in regional impacts on special-status species, wetlands, as well as tree preservation. Due to the potential direct and indirect impacts that may occur as a result of the Fowler 2040 GP, the proposed GP could contribute to this impact.

The Fowler 2040 GP goals, policies, and action items set requirements for actions to be taken to preserve trees of significance and avoid tree removal when possible. High-quality habitat for special status species is currently absent from the planning area, but through the implementation of policies and goals laid out in the Fowler 2040 GP, impacts to ruderal and agricultural habitats will be mitigated. Potential impacts to jurisdictional wetlands, while not addressed in the Fowler 2040 GP, would be mitigated through compliance with the permitting processes required by CDFW, USACE, and RWQCB. While potential for impacts to wildlife movement corridors does exist, it was determined that these impacts would be less than significant due to the lack of connectivity to high quality habitat and the ongoing disturbance to possible corridors by agricultural production. Therefore, impacts to special status species and their habitat; tree preservation; wetlands; and wildlife movement would be less than significant. The contribution of the proposed Fowler 2040 GP to cumulative impacts would be less than significant with implementation of Fowler 2040 GP goals and policies.

Figure 4-5: California Wildlife Habitat Relationships Map



4.6 Cultural Resources

This section evaluates the impacts to historical and archaeological resources, including the unanticipated discovery of human remains, that could result from implementation of the 2040 Fowler GP.

4.6.1 Environmental Baseline

Cultural resources include prehistoric or historical archaeological sites, isolated artifacts or features, as well as built-environment resources (i.e., a historical building, structure, or object). The term “historical” applies to archaeological artifacts and features as well as standing buildings, structures, or objects that are 50 years of age or older.

Regional Prehistory

During the 20th century, many archaeologists developed chronological sequences to explain prehistoric cultural changes within all or portions of northern California.³⁹ California prehistory is generally divided into three broad time periods: Paleoindian (11,550-8550 B.C.), Archaic (8550 B.C.-A.D. 1100), and Emergent Occupation (A.D. 1000-European Contact). Knowledge of past environments helps archaeologist to understand the conditions in which prehistoric people lived and how they adapted to those conditions. The following paragraph lays out a brief historical timeline which is used as a foundation for the analysis found in **Section 4.6.4** below. Understanding the history of the San Joaquin Valley is important to understanding what, if any, archaeological significance may be found in this area. This information is used to evaluate the potential for impacts to cultural resources as a result of buildout of the Fowler 2040 GP.

Paleoindian Period (11,550-8550 B.C.)

There is little known information about the Paleoindian period in the Central Valley. Geoarchaeological studies have demonstrated that erosion and deposition have buried or destroyed early archaeological deposits. The earliest accepted date of human occupation in the Central Valley ranges from 11,550 to 8550 B.C. and comes from fluted projectile points similar to Clovis points found at sites near Tracy Lake and the Tulare Lake Basin.⁴⁰

Archaic Period (8550 B.C.-A.D. 1100)

The Archaic Period extends a period of approximately 9,650 years and is generally organized into the following three time periods.

Lower Archaic (8550-5550 B.C.)

Climate change at the end of the Pleistocene Era caused significant periods of alluvial deposition beginning around 9050 B.C. The Lower Archaic, like the Paleoindian Period, is represented only by limited isolated finds. Only one Lower Archaic site has been identified in the Central Valley and a few located in the surrounding foothills.⁴¹ Typical Lower Archaic artifacts include flaked stone crescents and stemmed points.

Middle Archaic (5550-550 B.C.)

The Middle Archaic record has revealed a pattern of organized subsistence strategies and increased residential stability. Middle Archaic sites are relatively common in the foothills surrounding the Central Valley and show relatively little change from the Lower Archaic.⁴²

³⁹ (Jones 2007):308-312; (Moratto 1984)

⁴⁰ (Jeffrey Rosenthal, Gregory White, and Mark Sutton 2007)

⁴¹ (Jeffrey Rosenthal, Gregory White, and Mark Sutton 2007)

⁴² Ibid

During this time, the mortar and pestle become more widespread, suggesting a shift toward more intensive subsistence practices. Fishing technologies, such as bone gorges, hooks, and spears, also appeared during the Middle Archaic suggesting a new focus on fishing. Several other technologies become apparent during this time. Baked-clay impressions of twined basketry, simple pottery, and other baked clay objects have been found at several sites. Personal adornment items also become more frequent. Exchange with outside groups is evidenced by the presence of obsidian, shell beads, and ornaments.⁴³ Trade also seemed to be focused on utilitarian items such as obsidian or finished obsidian tools from at least five separate sources.⁴⁴

Upper Archaic (550 B.C.-A.D. 1100)

The Upper Archaic is better represented in the archaeological record than earlier periods. Cultural diversity was more pronounced and is marked by contrasting material cultures throughout the Central Valley.⁴⁵

During this period, numerous specialized technologies were developed such as bone tools and implements, manufactured goods such as Olivella and Haliotis beads and ornaments, well-made ceremonial blades, and ground-stone plummets. People living in the San Joaquin Valley region traded with neighboring groups for obsidian. While Upper Archaic period economies varied by region throughout the Central Valley, they were primarily focused on seasonal resources such as acorns, salmon, shellfish, rabbits, and deer.⁴⁶

Emergent Occupation (A.D. 1000-European Contact)

The stable climatic conditions of the Upper Archaic continued into the Emergent Period. There has been sporadic research on the San Joaquin Valley during this time period, so only the Pacheco Complex on the western edge of the Valley has been formally defined. After A.D. 1000, many of the technologies witnessed during the Archaic Period disappeared and were replaced by cultural traditions witnessed by European contact. During the Emergent Period, the bow and arrow replaced the atlatl as the preferred hunting method sometime between A.D. 1000 and 1300.

Increased social complexity is evidenced by increased variation in burial types and offerings and larger residential communities. Grave offerings such as shell beads, ornaments, ritually “killed” items, and mortars and pestles are often found in burials. Pottery was frequently obtained through import in the western trade with groups living in the foothills to the east. The Panoche side-notched point became important on the western side of the San Joaquin Valley.⁴⁷ In addition to the side-notched point, the Panoche Complex featured large circular structures, flexed burials, marine shell beads, bone awls, milling stones, and mortars and pestles.⁴⁸

Early Exploration

Post-European contact history for the California is generally divided into three periods: the Spanish Period (1769-1822), the Mexican Period (1822-1848), and the American Period (1848-present).

Spanish Period (1769-1822)

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now known as southern California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Kyle 2002). Gaspar de Portolá and Franciscan Father Junipero

⁴³ (Jeffrey Rosenthal, Gregory White, and Mark Sutton 2007); (Moratto 1984)

⁴⁴ (Moratto 1984)

⁴⁵ (Jeffrey Rosenthal, Gregory White, and Mark Sutton 2007)

⁴⁶ (Jeffrey Rosenthal, Gregory White, and Mark Sutton 2007)

⁴⁷ Ibid

⁴⁸ (Moratto 1984)

Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá in 1769. This was the first of 21 missions erected by the Spanish between 1769 and 1823. Portolá continued north, eventually reaching the San Francisco Bay in 1769. In 1772, Pedro Fages led the first Europeans to enter the San Joaquin Valley. Fages led a small expedition into the southernmost part of the valley, stopping at a village on the shores of Buena Vista Lake, before heading towards San Luis Obispo. The next European to enter the valley was Francisco Garcés in 1776. In the early 1800s, numerous expeditions were made into the Central Valley to search for land for new missions or to recapture runaway neophytes. However, the Spanish never succeeded in taking control of the region and no missions were established in the Central Valley. Perhaps the most lasting fixture the Spanish built in the San Joaquin Valley was El Camino Viejo, also known as the Los Angeles Trail, an early 19th Century ox cart trail whose eastern branch passed through modern-day Fresno County.⁴⁹

Mexican Period (1822-1848)

The Mexican Period commenced when news of the success of the Mexican Revolution against the Spanish crown (1810-1821) reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. Beginning in 1833, mission lands were conferred as rancho grants. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time.⁵⁰ However, no ranchos were established in the San Joaquin Valley.⁵¹

American Period (1848-Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico \$15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. Settlement of southern California continued dramatically in the early American Period. The discovery of gold in northern California in 1848 led to the California Gold Rush, although the first California gold was actually discovered in Placerita Canyon near the San Fernando Mission in 1842.⁵² In 1850, California was admitted into the United States and by 1853, the population of California exceeded 300,000. While gold prospectors were among the earliest American-era settlers of what is now Fresno County, gold mining there was relatively unproductive and ran its course by the early 1950s.⁵³ Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.⁵⁴

Local History

Fresno County

Fresno County was established on April 19, 1856. Fresno County underwent four stages of development: the mining period, which continued into the 1860s; the sheep and cattle-raising period from the 1860s to 1874; the general farming period from the 1870s; and the later transition to irrigated row crops. Moses J. Church developed some of the county's first canals, fostering an era of prosperous irrigated row crop farming.⁵⁵ To this day, agriculture remains a major facet of Fresno County's economy.

⁴⁹ (Douglas 2002)

⁵⁰ Ibid

⁵¹ (Nettles and Baloian 2006)

⁵² (Workman 1935)

⁵³ (Douglas 2002)

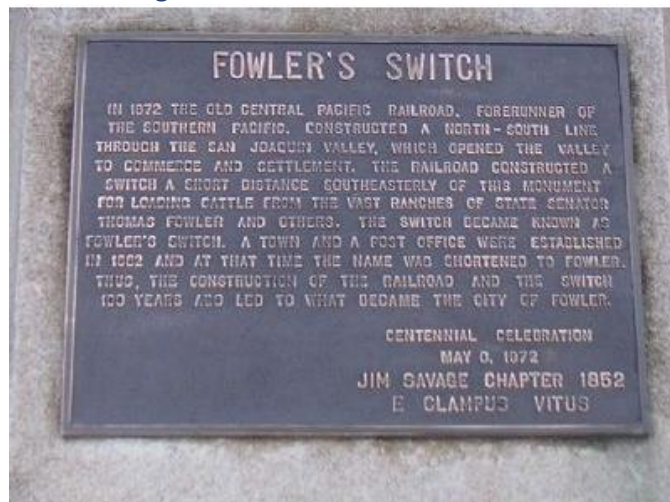
⁵⁴ (Douglas 2002); (Nettles and Baloian 2006)

⁵⁵ (Shallat 1978)

City of Fowler

The City is named for Thomas Fowler, who was a State Senator from 1869–1872, and a railroad switch that was built on the Fowler ranch. Following the completion of the transcontinental railroad in 1869, the Central Pacific Railroad (now known as the Southern Pacific Railroad) began construction of a rail line through the Central Valley, and the segment through Fowler was laid around 1872. The Valley branch of the historic Southern Pacific Railroad is presently owned and operated by the Union Pacific Railroad. The town developed around the railroad switch and became known as Fowler’s Switch.⁵⁶ The City was incorporated in 1908 and its name was eventually shortened. In May 1973, Fowler’s Switch was registered as a California Point of Interest for its local significance to Fowler. The marker for the Fowler Switch is located at the intersection of East Merced Street and South 7th Street.

Figure 4-6: Fowler's Switch Marker



Marker Inscription:

In 1872, the old Central Pacific Railroad, forerunner of the Southern Pacific, constructed a north-south line through the San Joaquin Valley, which opened the valley to commerce and settlement. The railroad constructed a switch a short distance south-easterly of this monument for loading cattle from the vast ranches of State Senator Thomas Fowler and others. The switch became known as Fowler's Switch. A town and a post office were established in 1882 and at that time the name was shortened to Fowler. Thus, the construction of the railroad and the switch 100 years ago led to what became the City of Fowler.⁵⁷

4.6.2 Regulatory Setting

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) established the Advisory Council on Historic Preservation, State Historic Preservation Officer (SHPO), the NRHP, and Section 106 review. The goal of the NHPA is to encourage federal agencies to act as responsible stewards of the nation’s historic resources as far as their actions affect historic resources- meaning those listed on or eligible for listing on the NRHP. The NRHP

⁵⁶ (State of California Office of Historic Preservation 2019)

⁵⁷ (HMdb.org 2010)

recognizes buildings, structures, sites, district, and objects equal to or greater than 50 years old that are determined to be significant in respect to American history, architecture, archaeology, engineering, or culture, and at the local, State, or national level. To be determined eligible for listing on the NRHP a resource must also retain integrity in terms of location, design, setting, materials, workmanship, feeling, and association.

Resources determined eligible for, or which are listed on the NRHP, are afforded protection under Section 106 of the NHPA (as well as under CEQA). The Section 106 process serves to carry out the mission of the NHPA in that, when there is a federal or federally licensed action that has the potential to affect historic resources (i.e., those resources listed on or determined legible for listing on the NRHP), that agency is required to identify and assess the effects of its actions on historic resources.

State

California Register of Historical Resources

The importance or significance of a cultural resource depends on whether it qualifies for inclusion on the California Register of Historical Resources (CRHR). Cultural resources determined eligible for the CRHR are called “historical resources” (CEQA Guidelines Section 15064.5). In order to be considered a historical resource, a cultural resource must possess both historical significance and integrity according to the criteria defined in CEQA Guidelines Section 15064.5(a)(3).

The CRHR is an inventory of significant architectural, archaeological, and historical resources in the State of California. Important cultural resources can be listed in the CRHR through a number of methods, and listing requires approval from the State Historical Resources Commission. Properties can be nominated to the CRHR by local governments, private organizations, or citizens. State Historical Landmarks and National Register-listed properties gain automatic listing in the CRHR. The evaluative criteria used by the CRHR for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places. In order for a cultural resource to be significant, or in other words eligible, for listing in the CRHR, it must reflect one or more of the following criteria (PRC Section 5024.1c):

- **Criterion 1 (Events):** Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- **Criterion 2 (Persons):** Resources that are associated with the lives of persons important to local, California, or national history.
- **Criterion 3 (Architecture):** Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.
- **Criterion 4 (Information Potential):** Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California, or the nation.

California Points of Historical Interest on the CRHR are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR.

No historical resource may be designated as both a Landmark and a Point. If a Point is subsequently granted status as a Landmark, the Point designation will be retired.

California Environmental Quality Act

CEQA requires that public agencies assess the effects of private and public projects on historical resources prior to approval of or determination to carry out those projects. Historical resources are defined as buildings, sites, structures, objects, areas, places, records, or manuscripts that the lead agency determines to have historical significance, including architectural, archaeological, cultural, or scientific significance. CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered.

However, only significant historical resources need to be addressed. Therefore, before the assessment of effects or development of mitigation measures, the significance of cultural resources must be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources;
- Evaluate the eligibility of historical resources;
- Evaluate the effects of the project on all eligible historical resources.

In addition, properties that are listed in or eligible for listing in the NRHP are considered eligible for listing in the CRHR and thus are significant historical resources for the purposes of CEQA (PRC Section 5024.1(d)(1)).

According to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant impact on the environment (CEQA Guidelines Section 15064.5(b)). CEQA also states that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of an historical resource or its immediate surroundings such that the significance of the resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or materially and adversely alter the physical characteristics of a historical resource that convey its historical significance and qualify or justify its eligibility for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Significant Historical Resources under CEQA Guidelines

In completing an analysis of a project under CEQA, it must first be determined if the project site possesses a historical resource. A site may qualify as a historical resource if it falls within at least one of four categories listed in CEQA Guidelines Section 15064.5(a):

1. A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the CRHR (PRC Section 5024.1, Title 14 CCR, Section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in Section PRC Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements of PRC Section 5024.1 (g), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC Section 5024.1; Title 14 CCR,

Section 4852). These conditions are related to the eligibility criteria for inclusion in the CRHR (PRC Sections 5020.1[k], 5024.1, 5024.1[g]). A cultural resource may be eligible for inclusion in the CRHR if it:

- a. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - b. Is associated with the lives of persons important in our past;
 - c. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values; or
 - d. Has yielded, or may be likely to yield, information important in prehistory or history.
4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k)), or identified in an historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

A lead agency must consider a resource that has been listed in or determined to be eligible for listing in the CRHR (Category 1) as an historical resource for CEQA purposes. In general, a resource that meets any of the other three criteria listed in CEQA Guidelines Section 15064.5(a) is also considered to be a historical resource unless “the preponderance of evidence demonstrates” that the resource is not historically or culturally significant.”

Health and Safety Code

The discovery of human remains is regulated according to California Health and Safety Code (HSC) Section 7050.5, which states, “If human remains are encountered, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified to the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify Most Likely Descendant (MLD). With the permission of the landowner or his or her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.”

Local

The current General Plan does not contain any policies regarding the preservation of cultural and historical resources. Furthermore, there are no current ordinances regarding these resources in place for Fowler.

4.6.3 Methodology and Thresholds of Significance

The significance of a cultural resource and subsequently the significance of any impact is determined by consideration of whether or not that resource can increase our knowledge of the past and the importance of that resource to cultural groups, among other things. The determining factors are site context and degree of preservation.

Historical resources are “significantly” affected if there is demolition, destruction, relocation, or alteration of the resource or its surroundings. Generally, impacts to historical resources can be mitigated to below a

level of significance by following the Secretary of the Interior’s Guidelines for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Guidelines Section 15064.6(b)). In some circumstances, documentation of an historical resource by way of historic narrative, photographs or architectural drawings as mitigation for the effects of demolition of the resource will not mitigate the effects to a less than significant level (Guidelines Section 15126.4(b)(2)). Preservation in place is the preferred form of mitigation for archaeological resources as it retains the relationship between artifact and context and may avoid conflicts with groups associated with the site ([Guidelines Section 15126.4 (b)(3)(A)). If an archaeological resource does not meet either the historic resource or the more specific “unique archaeological resource” definition, impacts do not need to be mitigated (Guidelines Section 15064.5(e)). Where the significance of a site is unknown, it is presumed to be significant for the purpose of the DEIR investigation.

The presence and significance of a potential tribal cultural resource is determined through consultation between lead agencies and local California Native Americans. Impacts to tribal cultural resources are highly dependent on the nature of the resource but, in general, could occur if there is destruction or alteration of the resource and its surroundings, restricted access to the resource, or other disturbances.

Records Search

On February 22, 2021, Provost & Pritchard received a records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System, located at California State University, Bakersfield. The records search encompassed the planning area. SSJVIC staff examined site record files, maps, and other materials to identify previously recorded resources and prior surveys within the delineated area (**Appendix D**). Additional sources included SHPO Historic Properties Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources.

According to the research performed by SSJVIC staff, there have been 15 previous cultural resource studies conducted within the planning area. A list of the Cultural Surveys in the Planning area can be found in **Appendix D**.

There are 11 recorded resources within the planning area as shown in **Table 4-14**. These resources consist of historic era trash scatters, historic era buildings, historic era railroads, an historic era park, and an historic era canal. The Fowler Switch Landmark is listed as a California Point of Interest.

Table 4-14: Previous Cultural Surveys in the Planning Area

Report Number	Year	Author(s)	Title
FR-00135	1995	Hatoff, Brian, Voss, Barb, Waechter, Sharon, Benté, Vance, and Wee, Stephen	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project.
FR-00288	Not Available-		
FR-00338	1979	Cursi, Kathleen L.	Archaeological Reconnaissance for Manning Avenue Between SR 99 and McCall Avenue, Fresno County, California (near Sanger/Selma)
FR-00778	1994	Varner, Dudley M.	An Archaeological Study of a Property on State Highway 99 at Manning Avenue in Fresno County, California
FR-01636	Not Available-		
FR-01837	Not Available-		
FR-01889	Not Available-		
FR-01904	Not Available-		

Report Number	Year	Author(s)	Title
FR-02108		Not Available-	
FR-02287	2006	Arrington, Cindy, Bass, Bryon, Brown, Joan, Corey, Chris, and Hunt, Kevin	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California
FR-02294		Not Available-	
FR-02452	2011	Windmiller, Ric	Golden State Corridor Project Cultural Resources Assessment Fresno County, California
FR-02642		Not Available-	
FR-02716		Not Available-	
FR-02935		Not Available-	

There are no recorded cultural resources within the planning area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Inventory of Historic Resources, or the California State Historic Landmarks.

4.6.4 Impacts

Threshold 1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?

Less than Significant Impact. Based on CEQA Guidelines Section 15064.5, the Fowler 2040 GP would have a significant impact on historical resources if it would cause a substantial adverse change in the significance of a historical resource. Historical resources include properties eligible for listing on the National Register of Historic Places, the CRHR, or the local register of historical resources. In addition, as explained in CEQA Guidelines Section 15064.5, “substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.”

Effects on cultural resources are only knowable once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions, project activities that may alter the character of a built environment resource, and/or the characteristics of the proposed ground-disturbing activity. Demolition or other structural alterations associated with development facilitated by the Fowler 2040 GP has the potential to alter historic built-environment resources. Ground-disturbing activities associated with development facilitated by the Fowler 2040 GP, particularly in areas that have not previously been developed with urban uses, have not been studied through a cultural resources investigation, or when excavation depths exceed those previously attained, have the potential to damage or destroy previously-unknown historic or prehistoric archaeological resources that may be present on or below the ground surface. Consequently, damage to or destruction of cultural resources could occur because of future development under the Fowler 2040 GP. In order to ensure that development within Fowler does not have a detrimental effect on cultural resources, each project would need to be assessed as it is proposed.

Although there are no specific development projects associated with the Fowler 2040 GP, implementation of the plan would guide development in Fowler through the year 2040. Development under the proposed Fowler 2040 GP has the potential to affect known or unknown historical and/or archaeological resources. However, policies CDES-10, CDES-12, and CDES-13, outlined below, would ensure that potential impacts related to historic resources are less than significant.

Policy CDES-10	<p>Improvements to older buildings in the downtown area and throughout the City should enhance rather than weaken the original character of such buildings.</p>
Policy CDES-12	<p>All construction shall cease, and the Community Development Director and City Engineer shall be notified immediately if any prehistoric, archaeological, or fossil artifact or resource is uncovered during construction. All construction shall immediately stop and an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained, at the applicant's and/or successors-in-interest's expense, to evaluate the find(s) and recommend appropriate action according to Section 15064.5 of the California Environmental Quality Act (CEQA) Guidelines. If avoidance is infeasible, other appropriate measures would be instituted. Work may proceed on other parts of the project subject to direction of the archaeologist while assessment of historic resources or unique archaeological resources is being carried out.</p>
Policy CDES-13	<p>All construction shall cease if any human remains are uncovered, and the Community Development Director, City Engineer and Fresno County Medical Examiner and Coroner shall be notified in accordance to Section 7050.5 of the California Health and Safety Code. If human remains are determined to be those of a Native American or has reason to believe that they are those of a Native American, the Native American Heritage Commission shall be contacted, and the procedures outlined in CEQA Section 15064.5(e) shall be followed.</p>

In addition to compliance with federal, State, and local laws and regulations as outlined above in [Section 4.6.2](#) to mitigate and/or avoid any impacts to known and unknown cultural and historical resources, compliance with the Fowler 2040 GP policies listed above would ensure that potential impacts related to historic resources are less than significant impact.

Threshold 2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than Significant Impact. Based on the regional history of the area it may be assumed that there would be potential for subsurface cultural artifacts, both historic and prehistoric age, within the planning area. Effects on archaeological resources can only be determined once a specific project has been proposed because the effects are dependent on both the individual project site conditions and the characteristics of the proposed ground-disturbing activity. Ground-disturbing activities associated with development facilitated by the Fowler 2040 GP have the potential to damage or destroy previously unknown historic or prehistoric archaeological resources that may be present on or below the ground surface. Potential impacts to historic or prehistoric archaeological resources are most likely to occur in areas that have not previously been developed with urban uses, have not been studied through a cultural resource investigation, or when excavation extends to new depths. Consequently, damage to or destruction of previously unknown sub-surface cultural resources could occur as a result of development under the Fowler 2040 GP. However, policies CDES-12 and CDES-13 of the Fowler 2040 GP, as outlined above, would ensure that potential impacts to unknown archaeological resources are less than significant.

Threshold 3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact. As discussed above in [Section 4.5.1](#) there is a historic and prehistoric history to the region. Human burials outside of formal cemeteries often occur in prehistoric archaeological contexts. The potential exists for these resources to be present in areas where development has not yet occurred. Excavation during construction activities in the planning area would have the potential to disturb these resources, including Native American burials.

Human burials, in addition to being potential archaeological resources, are subject to specific provisions for treatment in PRC Section 5097. The California Health and Safety Code (Sections 7050.5, 7051, and 7054) has specific provisions for the protection of human burial remains. Existing regulations prohibit interfering with human burial remains; protect human remains from disturbance, vandalism, or destruction; and establish procedures to be implemented if Native American skeletal remains are discovered. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes.

All development facilitated by the Fowler 2040 GP would be required to adhere to existing regulations regarding the treatment of human remains. Further, policies CDES-12 and CDES-13 of the Fowler 2040 GP, as outlined above, would ensure that potential impacts to unknown human remains are less than significant.

4.6.5 Mitigation Measures

Mitigation measures are not required.

4.6.6 Cumulative Impacts

Development facilitated by the Fowler 2040 GP may contribute to cumulative impacts on cultural resources as growth occurs in the planning area. The increase in growth from development may impact existing and previously undisturbed and undiscovered historical, archaeological, and paleontological resources. While most cultural resources are typically site-specific, with impacts that are project-specific, others may have regional significance; for example, a historical structure that represents the last known example of its kind. Implementation of the Fowler 2040 GP policies outlined in this section would ensure that cumulative cultural resources impacts are less than significant.

4.7 Energy

This section evaluates impacts related to energy that could result from implementation of the Fowler 2040 GP.

4.7.1 Environmental Baseline

Energy Fundamentals

Energy use is typically associated with transportation, construction, and the operation of land uses. Transportation energy use is generally categorized as direct and indirect energy. Direct energy relates to energy consumption by vehicle propulsion. Indirect energy relates to the long-term energy consumption of equipment, such as maintenance activities. Energy is also consumed by construction, routine operation, and maintenance of land uses. Construction energy relates to a direct one-time energy expenditure primarily associated with the consumption of fuel to operate construction equipment. Energy consumption related to land use is normally associated with direct energy consumption for heating, ventilation, and air conditioning of buildings.

Physical Setting

Fowler is located in Fresno County. The climate in the project area is semi-arid, with an annual normal precipitation of approximately 11 inches. Temperatures in the project area range from an average minimum of approximately 38 degrees Fahrenheit (°F), in January, to an average maximum of 98°F, in July (WRCC 2022).

Energy Resources

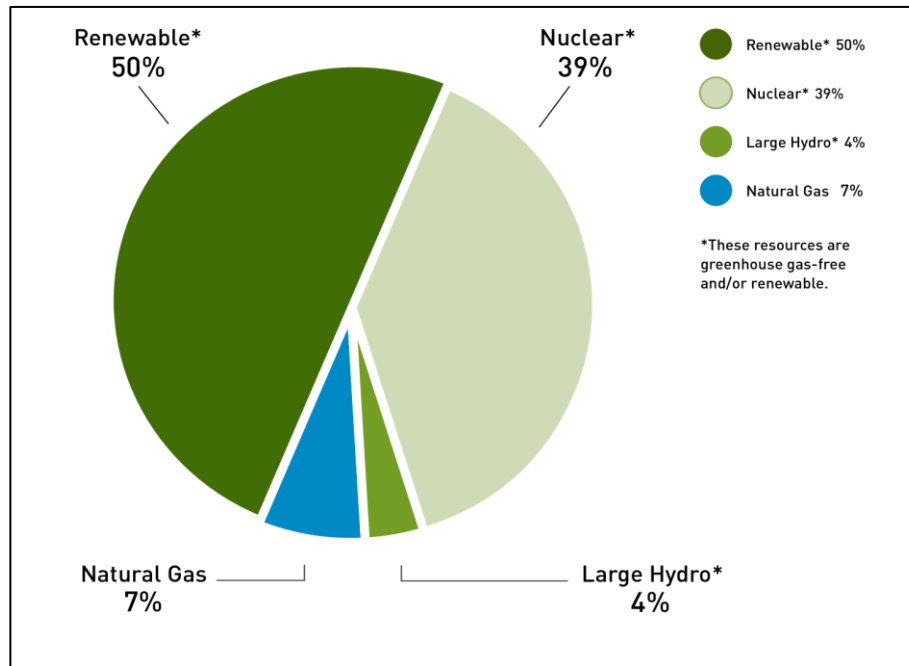
Energy sources for Fowler are served primarily by Pacific Gas and Electric (PG&E). Energy resources consist largely of natural gas, nuclear, fossil fuels, hydropower, solar, and wind. The primary use of energy sources is for electricity to operate campus facilities.

Electricity

Electric services within Fowler are provided by the regulated electric utility, PG&E. The breakdown of PG&E's power mix is shown in Figure 2. As shown, 97 percent of PG&E's 2021 total electric power mix came from greenhouse gas (GHG)-free sources that include nuclear, large hydro, renewable energy sources, and natural gas.⁵⁸

Table 4-15: PG&E 2021 Power Mix

⁵⁸ (PG&E 2021)



Source: PG&E 2021

Natural Gas

Natural gas services in Fowler are provided by Southern California Gas Company (SoCalGas). SoCalGas's natural gas system encompasses approximately 20,000 square miles in California (SoCalGas 2020). Natural gas throughput provided by SoCalGas totals approximately 2.8 billion cubic feet per day.⁵⁹

4.7.2 Regulatory Setting

Federal

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, the USEPA and National Highway Traffic Safety Administration (NHTSA), on behalf of the United States Department of Transportation (USDOT), issued final rules to further reduce greenhouse gas (GHG) emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond. NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) limiting vehicle emissions to 163 grams of carbon dioxide (CO₂) per mile for the fleet of cars and light-duty trucks by the model year 2025.

In January 2017, USEPA Administrator Gina McCarthy signed a Final Determination to maintain the current GHG emissions standards for the model year 2022-2025 vehicles. However, on March 15, 2017, USEPA Administrator Scott Pruitt and USDOT Secretary Elaine Chao announced that USEPA intends to reconsider the Final Determination. On April 2, 2018, USEPA Administrator Scott Pruitt officially withdrew the January 2017 Final Determination, citing information that suggests that these current standards may be too

⁵⁹ (Southern California Gas Company 2013)

stringent due to changes in key assumptions since the January 2017 Determination. According to the USEPA, these key assumptions include gasoline prices and overly optimistic consumer acceptance of advanced technology vehicles. The April 2, 2018, notice is not USEPA's final agency action. The USEPA intends to initiate rulemaking to adopt new standards. Until that rulemaking has been completed, the current standards remain in effect.⁶⁰

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the NHTSA, which is part of the U.S. DOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon (mpg). Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The CAFE program, administered by USEPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. USEPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the U.S. DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (EPAAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAAct 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 EPAAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the Act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and CARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report

⁶⁰ (United States Environmental Protection Agency 2017), (United States Environmental Protection Agency 2018)

are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT.⁶¹ Further, a performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 EAP II, CEC, and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels (SAF) Plan in partnership with CARB and consultation with other State, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing significant degradation of public health and environmental quality.

Executive Order S-06-06

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the State to meet a target for use of biomass electricity. The Bioenergy Action Plans developed by the CEC to identify those barriers and recommend actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan provides a detailed action plan to achieve the following goals:

- increase environmentally- and economically-sustainable energy production from organic waste;
- encourage the development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- create jobs and stimulate economic development, especially in rural regions of the state; and

⁶¹ (California Air Resources Board 2003)

- reduce fire danger, improve air and water quality, and reduce waste.

In 2019, 2.87 percent of the total electrical system power in California was derived from biomass (CEC 2020).

Assembly Bill 32: Climate Change Scoping Plan and Update

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

CARB approved the initial Scoping Plan on December 11, 2008; the Plan is updated every five years. CARB approved the first update of the Scoping Plan on May 22, 2014; the updated Plan looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals (ARB 2014). The most recent update is the 2017 Climate Change Scoping Plan, which CARB released in November 2017. The measures identified in the 2017 Climate Change Scoping Plan have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires a battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016.⁶²

Senate Bill 350: Clean Energy and Pollution Prevention Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires a doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 32 and Assembly Bill 197 of 2016

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from the year 2020 to the year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State's

⁶² (California Air Resources Board 2016)

ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs CARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target. Achievement of these goals will have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Senate Bill SB 100

SB 100 The 100 Percent Clean Energy Act of 2018, which sets a State policy that eligible renewable energy and zero-carbon resources supply 100 percent (%) of all retail sales of electricity in California by 2045.

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Governor Brown signed EO B-48-18 which required all State entities to work with the private sector to put at least 5 million zero-emission vehicles on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 zero-emissions chargers by 2025. In addition, State entities are also required to continue to partner with local and regional governments to streamline the installation of zero-emission vehicle infrastructure. Additionally, all State entities are to support and recommend policies and actions to expand infrastructure in homes, through the Low-Carbon Fuel Standard.

Executive Order B-55-18

Establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Senate Bill 375

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

Senate Bill 1078: California Renewables Portfolio Standard Program

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

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Governor Brown signed EO B-48-18 which required all State entities to work with the private sector to put at least 5 million zero-emission vehicles on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 zero-emissions chargers by 2025. In addition, State entities are also required to continue to partner with local and regional governments to streamline the installation of zero-emission vehicle infrastructure. Additionally, all State entities are to support and recommend policies and actions to expand infrastructure in homes, through the Low-Carbon Fuel Standard.

Executive Order B-55-18

Establishes a new statewide goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

California Building Code

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

Green Building Standards

In essence, green building standards are indistinguishable from any other building standards, are contained in the CBC, and regulate the construction of new buildings and improvements. Whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include electric vehicle (EV)-capable parking spaces which have electrical panel capacity and conduit to accommodate the future installation. In addition, the 2019 Standards also required the installation of solar photovoltaic (PV) systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades.⁶³

The recently updated 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure’s loads. These new solar requirements will become effective on January 1, 2023 and contribute to California’s goal of reaching a net-zero carbon footprint by 2045.⁶⁴

Local

Fresno County Regional Transportation Plan

FCOG’s 2022 RTP comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2040. FCOG’s first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-

⁶³ (California Energy Commission 2018)

⁶⁴ (California Energy Commission 2022)

range transportation plans extend at least 20 years into the future. As the federally designated MPO and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region's 15 cities, the County of Fresno, staff from related local public agencies, the SJVAPCD, Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, and each element is augmented by additional documentation. The RTP also contains a chapter that establishes the SCS to show how integrated land use and transportation planning can lead to more efficient use of autos and light trucks, as well as improve the overall quality of life in the region.

Fowler Housing Element

The California Housing Element law requires every jurisdiction to prepare and adopt a housing element as part of its general plan. It is typical for each city or county to prepare and adopt its own separate housing element. However, Fresno County and 12 of the 15 cities in the County, including Fowler, with the help of the Fresno Council of Governments, prepared a Multi-Jurisdictional Housing Element (MJHE) for the 5th Cycle of housing element updates (2015-2023). The MJHE provides an opportunity for countywide housing issues to be effectively addressed at the regional level and also provides the opportunity for local governments to accommodate the Regional Housing Needs Allocation assigned to the Fresno County region. The 6th Cycle Fresno Multi-Jurisdictional Housing Element is currently being prepared. Certification is required by December 31, 2023.

Policies from the 5th Cycle MJHE would remain in effect for the Fowler 2040 GP. The applicable policies are listed below:

Policies

- Policy 6.1:** Encourage the use of energy conserving techniques in the siting and design of new housing.
- Policy 6.2:** Actively implement and enforce all State energy conservation requirements for new residential construction.
- Policy 6.3:** Promote public awareness of the need for energy conservation

4.7.3 Methodology and Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to energy. The Fowler 2040 GP would have a significant impact if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- Conflict or obstruct a state or local plan for renewable energy or energy efficiency.

CEQA Guidelines Appendix F requires environmental analyses to include a discussion of potential energy impacts associated with a proposed project. Where necessary, CEQA requires that mitigation measures be incorporated to reduce the inefficient, wasteful, or unnecessary consumption of energy. The Guidelines, however, do not define "inefficient, wasteful, or unnecessary consumption." Compliance with the State's building standards for energy efficiency would result in decreased energy consumption for proposed buildings. However, compliance with building codes may not adequately address all potential energy impacts associated with project construction and operation. As a result, this analysis includes an evaluation of electricity and natural gas usage requirements associated with future development, as well as energy requirements associated with the use of on-road and off-road vehicles. The degree to which the proposed

project would comply with existing energy standards, as well as applicable regulatory requirements and policies related to energy conservation was also taken into consideration for the evaluation of project-related energy impacts.

Methodology

Energy consumption is categorized in terms of “operational” and “construction” energy. Operational energy accounts for energy consumed mobile source and land use scenario envisioned under the 2040 Fowler GP, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. Construction energy is the energy needed for construction and maintenance of the transportation system and land use scenario facilitated by the Fowler 2040 GP. The analysis of operational energy involves the quantification of anticipated transportation fuel, natural gas, and electricity consumption under the Fowler 2040 GP and a qualitative discussion of the efficiency, necessity, and wastefulness of the energy consumption. Analysis of construction energy involves a qualitative discussion of construction and maintenance energy requirements anticipated under buildout of the Fowler 2040 GP.

Construction

Development facilitated by the Fowler 2040 GP would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Much of this information for specific future development projects is unknown at this time and, accordingly, construction-related impacts are qualitatively discussed.

Operations

The long-term operation of the proposed Fowler 2040 GP would require electricity usage for lighting, space and water heating, appliances, water conveyance, and landscaping maintenance equipment. Indirect energy use would include wastewater treatment and solid waste removal.

Projections for the Fowler 2040 GP transportation fuel were calculated based on the VMT Impact Assessment conducted by Kittelson & Associates and CARB’s Emission Factors 2021 (EMFAC2021) database, including the assumption that full buildout of the Fowler 2040 GP would occur by 2042 to align with the Fresno COG transportation model horizon. For natural gas and electricity consumption under buildout of the land use scenario envisioned by the Fowler 2040 GP, consumption factors were drawn from the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod data is provided in [Appendix C](#).

4.7.4 Impacts

Threshold 1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. Implementation of the proposed Project would increase electricity, diesel, gasoline, and natural gas consumption associated with construction activities, as well as long-term operational activities. The increases in energy consumption associated with short-term construction and long-term operational activities would be efficiently used after implementation of the General Plan Policies as outlined below.

Construction-Related Energy Consumption

Energy consumption would occur during construction of the uses designated by Fowler 2040 GP, including fuel use associated with the on-site operation of off-road equipment and vehicles traveling to and from construction sites. The CBC includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by the 2040 Fowler GP and would minimize wasteful, inefficient, and unnecessary energy consumption. Construction and operation of projects facilitated by the Fowler 2040 GP would be required to comply with relevant provisions of CBC and Title 24 of the California Energy Code, which would avoid wasteful, inefficient, and unnecessary energy consumption. As a result, the construction of proposed facilities and improvements would not result in an inefficient, wasteful, or unnecessary consumption of energy.

Operational Mobile-Source Energy Consumption

Operational mobile-source energy consumption would be primarily associated with vehicle trips. Energy use associated with commute trips are discussed in greater detail, as follows:

Table 4-16 summarizes the annual fuel use within the Fowler planning area for existing (year 2019) and future year 2042 conditions. As noted in **Table 4-16**, the vehicle trips associated with existing year 2019 conditions would consume an annual estimated 1,451,044 gallons of diesel and 3,689,421 gallons of gasoline, which combined equates to 643,132 million British thermal units (MMBTU). With a service population (SP) of 6,808, existing year 2019 conditions would consume 94.5 MMBTU/capita. With the proposed buildout of the Fowler 2040 GP, annual fuel consumption would increase to 5,885,630 gallons of diesel and 11,338,136 gallons of gasoline, which are equivalent to 2,172,393 MMBTU. With a projected population of 48,404, buildout conditions would consume 44.9 MMBTU/capita. While the overall fuel consumption would increase with the adoption of the proposed Fowler 2040 GP the efficiency of the fuel usage would improve significantly. The development of increasingly efficient automobile engines would further increase energy efficiency and energy conservation.

Operational Building-Use Energy Consumption

Implementation of the Fowler 2040 GP would result in increased electricity and natural gas consumption associated with the long-term operation of the proposed land uses. It is important to note that buildings included in the Fowler 2040 GP would be required to comply with Title 24 standards for energy efficiency, which would include increased building insulation and energy-efficiency requirements, including the use of energy-efficient lighting, energy-efficient appliances, and use of low-flow water fixtures.

Estimated electricity consumption associated with existing year 2019 conditions and the proposed build-out of the proposed Fowler 2040 GP are summarized in Table 2. As depicted, under 2019 conditions the calculated total consumption was approximately 52,309,627 kilowatt hours per year (kWh/Year) of electricity, 7,296,595 kWh/Year for water use, treatment, and conveyance, and 213,620,578 kilo British thermal units per year (kBtu /Yr) of natural gas. In total, facilities under existing 2019 conditions use a total of approximately 416,997 MMBtu/year. Under the build-out of the proposed Fowler 2040 GP, consumption would total approximately 336,659,330 kWh/Yr of electricity, 26,572,392 kWh/Year.

Table 4-16: Operational Fuel Consumption

Source	Annual Fuel Use (gallons)	Annual MMBTU
Existing Conditions (Year 2019)		
On-Road Vehicles (Diesel)	1,451,044	199,346
On-Road Vehicles (Gasoline)	3,689,421	443,786
	Total:	643,132
	Estimated Population:	6,808
	MMBtu /Capita	94.5

GP Buildout Conditions (Year 2042)		
On-Road Vehicles (Diesel)	5,885,630	808,574
On-Road Vehicles (Gasoline)	11,338,136	1,363,819
	Total:	2,172,393
	Estimated Population:	48,404
	MMBtu /Capita	44.9
<i>MMBTU = Million British thermal units</i>		
<i>Fuel use was calculated based, in part, on project trip generation rates derived from the traffic analysis prepared for this project (Kittelson & Associates 2022).</i>		
<i>Refer to Appendix A for modeling assumptions and results.</i>		

Table 4-17: Operational Electricity & Natural Gas Consumption

Source	Energy Use	MMBTU/Year
Existing Conditions (Year 2019)		
Electricity Consumption	52,309,627 kWh/year	178,480
Water Use, Treatment & Conveyance	7,296,595 kWh/Year	24,896
Natural Gas Use	213,620,578 kBtu/Year	213,621
	Total:	416,997
	Estimated Population:	6,808
	MMBtu /Capita:	61.3
GP Buildout Conditions (Year 2042)		
Electricity Consumption	336,659,330 kWh/year	1,148,682
Water Use, Treatment & Conveyance	26,572,392 kWh/Year	90,665
Natural Gas Use	862,651,820 kBtu/Year	862,652
	Total:	2,101,998
	Estimated Population:	48,404
	MMBtu /Capita:	43.4
<i>MMBTU = Million British thermal units</i>		
<i>Fuel use was calculated based, in part, on default construction schedules, equipment use, and vehicle trips identified for the operation of similar land uses contained in the CalEEMod output files prepared for the air quality analysis conducted for this project. Refer to Appendix A for modeling assumptions and results.</i>		

for water use, treatment, and conveyance, and 862,651,820 kilo British thermal units per year (kBTU/Yr) of natural gas. In total, facilities under buildout conditions would consume a total of approximately 2,101,998 MMBTU/year.

On a per capita basis, total consumption rates would total approximately 61.3 MMBTU/capita under existing conditions and approximately 43.4 MMBTU/capita under Fowler 2040 GP buildout conditions. Based on the modeling conducted, per capita energy usage under the proposed Fowler 2040 GP would improve in comparison to existing year 2019 conditions. However, at this time, most projects incorporated in the GP do not have sufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts on energy consumption.

The following Fowler 2040 GP policies and action items reduce the energy consumption of new residential developments and promote the use of alternative means of transportation. These policies can promote the reduction of energy and fuel consumption. Accordingly, non-residential projects that are not otherwise exempt from review under CEQA will be subject to analysis and potential project-specific mitigation related to energy use.

Policy LU-21

Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.

Policy CH-6	Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board’s (CARB’s) Land Use Compatibility Handbook.
Policy MOB-4	Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.
Policy MOB-9	New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
Policy MOB-10	Develop a multi-purpose recreational bikeway network and support facilities.
Policy MOB-11	Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
Policy MOB-12	Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
Policy MOB-13	Coordinate with Caltrans, Fresno COG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
Policy MOB-14	Identify opportunities for a multi-modal transit hub within the City.
Policy MOB-15	Support the development of paratransit service programs.
Policy MOB-16	Support transit operator efforts to maximize return for short- and long-range transit needs.
Policy MOB-17	Incorporate the potential for public transit service expansion throughout the City.
Policy MOB-18	Improve route options and access for public transit City-wide, specifically west of SR 99.

Threshold 2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. Subsequent projects developed pursuant to the Fowler 2040 GP would be required to be in full compliance with the CBC, including applicable Green Building Standards and Building Energy Efficiency Standards. Additionally, starting in 2023, all new homes constructed in California—as well as many non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, and grocery stores—would be required to include solar photovoltaic systems consistent with the 2022 Building Energy Efficiency Standards. In addition to complying with federal and State regulations, the Fowler 2040 GP itself provides policies that are designed specifically to reduce energy consumption or to reduce other types of pollutants that have the co-benefit of reducing energy consumption. Through mandatory compliance with all federal, State, and local policies and requirements for energy consumption, implementation of the Fowler 2040 GP would not be anticipated to conflict with or obstruct State or local plans for renewable energy or energy efficiency.

4.7.5 Mitigation Measures

Mitigation measures are not required.

4.7.6 Cumulative Impacts

Buildout of the 2040 Fowler GP would result in the construction and operation of new development, which would result in increased area, mobile, and energy-related air emissions. As individual development projects are proposed, each project would be required to be analyzed against thresholds of significance. However, as policies and regulations are established that would require the further reduction of energy

consumption, which future projects would be required to comply with, impacts would be less than significant.

4.8 Geology and Soils

This section evaluates impacts to geology and soils, including those related to seismic hazards and geologic conditions, underlying soil characteristics and erosion, and paleontological resources, that could result from implementation of the Fowler 2040 GP.

4.8.1 Environmental Baseline

Geology and Soils

Fowler is in the southern section of California’s Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Central Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium.⁶⁵ The Valley’s geology makes for incredible fertility, but it also means the area is threatened by concerns like subsidence, which is discussed in more detail below.

According to the California Expansive Soils Map, Fowler is not located in an area affected by expansive soils. Expansive soils are those with excessive swelling clay minerals such as montmorillonite, which can cause excessive swelling when the soil comes into contact with water and also shrinkage when it undergoes drying. Soils within the planning area contain little to no swelling clay.⁶⁶ Soil types within Fowler’s planning area can be found in [Table 4-18](#) and [Figure 4-7](#).

Table 4-18. Soils with Fowler’s Planning Area

Map Unit Symbol	Map Unit Name	Acres in Planning Area	Percent of Planning Area	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
CfB	Calhi loamy sand, 3 to 9 percent slopes	8.8	0.2%	No	Yes	Somewhat excessively drained	Rapid	Low
CgA	Calhi loamy sand, moderately deep, 0 to 3 percent slopes	0.9	0.02%	No	No	Somewhat excessively drained	Rapid	Very Low
DeA	Delhi sand, 0 to 3 percent slopes, MLRA 17	178.7	3.1%	No	Yes	Somewhat excessively drained	Rapid	Negligible
DhA	Delhi loamy sand, 0 to 3 percent slopes, MLRA 17	731.4	12.9%	No	Yes	Somewhat excessively drained	Rapid	Very Low
DhB	Delhi loamy sand, 3 to 9 percent slopes	81.3	1.4%	No	No	Somewhat excessively drained	Rapid	Low
DIA	Delhi loamy sand, moderately deep, 0 to 3 percent slopes	6.4	0.1%	No	No	Somewhat excessively drained	Rapid	Very Low

⁶⁵ (Harden 2004)

⁶⁶ (CSE Landscape Architect 2016)

Map Unit Symbol	Map Unit Name	Acres in Planning Area	Percent of Planning Area	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
Dm	Dello loamy sand	47.1	0.8%	Yes	Yes	Somewhat poorly drained	Rapid	Very Low
Es	Exeter sandy loam	15.7	0.3%	No	Yes	Well drained	Moderately slow to very slow	Medium
Ex	Exeter loam	66.6	1.2%	No	Yes	Well drained	Moderately slow to very slow	Medium
Hc	Hanford sandy loam	1,190	20.9%	No	No	Well drained	Moderately rapid	Very Low
Hg	Hanford sandy loam, silty substratum	25.7	0.5%	No	No	Well drained	Moderately rapid	Very Low
Hm	Hanford fine sandy loam	417.1	7.3%	No	Yes	Well drained	Moderately rapid	Very Low
Ho	Hanford fine sandy loam, silty substratum	47.4	0.8%	No	No	Well drained	Moderately rapid	Very Low
Hsd	Hesperia sandy loam, very deep	1,107.60	19.5%	No	No	Well drained	Moderately rapid	Negligible
Hsm	Hesperia sandy loam, deep	13.4	0.2%	No	Yes	Well drained	Moderately rapid	Negligible
Hsr	Hesperia fine sandy loam, very deep	1,417.20	24.9%	No	No	Well drained	Moderately rapid	Negligible
Hss	Hesperia fine sandy loam, very deep, saline-sodic	5.7	0.1%	No	No	Well drained	Moderately rapid	Low
Hst	Hesperia fine sandy loam, deep	246.7	4.3%	No	No	Well drained	Moderately rapid	Negligible
Pk	Pits	8.5	0.1%	No	Yes	N/A	N/A	N/A
PmB	Pollasky sandy loam, 2 to 9 percent slopes	35.3	0.6%	No	No	Well drained	Moderate to slow	Medium
RkB	Rocklin sandy loam, 3 to 9 percent slopes	4.7	0.08%	No	Yes	Well drained	Moderate to very slow	High
TzbA	Tujunga loamy sand, 0 to 3 percent slopes	34.4	0.6%	No	Yes	Somewhat excessively drained	Very rapid	Very low
Totals		5690.6	100%					

Faults and Seismicity

Fowler is not located within an Alquist-Priolo Earthquake Fault Zone.⁶⁷ The nearest major fault is the San Andreas Fault, located approximately 65 miles southwest of the planning area. The Nunez Fault is approximately 51 miles southwest and the Poso Fault is approximately 51 miles south of the planning area. There are two pre-Quaternary faults near to Fowler: the Clovis Fault and another pre-Quaternary fault which extends to the south of Dinuba. Pre-Quaternary faults are those with an estimated age of over 1,600,000 years. Neither of these faults are believed to be active.

⁶⁷ (California Department of Conservation 2022)

Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated granular and non-plastic, fine-grained soils lose their structure or strength when subjected to high-intensity ground shaking. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables, and buildings with shallow foundations. Liquefaction more commonly occurs in loose, saturated materials. The potential for liquefaction is dependent on soil types and density, the groundwater table, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in Fresno County, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. However, soil types along the San Joaquin Valley floor are not conducive to liquefaction because they are generally too coarse. According to the California State Geoportal, Fowler is not located in or near a zone that has been designated as an area that has experienced soil liquefaction.⁶⁸ Furthermore, the average depth to groundwater within the planning area is approximately 85 to 95 feet, which also minimizes liquefaction potential.⁶⁹

Subsidence

Subsidence occurs when subsurface pressure is reduced by the withdrawal of fluids (e.g., groundwater, natural gas, oil) resulting in sinking of the ground. According to the United States Geological Survey, Fowler is not located in or near a zone that is designated as land that has experienced soil subsidence.⁷⁰ Fowler lies within the jurisdiction of the South Kings Groundwater Sustainability Agency (SKGSA) which is minimally affected by subsidence. Most significant subsidence in the San Joaquin Valley is located in areas underlain by the Corcoran Clay, but the Corcoran Clay does not extend into the SKGSA. Although some areas in Fresno County have experienced subsidence due to groundwater overdraft, subsidence has not occurred within Fowler.

Landslides

Landslides usually occur in locations with steep slopes and unstable soils. Fowler is located on the Central Valley floor where no major geologic landforms exist, and the topography is essentially flat and level. The nearest foothills are approximately 15 miles northeast of Fowler. Therefore, Fowler has minimal-to-no landslide susceptibility.

4.8.2 Regulatory Setting

Federal

Earthquake Hazards Reduction Act

Congress passed the Earthquake Hazards Reduction Act in 1977 to reduce risks to life and property from future earthquakes in the United States through establishment and maintenance the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act of 2002 codifies the generally accepted practice of limited vertebrate fossil collection and limited collection of other rare and scientifically significant fossils by qualified researchers. Researchers must obtain a permit from the appropriate State or federal agency and

⁶⁸ (California State Geoportal 2022)

⁶⁹ (City of Fowler 2021)

⁷⁰ (United States Geological Survey Areas of Land Subsidence in California 2022).

agree to donate any materials recovered to recognized public institutions, where they would remain accessible to the public and other researchers.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) provides the legal basis for state, tribal, and local governments to undertake risk-based approaches to reducing natural hazard risks through mitigation planning. Specifically, the Stafford Act requires state, tribal, and local governments to develop and adopt FEMA-approved hazard mitigation plans as a condition for receiving certain types of non-emergency disaster assistance. The Stafford Act also authorizes grants for pre- and post-disaster projects and planning.

State

General Plan Safety Element

Government Code Section 65302(g)(1) requires every city and county to develop and maintain a safety element as part of its general plan. The safety element is required to, among other things, address potential effects resulting from seismic hazards and must include mapping of known seismic and other geologic hazards along with policies addressing:

- Evacuation routes;
- Military installations;
- Peak load water supply requirements; and
- Minimum road widths and clearing around structures for emergency vehicle access.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into law in 1972 (CCR Title 14, Section 3600, et seq.). The purpose of this Act is to prohibit the location of most structures for human occupancy across the traces of active faults and to thereby mitigate the hazard of fault rupture. Under the Act the State Geologist is required to delineate “Earthquake Fault Zones” along known active faults in California (CCR Title 14, Section 3601). Towns, cities, and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting (CCR Title 14, Section 3603).

Seismic Hazards Mapping Act

The California Geological Survey (CGS), formerly the California Department of Conservation, Division of Mines and Geology (CDMG), provides guidance with regard to seismic hazards. Under CDMG’s Seismic Hazards Mapping Act (1990), seismic hazard zones are to be identified and mapped to assist local governments in land use planning (PRC Section 2690, et seq.). The intent of these maps is to protect the public from the impacts of strong ground shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. In addition, CDMG’s Special Publications 117, “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” provides guidance for the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations.

California Building Code

California law provides a minimum standard for building design through the CBC (CCR Title 24). Chapter 16 of the CBC contains definitions of seismic sources and building standards to address seismic risks. The CBC requires addressing soil-related hazards, such as treating hazardous soil conditions involving removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the CBC requires structural reinforcement of foundations to resist the forces of expansive soils. Chapter 23 of the CBC contains specific requirements for seismic safety. Chapter 29 regulates excavation, foundations, and

retaining walls. Chapter 33 of the CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 70 of the CBC regulates grading activities, including drainage and erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Division of Occupational Safety and Health (Cal/OSHA) regulations (CCR Title 8).

National Pollutant Discharge Elimination System Permit Program

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) to control water pollution by regulating point sources that discharge pollutants into Waters of the United States. In California, the USEPA has authorized the State Water Resources Control Board (SWRCB) as the permitting authority to implement the NPDES program. The SWRCB issues two-baseline general permits; one for industrial operations, the other for construction activities, NPDES General Permit for Stormwater Discharges associated with Construction and Land Disturbance Activities (Construction General Permit (CGP) Order No. 2012-0006-DWQ)⁷¹. Additionally, the NPDES program includes the regulation of stormwater discharges from cities, counties, and other municipalities under Order No. R8-2009-0030 (waste discharge requirements for stormwater) and updated under Order No. 5-01-048 for the Central Valley Region.

Under the CGP, stormwater discharges from construction sites with a disturbed area of one acre or more are required to obtain either individual NPDES permits for stormwater discharges or be covered by the CGP. Coverage under the CGP is accomplished by completing and filing a Notice of Intent with the SWRCB. Each Applicant under the CGP is required to both prepare a Stormwater Pollution Prevention Program (SWPPP) prior to the commencement of grading activities and to ensure implementation of the SWPPP during construction activities. The primary objective of the SWPPP is to identify, construct, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction activities. BMPs may include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution. The SWPPP would also address BMPs developed specifically to reduce pollutants in stormwater discharges following the completion of construction activities.

Local

Fresno County Multi-Hazard Mitigation Plan

The Fresno County Multi-Hazard Mitigation Plan was originally developed in 2007-2008 and FEMA approved in 2009. The plan was comprehensively updated in 2017-2018. The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Fresno County and the other participating jurisdictions developed this multi-hazard mitigation plan to make the County and its residents less vulnerable to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Fresno County would be eligible for the (FEMA Hazard Mitigation Assistance Grants, including Pre-Disaster Mitigation and Hazard Mitigation Grant programs as well as lower flood insurance premiums (in jurisdictions that participate in the National Flood Insurance Program's Community Rating System).

4.8.3 Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to geology and soils. The Fowler 2040 GP would have a significant impact if it would:

⁷¹ (State Water Resources Control Board n.d.)

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction;
 - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.8.4 Impacts

Threshold 1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant Impact. According to the California Earthquake Hazards Zone Application prepared by the California Department of Conservation in 2021, Fowler is not located within a Fault-Rupture Hazard Area.⁷² Additionally, no active faults have been identified within Fowler. The nearest zoned faults to Fowler are a portion of the Nunez Fault, located approximately 51 miles southwest and the Poso Fault, approximately 51 miles south of Fowler. Therefore, because no active faults occur within Fowler, implementation of the Fowler 2040 GP would not expose people or structures related to fault rupture. The Fowler 2040 GP would encourage infill development, which would in some cases may result in the replacement or retrofit of older buildings with newer structures built to current seismic standards that could better withstand the adverse effects of strong ground shaking. Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with CBC engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction in accordance with CBC requirements. Impacts would be less than significant.

Threshold 2: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less than Significant Impact. Similar to most areas within California, Fowler would be exposed to ground shaking from seismic events on local and regional faults. However, the Fowler area has historically experienced a low to moderate degree of seismicity. The most recent significant earthquake to affect

⁷² (California Department of Conservation 2022)

the Fowler area was in 1973. This earthquake occurred approximately 30 miles away at a magnitude 4.1.⁷³ In addition, in 2019 a magnitude 7.1 event occurred in Ridgecrest, located in northeast Kern County east of the Sierra Nevada, but no significant damage was reported in the Fowler. The fault that ruptured in Ridgecrest was a conjugate fault system that did not include the Nunez, Poso, or San Andreas Fault. Although Fowler is in an area with historically low to moderate level of seismicity, strong ground shaking could occur within Fowler during seismic events and occurrences have the possibility to result in significant impacts. Major seismic activity along the nearby Nunez, Poso, San Andreas faults, or other associated faults, could affect Fowler through strong seismic ground shaking, which could potentially cause structural damage to facilities and interruption of service. Projects in Fowler would be designed to withstand strong ground shaking, because all built projects are required to comply with the CBC and other applicable regulations to minimize the potential effects seismic activity. Further, with implementation of the Fowler 2040 GP policies SAF-26, SAF-27, and SAF-28 and action item SAF-27a, risks associated with strong seismic ground shaking would be minimized.

Policy SAF-26	Regularly review and enforce all seismic and geologic safety standards and require the use of best practices in site design and building construction methods.
Policy SAF-27	Promote the upgrading, retrofitting, and/or relocation of all existing critical facilities and other important public facilities that do not meet current building code standards and are susceptible to seismic or geologic hazards.
Action Item SAF-27a	Evaluate critical facilities for risk from seismic and geologic hazards. Prioritize improvements based on level of expected risk.
Policy SAF-28	Continue to use building codes as the primary tool for reducing seismic risk in structures.

Compliance with regulations such as the CBC and implementation of the Fowler 2040 GP policies and action item listed above would ensure that potential impacts related to seismic ground shaking are less than significant.

Threshold 3: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less than Significant Impact. Although no specific liquefaction hazard areas have been identified in Fowler, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. However, soil types along the Valley floor, which includes Fowler, are not conducive to liquefaction because they are generally too coarse, and the water table is relatively deep. Even though potential for liquefaction is low, all future development would be subject to be in compliance with CBC engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction. Further, with implementation of policies SAF-26, SAF-27, and SAF-28, as outlined under Threshold 1 above, risks associated with liquefaction would be minimized.

⁷³ (Home Facts 2022, United States Environmental Protection Agency 2018)

Threshold 4: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

No Impact. The planning area is located on the Valley floor where no major geologic landforms exist, and the topography is essentially flat and level, which precludes the possibility of earthquake-induced landslides. The nearest foothills are approximately 15 miles northeast of Fowler. Therefore, Fowler has minimal-to-no landslide susceptibility or opportunity for slope failure. There would be no impact.

Threshold 5: Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Development associated with the Fowler 2040 GP may include earthwork activities that could expose soils to the effects of erosion or loss of topsoil. Once disturbed, soils, if not managed appropriately, are left exposed to the effects of wind and water. Though specific developments are not being proposed under the Fowler 2040 GP, future development will be facilitated within the planning area. As a result, excavation, grading, construction activities, and site preparation for future development may result in the removal of topsoil or disturbance and potential exposure of underlying soils to wind and water erosion. Poorly-designed projects may also potentially destabilize buildings or roadway foundations due to long-term soil erosion and loss of underlying supporting soils. Future development may also include paving and other site improvements that could increase amounts of impervious surfaces and result in higher levels of urban runoff. Generally, construction activities, including earthwork or other ground disturbing activities, on site of one acre or more are subject to the NPDES CGP. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify and implement erosion controls, where necessary.

All individuals undertaking ground disturbing activities must take steps to prevent discharge of pollutants and regulate erosion. The FMC requires adherence to the CBC, which regulates grading activities, including drainage and erosion control. In conjunction with obtaining coverage under the CGP, the City may require an erosion and sediment control plan for projects subject to a grading permit which would reduce the potential for erosion through the implementation of BMPs or Low Impact Development practices. Once construction is complete and exposed areas are revegetated or covered by buildings, asphalt, or concrete, the erosion hazard would be substantially reduced or essentially eliminated.

Compliance with the CBC and implementation of the BMPs under the NPDES would ensure that potential soil erosion impacts, or the potential loss of topsoil, would be less than significant.

Threshold 6: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. As future development and infrastructure projects are considered by Fowler, each project will be evaluated for conformance with the CBC, the General Plan, Zoning Ordinance, and other regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Depending on the site, future development and improvement projects may be required to prepare site-specific geotechnical studies to identify geologic and soil conditions specific to the site and provide design recommendations consistent with the requirements of State and City codes. In addition, the Fowler 2040 GP includes policies and action items to address geologic conditions. With the implementation of

applicable State and City codes and Policy SAF-26 and Policy SAF-27, potential impacts associated with unstable geologic conditions with the potential to result in landslide, lateral spreading, subsidence, liquefaction or collapse would be less than significant.

Threshold 7: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact. As discussed in [Section 4.8.1 Environmental Baseline](#), Fowler is not located in an area affected by expansive soils. Soils within the planning area contain little to no swelling clay. Soil sampling and treatment procedures for expansive soils, as well as other soil-related issues, are addressed by the CBC. Compliance with the CBC would create conditions suitable for construction. Since Fowler is not located in an area affected by expansive soils, there would be no impact.

Threshold 8: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Although septic tanks currently exist within the planning area and would be permitted for areas under the jurisdiction of the County of Fresno, no new septic tanks would be allowed in association with development approved by the City of Fowler pursuant to the Fowler 2040 GP. New development would be required to connect to the wastewater system, as maintained by City and the Selma-Kingsburg-Fowler County Sanitation District (SKFCSD). Therefore, there would be no impact related to the addition septic systems in areas with soils incapable of adequately supporting the use of such tanks.

Threshold 9: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Less than Significant Impact. Excavation and/or construction activities within the planning area have the potential to impact paleontological/geological resources during excavation and construction activities within previously undisturbed soils. Although many areas have been previously disturbed by farming activities or structural development, future development may require excavations or construction within previously undisturbed soils. Compliance with policy CDES-12, which can be found in [Section 4.6](#), would ensure that impacts are less than significant.

4.8.5 Mitigation Measures

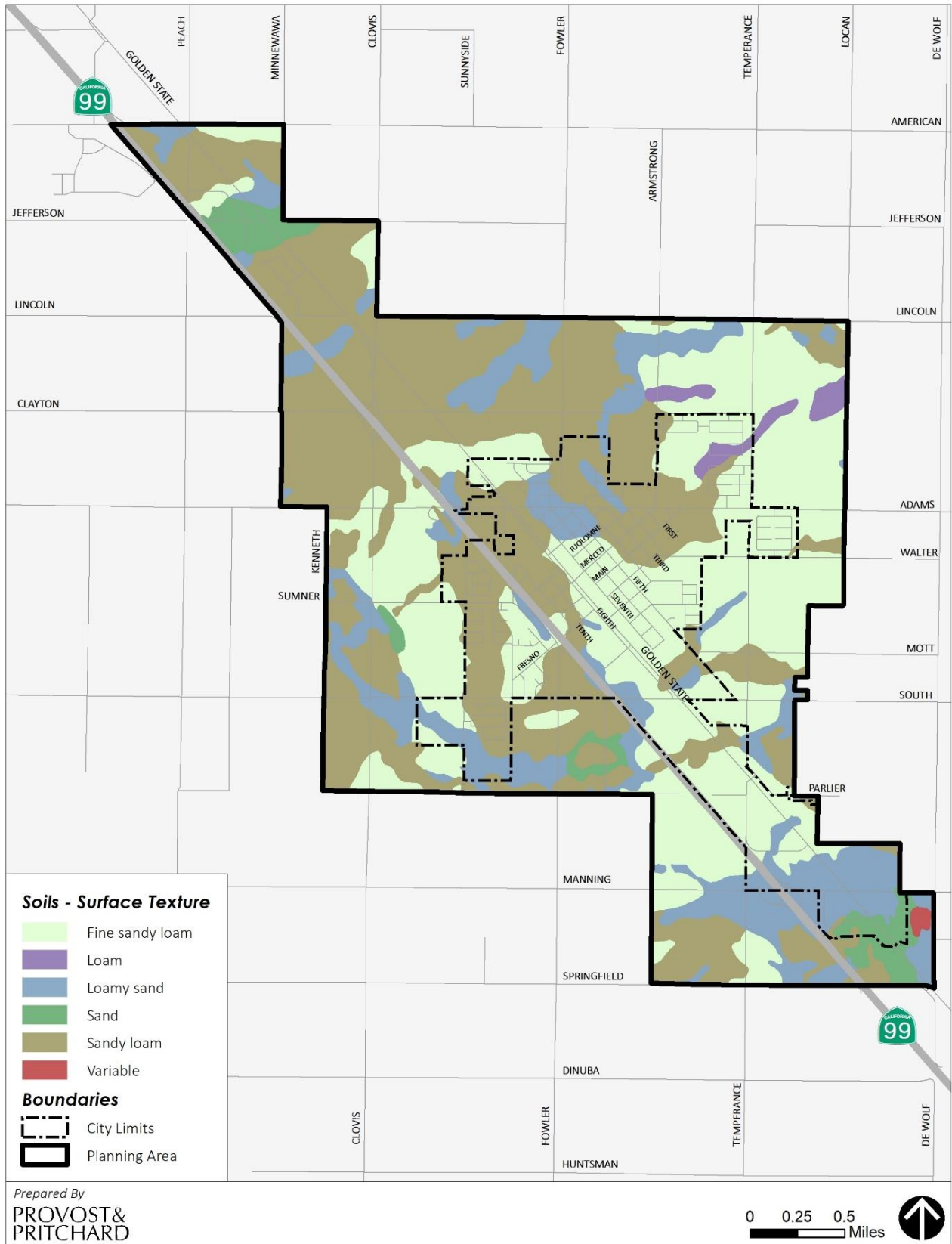
Mitigation measures are not required.

4.8.6 Cumulative Impacts

Cumulative development in the planning area and areas of Fresno County surrounding Fowler would gradually increase population which would result in the gradual increase in the number of people exposed to potential geologic hazards, including effects associated with seismic events such as ground rupture and strong shaking. Potential geologic and seismic hazards are project-level impacts and are not cumulative in nature. Individual development projects are subject to project-specific review by the City and undergo environmental review when it is determined that the potential for significant impacts exist. In the event that future cumulative development would result in impacts related to geologic or seismic impacts, those potential impacts would be addressed on an individual basis in accordance with the requirements of CEQA. Compliance with the FMC and Fowler 2040 GP goals, policies and action items, as well as other laws and regulations mentioned above, would ensure that project-specific impacts associated with geology and soils would be less than significant. Potential impacts associated with geology and soils would not be

cumulatively considerable, and cumulative impacts related to geologic hazards would be less than significant.

Figure 4-7: Soils Map



4.9 Greenhouse Gas Emissions

This section evaluates impacts from greenhouse gas emissions resulting from implementation of the Fowler 2040 GP.

4.9.1 Environmental Baseline

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

- **Carbon Dioxide.** Carbon dioxide (CO₂) is a colorless, odorless gas. CO₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. Several specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO₂ emissions. The atmospheric lifetime of CO₂ is variable because it is so readily exchanged in the atmosphere.⁷⁴
- **Methane.** Methane (CH₄) is a colorless, odorless gas that is not flammable under most circumstances. CH₄ is the major component of natural gas, about 87 percent by volume. It is also formed and released into the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane into the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane’s atmospheric lifetime is about 12 years.⁷⁵
- **Nitrous Oxide.** Nitrous oxide (N₂O) is a clear, colorless gas with a slightly sweet odor. N₂O is produced by both natural and human-related sources. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N₂O is approximately 114 years.⁷⁶
- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer

⁷⁴ (United States Environmental Protection Agency 2018)

⁷⁵ Ibid.

⁷⁶ Ibid.

products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 270 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years).⁷⁷

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and non-toxic. There are seven PFC gases: perfluoromethane (CF₄), perfluoroethane (C₂F₆), perfluoropropane (C₃F₈), perfluorobutane (C₄F₁₀), perfluorocyclobutane (C₄F₈), perfluoropentane (C₅F₁₂), and perfluorohexane (C₆F₁₄). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF₄ and C₂F₆ as byproducts. The estimated atmospheric lifetimes for PFCs range from 2,600 to 50,000 years.⁷⁸
- **Nitrogen Trifluoride.** Nitrogen trifluoride (NF₃) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalent (CO₂e). While NF₃ may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF₃ was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (HSC Section 38505).
- **Sulfur Hexafluoride.** Sulfur hexafluoride (SF₆) is an inorganic compound that is colorless, odorless, non-toxic, and generally non-flammable. SF₆ is primarily used as an electrical insulator in high-voltage equipment. The electric power industry uses roughly 80 percent of all SF₆ produced worldwide. Leaks of SF₆ occur from aging equipment and during equipment maintenance and servicing. SF₆ has an atmospheric life of 3,200 years.⁷⁹
- **Black Carbon.** Black carbon is the strongest light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands).⁸⁰

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule. Often, estimates of GHG emissions are presented in CO₂e, which relates each gas by its global warming potential (GWP). Expressing GHG emissions in CO₂e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. **Table 4-19** provides a summary of the GWP for GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Ibid.

indicated, CH₄ traps over 25 times more heat per molecule than CO₂, and N₂O absorbs roughly 298 times more heat per molecule than CO₂. Additional GHGs with high GWP include nitrogen trifluoride, sulfur hexafluoride, perfluorocarbons, and black carbon.

Table 4-19: Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Oxide (N ₂ O)	298
<i>*Based on IPCC GWP values for 100-year time horizon Source: IPCC 2007</i>	

Sources of GHG Emissions

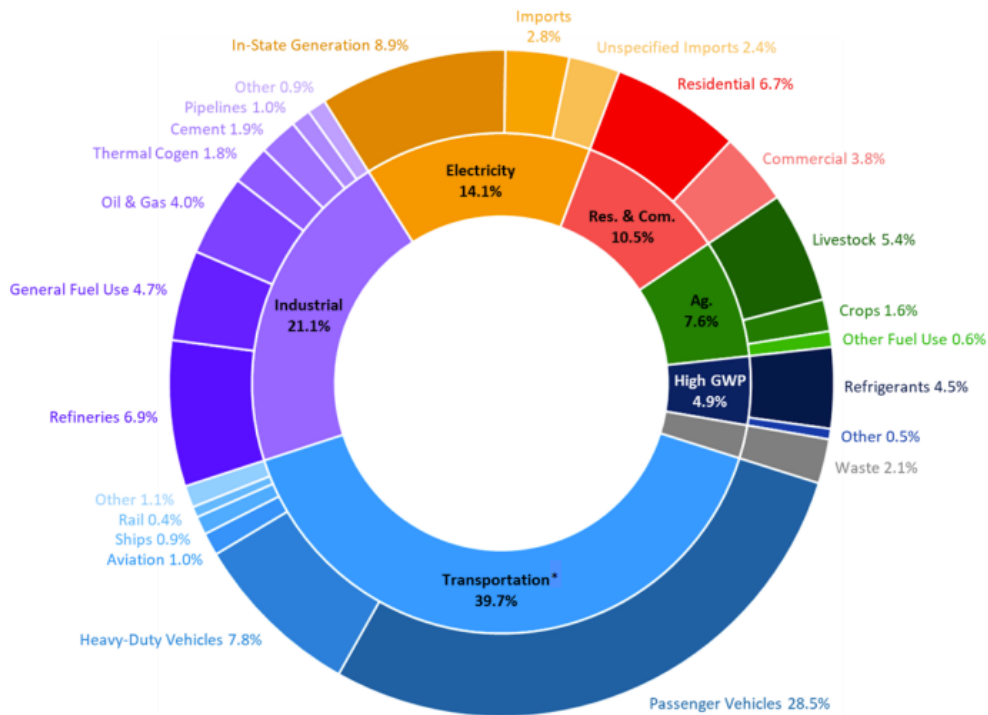
On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. Worldwide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions.⁸¹

In 2019, GHG emissions within California totaled 418.2 million metric tons (MMT) of CO₂e. GHG emissions, by sector, are summarized in **Table 4-20**. Within California, the transportation sector is the largest contributor, accounting for approximately 40 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 21 percent. Electricity generation totaled roughly 14 percent.⁸²

⁸¹ (United States Environmental Protection Agency 2018)

⁸² (California Air Resources Board 2022)

Table 4-20: California GHG Emissions Inventory by Sector



Source: CARB 2022a

Short-Lived Climate Pollutants

Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and CH₄ also have a dramatic effect on climate change. Though short-lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

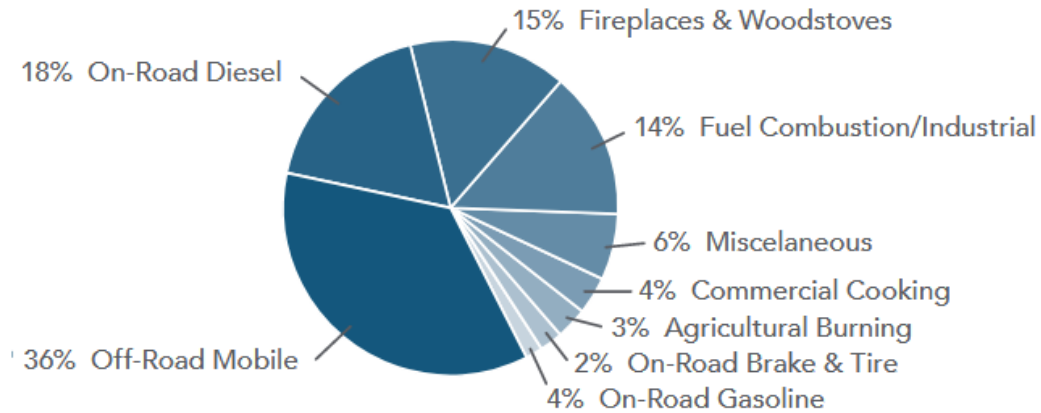
As part of CARB’s efforts to address SLCPs, it has developed a statewide emission inventory for black carbon. The black carbon inventory will help support the implementation of the SLCP Strategy, but it is not part of the State’s GHG Inventory that tracks progress toward the State’s climate targets. The most recent inventory for year 2013 conditions is depicted in [Table 4-21](#). As depicted, off-road mobile sources account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes.⁸³

Effects of Global Climate Change

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

Table 4-21: California Black Carbon Emissions Inventory (Year 2013)

⁸³ (California Air Resources Board 2022)



Source: CARB 2022b

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

4.9.2 Regulatory Setting

Federal

Executive Order 13514

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

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

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten public health and welfare of current and future generations.

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

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

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

The final combined USEPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On August 28, 2012, USEPA and NHTSA issued their joint rule to extend this national program of coordinated GHG and fuel economy standards to model years 2017 through 2025 passenger vehicles.

United States Environmental Protection Agency Strategic Plan

The USEPA's *Fiscal Year (FY) 2022-2026 Strategic Plan (Strategic Plan)* provides a roadmap to achieve USEPA's and the Biden-Harris Administration's environmental priorities over the next four years. The *Strategic Plan* furthers the agency's commitment to protecting human health and the environment for all people, with an emphasis on historically overburdened and underserved communities. For the first time, USEPA's *Strategic Plan* includes a strategic goal focused exclusively on addressing climate change, with three primary objectives: 1) Reduce Emissions that Cause Climate Change; 2) Accelerate Resilience and Adaptation to Climate Change Impacts; and 3) Advance International and Subnational Climate Efforts.

State

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (HSC Sections 42823 and 43018.5) requires CARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply; an increase in air pollution caused by higher temperatures; harm to agriculture; an increase in wildfires; damage to the coastline; and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the CAA, to allow the State to require reduced tailpipe emissions of CO₂. In late 2007, the USEPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the USEPA related to this denial.

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

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

Executive Order No. S-3-05

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

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

Executive Order B-30-15

In 2015, Governor Brown signed Executive Order B-30-15, which establishes a California GHG-reduction target of 40 percent below 1990 levels by 2030.

Executive Order B-55-18

In 2018, Governor Brown signed Executive Order B-55-18, which set a target of statewide carbon neutrality by 2045.

Executive Order No. N-19-19

Executive Order N-19-19 calls for actions from multiple State agencies to reduce GHG emissions and mitigate the impacts of climate change. This includes a direct acknowledgment of the role the transportation sector must play in tackling climate change.

This executive order empowers the California State Transportation Agency (CalSTA) to leverage more than \$5 billion in discretionary State transportation funds to reduce GHG emissions in the transportation sector and adapt to climate change. Accordingly, CalSTA will work to align transportation spending with the State's Climate Change Scoping Plan where feasible; direct investments to strategically support smart growth to increase infill housing production; reduce congestion through strategies that encourage a reduction in driving, and invest further in walking, biking, and transit; and ensure that overall transportation costs for low-income Californians do not increase as a result of these policies.

Executive Order N-79-20

Executive Order N-79-20 calls to accelerate the transition away from fossil fuels by requiring all new cars sold in California to be zero-emission by 2035, all new commercial trucks sold in the state to be zero-emission by 2045 for all operations where feasible, and all new off-road vehicles and equipment sold to be zero-emission by 2035 where feasible. EO N-79-20 reaffirms the state's commitment to implementing EO N-19-19.

Executive Order N-79-20 reiterates the message of EO N-19-19 by highlighting three strategies to expand clean transportation options from the Climate Action Plan for Transportation Infrastructure, while also emphasizing the importance of CAPTI and the urgency of climate change. Executive Order N-79-20 furthers the State's climate goals by explicitly pointing to the critical role of transit, passenger rail, active transportation, Complete Streets, and micro-mobility as tools to expand mobility options, encourage mode shift, and reduce overall VMT.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (HSC Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, NF₃, and SF₆. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

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

Climate Change Scoping Plan

CARB's Climate Change Scoping Plan is the State's plan to achieve GHG reductions in California as initially required by AB 32. This Scoping Plan contains the main strategies to be implemented in order to achieve the State's target GHG-reduction goals. The initial Scoping Plan was first approved by CARB on December 11, 2008 and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. The most recent update released by ARB is the *2017 Climate Change Scoping Plan*, which was released in November 2017. The *2017 Climate Change Scoping Plan* incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and Executive Order B-30-15, while substantially advancing toward the State's goal of achieving an 80 percent reduction below 1990 levels by year 2050. Most notably, the *2017 Climate Change Scoping Plan* encourages zero net increases in GHG emissions. However, the *2017 Climate Change Scoping Plan* recognizes that achieving carbon neutrality increases in GHG emissions may not be feasible or appropriate for all projects and that the inability of a project to mitigate its GHG emissions to zero would not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA. Under the *2017 Climate Change Scoping Plan*, the ARB recommends local plan-level emissions efficiency targets of 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MTCO_{2e} per capita by 2050. The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local

governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

It is important to note that the Scoping Plan is currently being updated. In addition to the State's year 2030 and 2050 GHG-reduction goals, the updated *Draft 2022 Climate Change Scoping Plan* will also address the State's GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18. This *Draft 2022 Climate Change Scoping Plan* is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State's year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State's future year 2050 GHG-reduction goals. The *Draft 2022 Climate Change Scoping Plan* is anticipated to be adopted by the end of 2022.

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

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed CARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this Executive Order in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020. The State's Clean Energy Standards, adopted in 2018, require the state's utilities to generate 100 percent clean electricity by 2045 and to increase the State's RPS requirements to 60 percent by 2030.

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

Mandatory Reporting of GHG Emissions

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

Cap-and-Trade Regulation

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

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

Senate Bill 32

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directed the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target, which has since been incorporated into the *2017 Climate Change Scoping Plan*.

Senate Bill 97

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

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

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

Senate Bill 100

SB 100 was signed by Governor Brown on September 10, 2018. SB 100 sets a goal of phasing out all fossil fuels from the State's electricity sector by 2045. SB 100 increases to 60 percent, from 50 percent, how much of California's electricity portfolio must come from renewables by 2030. It establishes a further goal to have an electric grid that is entirely powered by clean energy by 2045, which could include other carbon-free sources, like nuclear power, that are not renewable.

Senate Bill 375

SB 375 requires MPOs to adopt an SCS or APS that will address land-use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld. In 2018, CARB adopted updated SB 375 targets.

California Building Code

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

Green Building Standards

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

AB 32, which mandated the reduction of GHG emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, CARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, CARB estimated that green building standards would reduce GHG emissions by approximately 26 MMT of CO₂e by 2020.

The 2019 Building Energy Efficiency Standards focused on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The ventilation measures improve indoor air quality, protecting homeowners from air pollution originating from outdoor and indoor sources. Under the newly adopted standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades. The recently updated 2019 Building Energy Efficiency Standards also require new homes three stories or less that are built after January 1, 2020, to be equipped with solar photovoltaic (PV) systems. The solar PV systems are to be sized based on the building's annual electricity demand, the building square footage, and the climate zone within which the home is located. However, under the 2019 Building Energy Efficiency Standards, homes may still rely on other energy sources, such as natural gas. Compliance with the 2019 Building Energy Efficiency Standards, including the solar PV system mandate, residential dwellings will use approximately 50 to 53 percent less energy than those under the 2016 standards. Actual reduction will vary depending on various factors (e.g., building orientation, and sun exposure). Non-residential buildings will use about 30 percent less energy due mainly to lighting upgrades.⁸⁴

The recently updated 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, and further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60

⁸⁴ (California Energy Commission 2018)

percent of the structure's loads. These new solar requirements will become effective on January 1, 2023 and contribute to California's goal of reaching a carbon neutrality footprint by 2045.⁸⁵

Short-Lived Climate Pollutant Reduction Strategy

In March 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy (SLCP Strategy) establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; recovering methane from wastewater treatment facilities, and manure methane at dairies, and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The SLCP Strategy also identifies steps to reduce natural gas leaks from oil and gas wells, pipelines, valves, and pumps to improve safety, avoid energy losses, and reduce methane emissions associated with natural gas use. Lastly, the SLCP Strategy also identifies measures that can reduce HFC emissions at national and international levels, in addition to State-level action that includes an incentive program to encourage the use of low-GWP refrigerants, and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment.⁸⁶

Advanced Clean Cars II

In August 2022, CARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% zero emission and plug-in hybrid electric vehicles. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive.

Small Off-Road Engines

In December 2021, CARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment.

Local

SJVAPCD Climate Change Action Plan (2008)

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

Goals:

- Assist local land-use agencies with CEQA issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.
- Ensure that climate protection measures do not cause an increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

⁸⁵ (California Energy Commission 2022)

⁸⁶ (CARB 2020)

Actions:

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

SJVAPCD CEQA Greenhouse Gas Guidance (2009).

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

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

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

For stationary source permitting projects, best performance standards are "the most stringent of the identified alternatives for control of GHG emissions, including the type of equipment, design of equipment

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

It is important to note that the SJVAPCD’s Climate Change Action Plan and CEQA GHG Guidance were based on the State’s year 2020 GHG-reduction targets, per AB 32. The SJVAPCD has not released an updated plan or updated CEQA guidance addressing the State’s currently identified future year GHG-reduction targets, such as the State’s year 2030 GHG-reduction target, as outlined in SB 32.

4.9.3 Methodology and Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to greenhouse gas emissions. The Fowler 2040 GP would have a significant impact if it would:

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

The State CEQA Guidelines do not provide numeric or qualitative thresholds of significance for evaluating GHG emissions associated with proposed development projects. Instead, CEQA leaves the determination of the significance of GHG emissions up to the lead agency and authorizes the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts.

As of August 2022, the SJVAPCD has not adopted a recommended GHG significance threshold based on achieving future year (e.g., SB 32) GHG-reduction targets. However, as previously discussed, the State’s 2017 Climate Change Scoping Plan recommends application of local plan-level GHG emissions efficiency targets of 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MTCO_{2e} per capita by 2050. Based on a linear interpolation of these two GHG reduction goals, the efficiency significance threshold for the proposed Fowler 2040 GP would be 3.6 MTCO_{2e} per capita.⁸⁷

Accordingly, the proposed GP would be considered to have a potentially significant impact if annual net increases of GHG emissions would exceed the threshold of 3.6 MTCO_{2e} /Capita. The City of Fowler has not adopted an applicable plan, policy, or regulation for the purpose of reducing the emissions of GHGs. Therefore, the significance of the project’s consistency with an applicable plan was evaluated in comparison to the GHG-reduction strategies contained in the 2022 FCOG RTP/SCS; as well as the State’s 2017 Climate Change Scoping Plan.

Methodology

Short-term GHG emissions associated with construction activities are largely dependent on the type of development proposed, off-road equipment and on-road vehicles required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

⁸⁷ (California Air Resources Board 2017)

Long-term operational increases in GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod) for land uses while vehicle emissions were calculated using CARB’s Emission Factor 2021 (EMFAC2021) v1.0.2. Modeling was conducted for the proposed GP based on projected increases in land use types and trip-generation rates identified in the traffic analysis prepared for this project, including the assumption that full buildout of the Fowler 2040 GP would occur by 2042 to align with the Fresno COG transportation model horizon. Emissions modeling files are provided in [Appendix C](#).

4.9.4 Impacts

Threshold 1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact. Annual operational emissions associated with existing (year 2019) conditions and future year (2042) GP buildout conditions are summarized in [Table 4-22](#). As noted, estimated GHG emissions total approximately 56,862 MTCO₂e/year for existing conditions and would increase to approximately 166,275 MTCO₂e/year under buildout conditions. Estimated increases in GHG emissions would be largely associated with increases in motor vehicle use and energy consumption. To a somewhat lesser extent, waste generation, water use, and area sources would also contribute to overall increases in projected future community wide GHG emissions.

Table 4-22: Annual Operational GHG Emissions at Buildout

Source	2019 Emissions (MTCO ₂ e)	2042 Emissions (MTCO ₂ e)
Area ^{1,2}	1,445	7,045
Energy Use ¹	19,522	50,203
Mobile ³	50,847	73,818
Waste ¹	5,933	23,14
Water ¹	3,415	9,478
Total:	81,162	263,687
Population:	6,808	48,404
MTCO ₂ e/Capita:	11.9	5.4
Significance Threshold (MTCO ₂ e/Capita):	NA	3.6
<ol style="list-style-type: none"> 1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the 2040 General Plan. 2. Emissions exclude wood burning hearths but allow for natural gas hearths as per rule 4901. 3. Trip-generation rates derived from the traffic analysis prepared for this project and emissions were calculated using EMFAC data. 4. Totals may not sum due to rounding. Refer to Appendix A for emissions modeling assumptions and results. 		

As noted in [Table 4-22](#), GHG emissions per capita are projected to decrease substantially in future year, from approximately 11.9 MTCO₂e/capita in 2019 to 5.4 MTCO₂e/capita in 2042. However, per capita GHG emissions in year 2042 with GP buildout, would still be projected to exceed the significance threshold of 3.6 MTCO₂e/capita. It is important to note that estimated year 2042 GHG emissions are conservative and do not fully account for future GHG reductions associated with existing and future building standards and regulations, such as the Advanced Clean Car II rule and the recently adopted Small Off-Road Engine regulation. Nonetheless, predicted future year GHG emissions would still be anticipated to exceed the GHG significance threshold. It is important to reiterate that the GHG threshold of 3.6 MTCO₂e/capita is based on the thresholds identified in the currently adopted *2017 Climate Change Scoping Plan*, which does not address the States GHG-reduction target of achieving carbon neutrality by 2045. To achieve carbon neutrality by 2045, it is recommended that future development not include natural gas service and that alternatives, such as use of electrically-powered equipment be used. As previously discussed, it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. Implementation

of the Fowler 2040 GP does not identify policies that would prohibit the installation of natural gas appliances for future development nor promote the installation of electric vehicle charging stations beyond that required under current regulatory requirements. For these reasons and given that future GHG emissions associated with implementation of the Fowler 2040 GP would exceed the GHG threshold of 3.6 MTCO_{2e}/capita, this impact would be considered **potentially significant**.

These goals and policies outlined below would promote the implementation of the Transportation Control Measures and would help to reduce project-generated emissions. In addition to Air Quality Mitigation Measures AQ-1 and AQ-2, Mitigation Measures GHG-1 and GHG-2 shall be implemented to reduce project-generated emissions of GHGs.

Policy LU-1	Development shall occur in accordance with the planned land uses as shown on <i>Figure 4-1: Land Use Diagram</i> .
Policy LU-2	Density and intensity standards for each land use designation are shown in <i>Table 4-1: Land Use Designations and Consistency Matrix</i> . Consistent zoning districts determined to be compatible with the identified land use designation are also included in <i>Table 4-1</i> . Other zoning districts may be determined to be consistent with a land use designation based on compatibility with the intent of the designation and its specified density or intensity range. Such density or intensity range shall be calculated based on gross acres.
Policy LU-3	For a plan amendment and/or rezoning request, the City may require submittal of supplemental information to determine the need for the plan amendment or rezoning.
Policy LU-13	Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses.
Policy LU-18	Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development.
Policy LU-19	Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.
Policy LU-21	Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips.
Policy CDES-16	Locate parking areas within commercial projects in a manner that promotes pedestrian activity.
Policy CDES-18	New commercial projects are designed in such a way that they enhance Fowler's character.
Policy CDES-31	Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.
Policy CH-1	Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.
Policy CH-2	Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.
Policy CH-3	Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.
Policy CH-4	Require street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.
Policy CH-6	Evaluate land use decisions for consistency with siting recommendations as outlined in California Air Resources Board's (CARB's) Land Use Compatibility Handbook.

	Design and construct a multimodal circulation system, as shown on
Policy MOB-1	<i>Table 4-43: Existing Vehicle Miles Traveled per Capita</i>
	Table 4-44: Existing Vehicle Miles Traveled per Employee
Policy MOB-2	Streets are designated and planned according to the functional classifications listed in Table 9-2.
Policy MOB-3	The right of way for arterials and collectors may be reduced to avoid disrupting existing development if the travel way generally meets the street classification design requirements listed in Table 9-2.
Policy MOB-4	Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects. Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.
Policy MOB-5	New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
Policy MOB-9	Develop a multi-purpose recreational bikeway network and support facilities.
Policy MOB-10	Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
Policy MOB-11	Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
Policy MOB-12	Coordinate with Caltrans, Fresno COG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
Policy MOB-13	Identify opportunities for a multi-modal transit hub within the City.
Policy MOB-14	Support the development of paratransit service programs.
Policy MOB-15	Support transit operator efforts to maximize return for short- and long-range transit needs.
Policy MOB-16	Incorporate the potential for public transit service expansion throughout the City.
Policy MOB-17	Improve route options and access for public transit City-wide, specifically west of SR 99.
Policy MOB-18	The City shall implement the community trail network as shown in <i>Figure 8-2: Trail Facilities</i> .
Policy OS-10	Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.
Policy OS-11	Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.
Policy OS-12	

For land use plans, the analysis of GHG emissions is typically conducted based on per capita emission rates. For Fowler, the estimated existing year 2019 population was 6,808. Under Fowler 2040 GP buildout conditions, the population would increase approximately 41,596, to a total of approximately 48,404 individuals⁸⁸ Based on these population estimates and the estimated community-wide GHG emissions noted in **Table 4-22**, estimated emissions would total approximately 11.9 MTCO_{2e}/Capita under existing conditions and approximately 5.4 MTCO_{2e}/Capita under future proposed GP buildout conditions. Estimated GHG emissions would exceed the GHG significance threshold of 3.6 MTCO_{2e}/Capita for year 2042. While implementation of the Fowler 2040 GP policies and proposed mitigation measures would reduce GHG emissions, it may not be possible to reduce the GHG emissions from build out to below the recommended threshold given uncertainties in the timing and effectiveness of these measures. Therefore, this impact would be considered **significant and unavoidable**.

Threshold 2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. The City of Fowler has not adopted an applicable plan, policy, or regulation for the purpose of reducing the emissions of GHGs. Therefore, the significance of the project's consistency with an applicable plan was evaluated in comparison to the GHG-reduction strategies contained in the 2022 FCOG Regional Transportation Plan (RTP)/SCS; as well as State's 2017 Climate Change Scoping Plan.

The *2017 Climate Change Scoping Plan* was released in November 2017. The *2017 Climate Change Scoping Plan* includes measures to reduce GHG emissions associated with transportation, electricity consumption, natural gas usage, water conservation, green buildings, and recycling and waste management. The *2017 Climate Change Scoping Plan* incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and Executive Order B-30-15, while substantially advancing toward the State's goal of achieving an 80 percent reduction below 1990 levels by year 2050. As mentioned earlier, the *2017 Climate Change Scoping Plan*, recommends local plan-level targets of no more than 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MT MTCO_{2e} per capita by 2050. Based on a linear interpolation of these two GHG reduction goals, the proposed target for the Fowler 2040 GP would be no more than 3.6 MTCO_{2e} per capita by 2042. As shown in **Table 4-22**, the City is projected to emit 5.4 MTCO_{2e}/Capita in future year 2042 GP buildout conditions, which is above the threshold of 3.6 MTCO_{2e}/Capita. As a result, projected GHG emissions associated with implementation of the Fowler 2040 GP would not be consistent with the recommended plan-level GHG-reduction targets specified in the State's *2017 Climate Change Scoping Plan*. Therefore, development facilitated by the proposed Fowler 2040 GP would conflict with the currently adopted *2017 Climate Change Scoping Plan*.

It is important to note that the State's Climate Change Scoping Plan is currently being updated. In addition to the State's year 2030 and 2050 GHG-reduction goals addressed in the currently adopted *2017 Climate Change Scoping Plan*, the updated *Draft 2022 Climate Change Scoping Plan* will also address the State's GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18. This *Draft 2022 Climate Change Scoping Plan* is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State's year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State's future year 2050 GHG-reduction goals. The *Draft 2022 Climate Change Scoping Plan* is anticipated to be adopted by the end of this year. As noted in Impact GHG-1, it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum

⁸⁸ (Kittlelson & Associates 2022)

extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. This impact would be considered **potentially significant**.

In 2022, FCOG adopted the *2022 RTP/SCS*. The SCS component provides goals and policies needed for the FCOG region to meet the GHG-reduction targets set by the ARB.

The Fowler 2040 GP’s consistency with the goals and policies contained in the FCOG RTP/SCS needed to meet the GHG-reduction strategies set forth by the ARB is summarized in **Table 4-22**. Proposed GP policies that correspond to the sustainability strategies identified in the SCS are also identified. As shown, the proposed GP would be consistent with the FCOG’s 2022 RTP/SCS. In addition, based on the traffic analysis prepared for the project, the Fowler 2040 GP would decrease the VMT per capita by 39% and the VMT per employee 53% in comparison to existing conditions. Both metrics, VMT per capita and VMT per employee were found to result in an impact that was less than significant. For these reasons, the Fowler 2040 GP would not conflict FCOG’s 2022 RTP/SCS.

The Mitigation Measures AQ-1, AQ-2, GHG-1, and GHG-2 would help to reduce the GHG emissions of the Fowler 2040 GP. The future development facilitated by the Fowler 2040 GP would not conflict with the FCOG’s 2022 RTP/SCS. Implementation of Mitigation Measure GHG-1 would require the City to develop a Climate Action Plan to incorporate measures to reduce GHG emissions associated with future development. Mitigation Measure GHG-2 would require implementation of additional measures for land use development projects in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. However, while policies contained in the Fowler 2040 GP, proposed Mitigation Measures, and implementation of future regulatory requirements would reduce the GHG emissions at buildout, the extent of GHG reductions attributable to these measures cannot be accurately quantified at this time and projected future year GHG emissions could potentially exceed applicable thresholds given uncertainties in the timing and effectiveness of these measures. Therefore, this impact would be considered **significant and unavoidable**.

4.9.5 Mitigation Measures

MM GHG-1: The City shall develop a Climate Action Plan to identify ways to reduce GHG emissions and limit climate change impacts on the residents of the city of Fowler. The Climate Action Plan shall integrate the state’s future GHG-reduction goals, including the State’s goal of attaining carbon neutrality by 2045.

MM GHG-2: Until the City adopts a qualified Climate Action Plan consistent with Mitigation Measure GHG-1 the following measures shall be applied to new land use development projects:

- Land use development projects shall be constructed with electrically-powered appliances and building mechanical equipment in place of natural-gas fueled equipment.
- Land use development projects shall, to the maximum extent possible, exceed the California Green Building Standard Code Tier 2 requirements for electric vehicle charging infrastructure.

4.9.6 Cumulative Impacts

The full buildout and development under the Fowler 2040 GP would result in the construction and operation of new development, which would result in increased greenhouse gas emissions. As individual development projects are proposed, each project would be required to be analyzed against thresholds of significance. However, as individual projects would be required to comply with federal, State, and regional regulations, impacts would be less than significant.

4.10 Hazards and Hazardous Materials

This section evaluates impacts from hazards and hazardous materials in the context of implementation of the Fowler 2040 GP, including potential impacts from hazardous material spills and releases, the location of hazardous materials in relation to schools, locations of previous hazardous material spill sites, location of airports in relation to the Project, potential impact to emergency response plans, and the potential of wildland fire within the planning area.

4.10.1 Environmental Baseline

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in CCR Title 22 as follows: A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (CCR Title 22, Section 66261.10).

Chemical and physical properties cause a substance to be considered hazardous. Such properties include toxicity, ignitability, corrosiveness, and reactivity. CCR Title 22, Sections 66261.20 through 66261.24 define the aforementioned properties. The release of hazardous materials into the environment can contaminate soils, surface water, and groundwater supplies.

Past and present land use patterns are good predictors of the potential for past contamination by hazardous materials and the current use and storage of hazardous materials. Industrial and certain commercial land uses, such as dry cleaners and auto service stations, are more likely to use and store large quantities of hazardous materials than residential land uses. Small quantities of hazardous materials are also routinely used and stored in other commercial and retail businesses, educational facilities, medical facilities, and households. Commercial, industrial and warehouse land uses in the city are concentrated along SR 99 and Golden State Boulevard.

Land use patterns are also useful for identifying the location of sensitive receptors, such as schools, day-care facilities, hospitals, and nursing homes. [Figure 3-1](#) in [Section 3.3.1](#) shows the pattern of existing land uses in Fowler.

Existing Hazardous Material Contamination

Department of Toxic Substances Control

EnviroStor is the Department of Toxic Substances Control (DTSC) database of hazardous waste materials sites. According to an EnviroStor search performed on August 11, 2022, there was one active hazardous material spill site located in the planning area at the time.⁸⁹ The Fowler Unified School District proposed to expand its Marshall Elementary School site onto a location that was previously used for agricultural operations and had experienced the use of pesticides and fertilizer. The site was reviewed prior to construction for arsenic and organochlorine pesticides. On April 5, 2019, it was determined that no further action was required, and construction of the school ensued. In addition, a Pacific Gas and Electric Company (PG&E) Manufactured Gas Plant is identified as needing evaluation; however, the cleanup status of the case has been inactive since 1995.

⁸⁹ (California Department of Toxic Substances Control 2022)

State Water Resources Control Board

GeoTracker is the SWRCB data management system for sites that impact, or have potential to impact, water quality in California, with emphasis on groundwater. GeoTracker contains records for sites that require cleanup, such as Leaking Underground Storage Tanks Sites, Cleanup Program Sites, and Department of Defense Sites. GeoTracker also contains records for various unregulated projects, as well as permitted facilities including operating Permitted Underground Storage Tanks (UST), Irrigated Lands, Oil and Gas production, and Land Disposal Sites (landfills). According to a GeoTracker search performed on August 11, 2022, there was one active hazardous material spill site located within the planning area. The spill site is located at the Fowler Butane Services location near the intersection of Sumner Avenue and Fowler Avenue. Diesel is the potential contaminant of concern and, as of January 18, 2018, the site is awaiting a soil investigation.⁹⁰ The Central Valley RWQCB is the lead agency on the site cleanup. The GeoTracker database did not identify any other active hazardous waste spill sites within the City or its proposed expansion area. In addition, the Fowler City Landfill site, located southeast of the intersection of SR 99 and Adams Avenue, is identified as a permitted hazardous material site. The site’s status has been "Open" since 1965 and does not include any specified contaminants of concern.

Table 4-23: Contaminated Sites in Fowler

ID	Site Name	Address	Case Type	Cleanup Status
Cases Identified by the DTSC				
60002638	Marshall Elementary School	142 North Armstrong	School Investigation	Active
10490099	PG&E Manufactured Gas Plant SQ-FK-FOW	West Fresno Street near South Eighth Street	Evaluation	Inactive: Needs Evaluation
Cases Identified by the SWRCB				
T10000011242	Wright Oil	114 North Sumner Avenue	Cleanup Program Site	Open: Site Assessment
L10004199996	Fowler City Landfill	Highway 99 and West Adams Avenue	Land Disposal Site	Open

Airports and Airport Hazards

Selma Airport

Airport-related hazards can occur if departing or landing aircraft pose a safety risk to nearby development, or vice versa. There are no airports within the planning area. The Selma Airport is the closest airport and is located approximately one mile to the south. The southern portion of Fowler’s planning area is located within the Traffic Pattern Zone (TPZ) of the Selma Airport.⁹¹ The aircraft accident risk level is considered to be low within the TPZ (see [Table 4-24](#)). Land use limitations in the TPZ include a density limit of 300 persons per acre, an open space requirement of 10 percent, and prohibitions on hazards to flight and high intensity uses such as stadiums. The Fresno County Airport Land Use Committee (ALUC) administers the Airport Land Use Compatibility Plans (ALUCP) for all airports within the County, including for the Selma Airport.

Hazardous Materials Transport

Transportation of hazardous materials and waste is regulated by CCR Title 22. Caltrans is the primary regulatory authority for the interstate transport of hazardous materials and establishes safe handling procedures for packaging, marking, labeling, routing, etc. The California Highway Patrol and Caltrans enforce federal and State regulations and respond to hazardous materials transportation emergencies that occur on SR 99. Emergency responses are coordinated as necessary between federal, State, and local

⁹⁰ (California State Water Resources Control Board 2022)

⁹¹ (Fresno Council of Governments 2018)

governmental authorities and private entities through a State-mandated Emergency Management Plan. The emergency response for hazardous materials transportation emergencies on locally serving roads would be handled by local police and firefighters.

Major transportation routes include SR 99, Golden State Boulevard, Temperance Avenue, American Avenue, Fowler Avenue, Clovis Avenue, and Manning Avenue. The Fowler 2040 GP classifies SR 99 as a Freeway, Golden State Boulevard as an Expressway, and all other roadways mentioned as Arterial streets. Trucks and other vehicles transporting hazardous materials would primarily use these routes. Accidents on any route where hazardous materials are spilled could result in explosions, physical contact with spilled chemicals, degradation of the environment, and the exposure of the public to airborne chemicals.

Agricultural Hazards

The Central Valley is home to one of the largest agricultural economies in the world; there are numerous agricultural operations and facilities within and surrounding the planning area. Agricultural production could result in the accidental release of agricultural chemicals including pesticides and fertilizers, potentially exposing sensitive receptors to contact with or ingestion of these chemicals. Sensitive receptors are discussed in more detail below. Pesticide application permits are renewed on an annual basis by the County Agricultural Commissioner. The Commissioner's office compiles reports required of farmers and other users of agricultural pesticides that provide complete, site-specific documentation of the state of agriculture in the County.⁹²

Sensitive Receptors

Sensitive receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under age 16, elderly over age 65, athletes, and people with cardiovascular and respiratory diseases. Locations with high concentrations of these groups would include daycares, residential areas, hospitals, elder care facilities, schools, and parks. The planning area currently includes numerous residential areas, two elementary schools, one middle school, one high school, one continuation school, medical clinics, and daycares, and a number of parks.

4.10.2 Regulatory Setting

Federal

Federal Toxic Substances Control Act

The TSCA provides the USEPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. The TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls, asbestos, radon and lead-based paint.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities. The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards,

⁹² (Fresno County 2022)

including spill and overflow protection devices for new tanks. Tanks must also meet performance standards to ensure that stored material will not corrode their tanks.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability.

The Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide Fungicide Rodenticide Act (FIFRA) (7 USC 136 et seq.) provides federal control of pesticide distribution, sale, and use. The USEPA was given authority under FIFRA to study the consequences of pesticide usage, and to require users (farmers, utility companies, and others) to register when purchasing pesticides. Later amendments to the law required users to become certified as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by the USEPA. Registration assures that pesticides will be properly labeled and, if used in accordance with specifications, that they will not cause unreasonable harm to the environment.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 was created to help communities plan for chemical emergencies. It also requires industry to report on the storage, use and releases of hazardous substances to federal, state, and local governments. EPCRA requires state and local governments, and Indian tribes to use this information to prepare for and protect their communities from potential risks.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act requires companies to declare potential toxic hazards to ensure that local communities can plan for chemical emergencies. The USEPA maintains a National Priority List (NPL) of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. The USEPA also maintains the Comprehensive Environmental Response, Compensation, and Liability Information System database, which contains information on hazardous waste sites, potentially hazardous waste sites, and remedial activities across the nation.

Occupational Health and Safety Administration

The United States Department of Labor Occupational Health and Safety Administration (OSHA) is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (29 CFR 1910.120).

Hazardous Waste Operations and Emergency Response

HAZWOPER requirements include federal regulations that involve procedures for clean-up operations required by a governmental body involving hazardous substances that are conducted at uncontrolled hazardous waste sites. This includes the USEPA NPL sites, State priority site lists, sites recommended for the USEPA NPL sites, and other initial investigations of government-identified sites, which are conducted before the presence or absence of hazardous substances has been ascertained. A person who is engaged in work with any potential for exposure to hazardous substances must comply with HAZWOPER regulations.

Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations

Regulations for lead-based paint are contained in the Lead-Based Paint Elimination Final Rule 24 CFR 33, governed by the United States Department of Housing and Urban Development, which requires sellers and lessors to disclose known lead-based paint and lead-based paint hazards to prospective purchasers and lessees. Additionally, all lead-based paint abatement activities must comply with state and federal OSHAs and with the State of California Department of Public Health requirements. Only personnel trained and certified in lead-based paint abatement are allowed to perform abatement activities. All lead-based paint removed from structures must be hauled and disposed of by a transportation company licensed to move this type of material to a landfill or receiving facility licensed to accept the waste.

State

Department of Toxic Substances Control

As a department of the CalEPA, the DTSC is the primary agency in California that regulates hazardous waste, assumes authority for clean-up of the most serious existing contamination sites, and looks for ways to reduce the hazardous waste produced in California. The DTSC operates primarily under the authority of the Resource Conservation and Recovery Act and the California Health and Safety Code.

The DTSC also administers the California Hazardous Waste Control Law to regulate hazardous wastes. While the Hazardous Waste Control Law is generally more stringent than the Resource Conservation and Recovery Act, both State and federal laws apply in California. The Hazardous Waste Control Law lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

GC Section 65962.5 requires the DTSC, the SWRCB, and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the State. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the Lead Agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the site at issue is included.

If soil is excavated from a site containing hazardous materials, it is considered a hazardous waste if it exceeds specific criteria in CCR Title 22. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

The Hazardous Waste and Substances Sites List

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State as well as local agencies and developers to obtain information about the location of hazardous materials release sites. GC Section 65962.5 requires DTSC to update the list annually; DTSC is responsible for a portion of the information contained in the Cortese List, which is supplemented by other State and local government agencies.

The Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (HSC Section 25100, et seq.), which is implemented by regulations described in CCR Title 22. The State program is like the federal program under RCRA, but more stringent. This regulation lists materials that may be hazardous and establishes criteria for their identification, packaging, and disposal.

Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. As required by GC Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the state called the Cortese List.

Unified Program

The CalEPA as established a unified hazardous waste and hazardous materials management regulatory program (Unified Program), as required by SB 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental programs under the CalEPA, the SWRCB, and the RWQCBs in each region of the State, the State Office of Emergency Services, and the State Fire Marshal:

- Underground Storage Tank program;
- Hazardous materials release response plans and inventories;
- California Accidental Release Prevention Program;
- Above ground Petroleum Storage Act requirements for spill prevention, control, and countermeasure plans;
- California Uniform Fire Code hazardous material management plans and inventories.

Local agencies implement these five environmental programs at the local level and are known for this purpose as Certified Unified Program Agencies (CUPA). The CUPAs provide a central permitting and regulatory agency for permits, reporting, and compliance enforcement.

California Department of Pesticide Regulations, Department of Food and Agriculture, the Department of Public Health, and the Division of Drinking Water

The California Department of Pesticide Regulations, a division of CalEPA, in coordination with the California Department of Food and Agriculture and the California Department of Public Health, have the primary responsibility to regulate pesticide use, vector control, and food. The Division of Drinking Water provides regulations that ensure drinking water safety.

California Division of Occupation Health and Safety

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations within the State. The Cal/OSHA standards are more stringent than federal OSHA regulations and are presented in CCR Title 8. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders); specific practices are described for construction, hazardous waste operations, and emergency response. Cal/OSHA conducts on site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Local

Fresno County Department of Public Health, Division of Environmental Health

The Fresno County Department of Public Health, Division of Environmental Health serves as the Certified Unified Program Agency for Fresno County. As required under the State's Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, the Fresno County CUPA's authority and responsibilities are the same as those described for the Unified Program listed above under the State Regulatory Setting. The Fresno County General Plan Health and Safety Element contains several goals and policies that address hazardous materials, including the following:

- To minimize the risk of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

- The County shall require facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.
- The County, through its Hazardous Materials Incident Response Plan, shall coordinate and cooperate with emergency response agencies to ensure adequate Countywide response to hazardous materials incidents.

Fresno County Master Emergency Services Plan

The Fresno County Master Emergency Services Plan (2017), which includes Fowler, analyzes potential hazards and risks to the County of Fresno, while setting an operational hierarchy detailing the level of responsibility for departments within the County. The plan assesses resource management, preparedness, emergency operations, and communications in the event of an emergency situation.

Fresno County Multi-Hazard Mitigation Plan

The purpose of a local hazard mitigation plan is to reduce or eliminate long-term risk to human life and property resulting from hazards. A local hazard mitigation plan recognizes risks before they occur, as well as identifies resources, information, and strategies for emergency response. Fresno County, with participation from 17 jurisdictions (including Fowler), is the lead agency on the Multi-Hazard Mitigation Plan. In 2018, the Fresno County Board of Supervisors adopted the Fresno County Multi-Hazard Mitigation Plan, which includes information that pertains to the City in the areas of health, infrastructure, housing, government, environment, and land use.

Fresno County Airport Land Use Commission

The ALUC is tasked with protecting the public health, safety and welfare by ensuring that orderly development and prevention of excessive noise and safety hazards around public use airports is followed in accordance with State and local laws. ALUCs establish the policies on land uses around the airport, ensuring they are compatible with airport operations. This is done on an advisory basis. ALUCs also evaluate the compatibility of proposed local agency land use policy actions with the relevant provisions within the associated ALUCP. They review individual development projects to ensure they are within the noise and safety standards, in accordance with State laws and the ALUCP, within the review area of influence of the airport the project is located in.

4.10.3 Methodology and Thresholds of Significance

The impact analysis is based on an assessment of baseline conditions for the Fowler 2040 GP planning area, including locations of hazardous materials use and storage, existing contaminated sites, air traffic hazards, emergency response and evacuation plan requirements. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to the predicted development that would occur under the proposed project. This section describes impacts in terms of location, context, duration, and intensity.

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to greenhouse gas emissions. The Fowler 2040 GP would have a significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to GC Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

4.10.4 Impacts

Threshold 1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. Buildout of the Fowler 2040 GP would result in the development of residential, commercial, and industrial uses as well as an increase in Fowler’s population and the number of people working in Fowler. Future development would result in the transportation of hazardous materials during both construction and operational activities. Development would occur along major transportation routes within Fowler, where hazardous materials are most likely to be transported. The existing and planned industrial areas in Fowler are located to the northwest and southeast, where the majority of industrial transport would originate from. Commercial development, which may also result in the transport of hazardous materials, would be located within the industrial areas previously discussed and within areas planned for commercial uses, including downtown Fowler and areas east and west of SR 99.

Although the overall quantity of hazardous materials and waste generated in the planning area could incrementally increase as a result of implementation of the Fowler 2040 GP, all new developments that handle or use hazardous materials would be required to comply with the regulations, standards, and guidelines established by the USEPA, the State of California, Fresno County, and Fowler related to storage, use, and disposal of hazardous materials. The HazMat Compliance Program is designated as the local CUPA for Fresno County and performs inspections to prevent exposure to environmental health hazards for businesses and residents in Fowler.

CBC requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal and State laws related to the storage of hazardous materials would maximize containment (through safe handling and storage practices described above) and provide for prompt and effective cleanup if an accidental release occurs.

The CalEPA requires all businesses that handle more than specified amounts of hazardous materials to submit business plans through the California Environmental Reporting System. Specifically, any new business that meets the specified criteria must submit a full hazardous materials disclosure report that includes an inventory of the hazardous materials generated, used, stored, handled, or emitted; and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The report must identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release, identification

of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

For those employees that would work with hazardous materials, the amount of hazardous materials that are handled at any one time are generally relatively small, reducing the potential consequences of an accident during handling. Business-specific practices would be required to comply with federal and State laws to eliminate or minimize the potential consequence of hazardous materials accidents. For example, employees who would work around hazardous materials are required to wear appropriate protective equipment, and safety equipment is routinely available in all areas where hazardous materials are used.

The County of Fresno Department of Environmental Health (DEH) allows businesses that handle and store hazardous materials above threshold quantities and are regulated by the DEH through certification of a Hazardous Materials Business Plan.⁹³ CalEPA requires that any business that handles hazardous material or substances submit a Hazardous Materials Business Plan. At this time Fowler does not have a plan of its' own. These plans aid to reduce the likelihood of accident conditions resulting from the handling or disposal of hazardous materials. The California OES provides emergency response to hazardous materials incidents in the planning area. Additional emergency response capabilities are not anticipated to be necessary to respond to the potential incremental increase in the number of incidents that could result from implementation of the Fowler 2040 GP. Further, adherence to applicable regulations as discussed above would be required to reduce any potential consequences of a hazardous materials operational accident.

Demolition activities related to future development and re-development projects in Fowler would potentially result in emission of lead and asbestos. Lead-based materials and asbestos exposure are regulated by Cal/OSHA. CCR Title 8, Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed Cal/OSHA standards. Under this rule, construction workers may not be exposed to lead at concentrations greater than 50 micrograms per cubic meter of air averaged over an eight-hour period and exposure must be reduced to lower concentrations if the workday exceeds eight-hours. Similarly, CCR Title 8, Section 1529 sets requirements for asbestos exposure assessments and monitoring, methods of complying with exposure requirements, safety wear, communication of hazards, and medical examination of workers.

Compliance with federal and State laws and regulations would ensure that any potential impacts due to the transport, use, or disposal of hazardous materials to a less than significant level. Additionally, Fowler 2040 GP policies SAF-8 and SAF-9, as well as action items SAF-8a, SAF-8b, SAF-9a, and SAF-9b would minimize impacts related to the use, storage, transport, and release of hazardous materials in the planning area. These policies direct Fowler to identify hazardous waste transportation routes, work cooperatively with other public agencies in emergency response, update the Emergency Response Plan and require businesses to take appropriate measures to protect public health and safety.

Policy SAF-8	Protect soils, surface water, and groundwater from contamination from hazardous materials.
Action Item SAF-8a	Continue to provide household hazardous waste collection programs to encourage proper disposal of products containing hazardous materials or hazardous wastes.
Action Item SAF-8b	Should a site be contaminated by hazardous waste, work with the Fresno County Environmental Health Division, related agencies, and landowners to enable the clean-up of these sites.

⁹³ (Fresno County 2022)

Policy SAF-9	Cooperate with State agencies and the Fresno County Environmental Health Division efforts to identify hazardous materials users, implement hazardous materials plans, and minimize risks associated with hazardous cargoes, agricultural spraying, and electromagnetic fields.
Action Item SAF-9a	Revise Zoning Ordinance to require industries which store and process hazardous materials to provide a buffer between the facilities and the property boundary.
Action Item SAF-9b	Ensure that industrial facilities are constructed and operated within the standards of the most up-to-date safety and environmental protocols.

Compliance with federal and State laws and regulations and the Fowler 2040 GP policies and action items listed above would ensure that potential impacts related to hazards and hazardous materials transport are **less than significant**.

Threshold 2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. As discussed above, future development resulting from buildout of the Fowler 2040 GP could involve the use of hazardous materials associated with construction equipment, such as diesel fuel, lubricants, and solvents. Hazardous materials could be spilled resulting from transportation accidents; however, by requiring that transport vehicles use designated truck routes and through the use of industry BMPs, any potential impacts due to hazardous materials spills due to transportation accidents would be minimized. In addition, demolition of existing buildings could result in the release of hazardous materials such as asbestos and the ingestion of hazardous materials from lead-based paints. However, the contractor would comply with all Cal/OSHA regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. The Fowler 2040 GP policies listed below would aid to lessen any impacts associated with a significant hazard to the public or environment caused through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Furthermore, any potential accidental hazardous materials spills during construction are the responsibility of the contractor to remediate in accordance with industry BMPs and State and County regulations. In addition to the Fowler 2040 GP policies SAF-8 and SAF-9 as well as action items SAF-8a, SAF-8b, SAF-9a, and SAF-9b (outlined under Threshold 1 above), the policies SAF-11 and SAF-12 would direct critical facilities and improvements to be made that would minimize risks associated with hazardous cargo.

Policy SAF-11	Locate new critical facilities at least 100 feet from the railroad mainline and Highway 99 to minimize risks in the event of a hazardous cargo accident.
Policy SAF-12	Promote improvements, such as the construction of grade-separated crossings, to increase overall safety and reduce potential risk from hazardous cargo.

Compliance with federal and State laws and regulations and the Fowler 2040 GP policies and action items listed above would ensure that potential impacts related to hazards and hazardous materials transport are **less than significant**.

Threshold 3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact. Buildout within the planning area may result in the handling of hazardous materials within a quarter mile of existing and proposed schools. The planning area currently contains

two elementary schools, one middle school, one high school, and one continuation school. There is also a school site planned within the southwest portion of the planning area. Since the Fowler 2040 GP does not include any specific development projects, the quantity of hazardous materials proposed for use by future uses within the city is currently unknown. Accidental release or combustion of hazardous materials at new commercial and industrial developments could endanger residents or students in the surrounding community. However, the siting of school facilities would be subject to California Education Code (Section 17210, et seq.), which outlines the requirements for siting near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions or handle hazardous or acutely hazardous materials, substances, or waste. The addition of uses that would handle hazardous materials and/or generate hazardous waste would not pose a substantial health risk to nearby schools because all businesses that handle or have on-site storage of hazardous materials would be regulated by the DEH and any additional elements as required in the California Health and Safety Code Article 1 Chapter 6.95 for Business Emergency Plan (Health and Safety Code Section 25507, et seq.). Both the federal and State governments require all businesses that handle more than a specified amount of hazardous materials to submit a business plan to the DEH. Any future development that would involve the handling of hazardous materials during construction or operation would be required to submit a Hazardous Materials Business Plan and comply with all applicable federal and State laws and regulations governing the use and handling of hazardous materials. In addition, any future development would utilize industry BMPs that would ensure that potential impacts would be lowered to a less than significant level. Therefore, impacts would be **less than significant**.

Threshold 4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact. The DTSC maintains the EnviroStor database, while the SWRCB maintain the GeoTracker database. Both of these databases contain information identifying existing hazardous materials sites within Fowler. **Table 4-23** lists the existing cases within the planning area. Each of the four cases is being evaluated or monitored by the lead agency responsible that case. Any development on an existing or future hazardous material spill site would be required to meet all of the applicable federal and State regulations, ensuring the safety of those completing construction activities on the site as well as the development's future occupants. Future development could result in additional USTs associated with commercial and industrial land uses. Installation of a UST would be subject to the requirements of Fresno County's UST permitting program.⁹⁴ In addition, the following Fowler 2040 GP policies and action items would minimize any potential impacts related to hazardous materials.

Policy SAF-10	Reference State hazardous waste site lists in the City development review process and address risk, as needed, with site development requirements.
Action Item SAF-10a	Prepare and maintain a map of hazardous waste sites identified through regional, State, and federal resources.
Action Item SAF-10b	Ensure that the proponents of new developments address hazardous materials concerns through preparation of Phase I and Phase II studies, as necessary, as part of the design phase.
Action Item SAF-10c	Require buildings used for operations requiring a hazardous materials business plan to be investigated for the presence of hazardous materials and waste as part of the re-use, rehabilitation, or demolition process.

⁹⁴ (Fresno County 2022)

Policy CH-13	Increase awareness of warning signs for the presence of toxic substances related to aging housing stock.
Action Item CH-13a	Distribute informational materials on the warning signs of toxic substances through the Building Department.

Threshold 5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less than Significant Impact. The Selma Airport is located approximately one mile south of E. Springfield Avenue. As illustrated in the Selma Airport ALUCP, a portion of the planning area is located within the Airport’s TPZ (see [Table 4-24](#)). Within the TPZ, the aircraft accident risk level is considered to be low. Land use limitations in the TPZ include a density limit of 300 persons per acre, an open space requirement of 10 percent, and prohibitions on hazards to flight and high intensity uses such as stadiums. Future development within this area is not expected to result in a safety hazard or excessive noise for people residing or working in the area. This portion of the planning area is planned for medium and high density residential, commercial, and light industrial land uses. Development within the TPZ would be subject to review by the Fresno County ALUC for consistency with the ALUCP. In addition, the Selma Airport is a small municipal airport that would not be a large producer of noise due to larger commercial jet engines. The planning area would not place residents or workers in an area where substantial noise is experienced resulting from airport operations.

Threshold 6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. Fowler does not have an officially adopted emergency response plan or an emergency evacuation plan; however, Fowler is a participating jurisdiction in the County of Fresno’s Master Emergency Services Plan. Future development facilitated by the Fowler 2040 GP could result in roadwork and temporary road closures or impediments. Any work completed within an existing or future roadway would be required to be approved by the City Engineer prior to commencement of construction activities. As a result, evacuation routes would be properly maintained, and no conflict would occur with the Fresno County Master Emergency Services Plan. In addition, the following Fowler 2040 GP policies and action items direct an updated and coordinated response to hazards.

Policy SAF-2	Continue to implement the Fresno County Multi-Hazard Mitigation Plan to address disasters such as earthquakes, drought, flooding, hazardous material spills, water contamination, epidemics, fires, extreme weather, major transportation accidents, and terrorism.
Action Item SAF-2a	Review and revise, as necessary, the Municipal Code to ensure effective organization, responsiveness, and continuity of government during declared emergencies.
Action Item SAF-2b	Procure generators, or another suitable alternative, for back-up power at City Hall, the Police Department, the Fire Department, and all domestic water distribution infrastructure.
Action Item SAF-2c	The City, in conjunction with other local, State, and Federal agencies, shall ensure operational readiness of the Emergency Operations Center (EOC), conduct annual training for staff, and maintain, test, and update equipment to meet current standards.)
Action Item SAF-2d	Monitor potential risk from seismic and geologic hazards and implement actions identified by the Multi-Hazard Mitigation Plan to reduce these risks.

Action Item SAF-2e	Sponsor and support educational programs regarding emergency response, disaster preparedness protocols and procedures, and disaster risk reduction.
Action Item SAF-2f	Sponsor and support cooling centers during extreme heat days.
Policy SAF-3	Continue to coordinate with Fresno County and other jurisdictions to prepare and implement Emergency Preparedness Plans and to conduct emergency and disaster preparedness exercises to test these plans.
Policy SAF-4	Provide a street network with safe and efficient routes for emergency vehicles, meeting necessary street widths, turn around radius, and other factors as determined in coordination with emergency service providers.

Threshold 7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less than Significant Impact. The Fowler 2040 GP would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. As is discussed in further detail in [Section 4.21](#), the planning area is located in a relatively flat area that is not within the vicinity of a very high fire hazard severity zone or a State Responsibility Area. The proposed planning area would be served by the Fowler Fire Department and any future development would be reviewed by the Fire Department prior to the commencement of any construction activities. In addition, any future development projects would be required to comply with federal, State, and local regulations, including the CBC. Therefore, impacts would be **less than significant**.

4.10.5 Mitigation Measures

Mitigation measures are not required.

4.10.6 Cumulative Impacts

The analysis in this section examines impacts of the Fowler 2040 GP on hazards and hazardous materials throughout Fowler (the cumulative impact analysis area) and is cumulative in nature. Some types of hazards and hazardous materials impacts are related to site- and project-specific characteristics and conditions and would not be significantly affected by other development outside of the planning area. Potential impacts in relation to hazardous materials are generally site- and/or project-specific in nature. As a result, each future development project would consider hazardous materials on a case-by-case basis. The buildout of the proposed Fowler 2040 GP could place projects on or within the vicinity of a hazardous materials spill site that does not currently exist. In each case, the project would consider hazardous materials individually based on the site's location, not cumulatively based on the proposed planning area. Thus, cumulative impacts related to the transport, use, storage, or disposal of hazardous materials, upset conditions, hazardous emissions near schools, and project locations on known or unknown hazardous materials sites, and would not be substantial.

Similarly, impacts related to airport hazards are site-specific depending on the characteristics and design of individual projects and their location relative to distance and location of nearby airports. Existing regulations place limitations on the types of development that can be permitted within various aircraft zones surrounding an airport, such as building height restrictions or prohibiting residential occupancy. Mandatory compliance with these regulations would prevent substantial hazards related to airports.

Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an emergency in Fowler, emergency response would typically be from police, ambulance, and fire departments local to the City or Fresno County, and not from areas outside of Fresno County. Thus, the cumulative impacts related to conflict with emergency response plans would be less than significant.

The Fowler 2040 GP would not facilitate development near areas mapped as very high fire hazards. The risk of loss from existing development and the anticipated growth within Fresno County or specifically to Fowler would not result in cumulative impacts related to wildland fire hazards. As described above compliance with Fowler and County policies related to fire protection, as well as implementation of State requirements, California Fire Code standards for new structures, and fire hazard policies in the Fowler 2040 GP would minimize potential cumulative wildland fire impacts.

Figure 4-8: Contaminated Sites

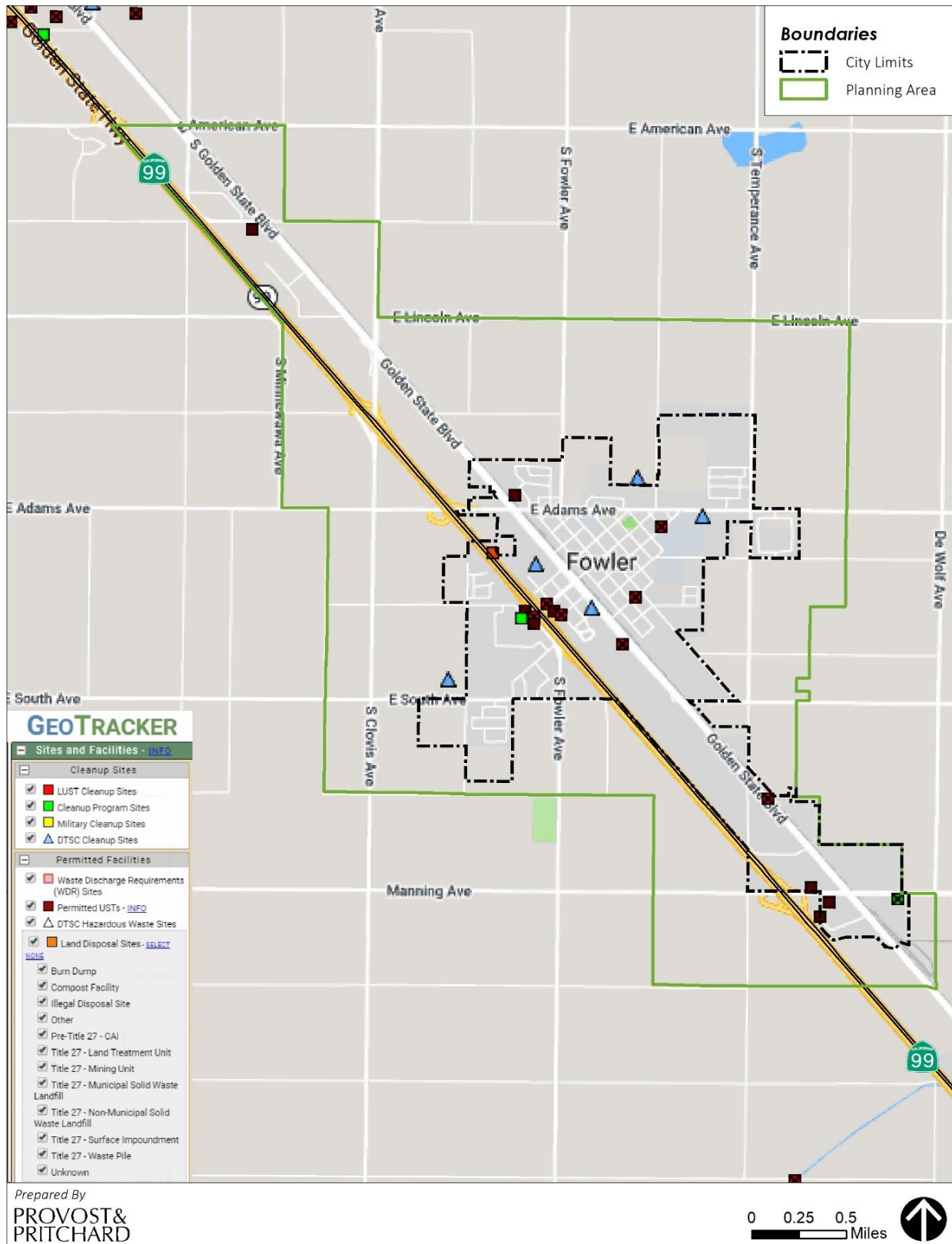
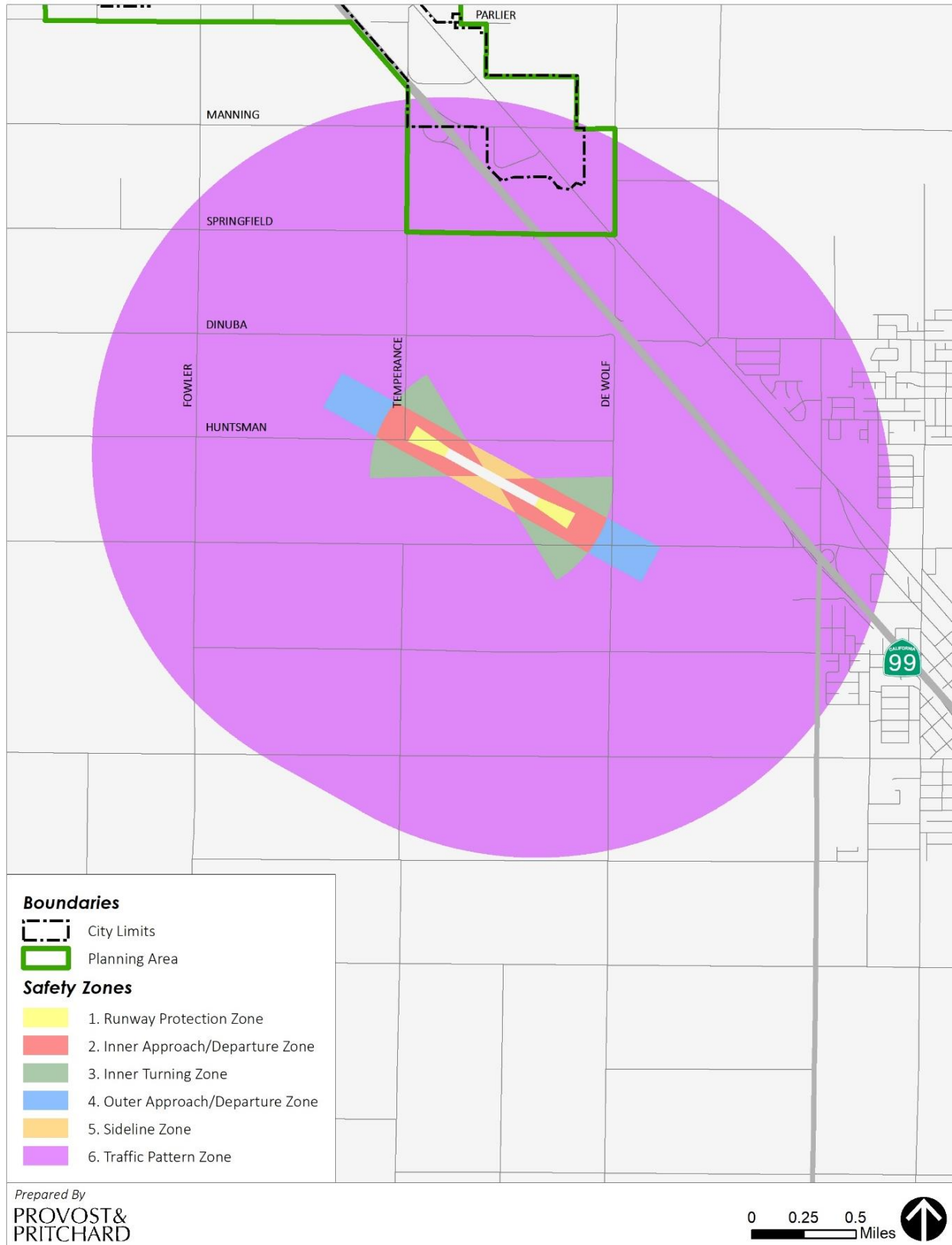


Table 4-24: Selma Airport Safety Zones



4.11 Hydrology and Water Quality

This section evaluates impacts to hydrology, including regional and local watershed characteristics such as water quality, drainage and infiltration patterns, and flood hazards that could result from implementation of the Fowler 2040 GP.

Water supply and wastewater conveyance are discussed in [Section 4.20](#), Utilities and Service Systems. Issues regarding wetlands and potentially jurisdictional waters are discussed in [Section 4.5](#), Biological Resources.

4.11.1 Environmental Baseline

Fowler is located within the Kennedy Pond watershed; Hydrologic Unit Code: 180300090206. The San Joaquin River and the Kings River are the two principal drainages within the San Joaquin Valley, and Fowler is generally located approximately 18 miles south of the San Joaquin River and 9 miles northwest of the Kings River.

Groundwater Sustainability

Fowler lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.⁹⁵ The Fowler planning area includes lands within the SKGSA, the CKGSA, and the NKGSA.⁹⁶ Due to groundwater overdraft and contamination from agricultural chemicals, provision of reliable sources of groundwater in both quantity and quality have been a challenge throughout most of the Central Valley.

Water supply and distribution are administered by the City of Fowler Public Works Department Water Division. The City's production consists of six groundwater wells located throughout Fowler, which includes one offline well which is not producing water. From the groundwater pumps, the distribution system delivers water to residents and businesses through a network of water mains, pipelines and laterals. Municipal water is tested monthly to ensure quality. According to the Annual Water Quality Report (2021), the average depth to groundwater is 85 to 95 feet, and the existing wells produce drinking water of good quality that does not require treatment for drinking. A violation of the Maximum Contaminant Level (MCL) for 1,2,3-trichloropropane (1,2,3-TCP) occurred at a well in 2017.⁹⁷ This well is currently offline while the City plans for a filtration system to address the 1,2,3-TCP contamination.

CID provides water from the Kings River for groundwater recharge and irrigation to over 6,000 growers within its 144,000-acre service area, which includes the area surrounding Fowler. In 2014, Fowler entered into an agreement with Consolidated Irrigation District (CID) to fund groundwater recharge programs in order to sustain the groundwater aquifer Fowler is reliant upon. In 2019 a cooperative agreement for groundwater management between SKGSA and CID was signed, superseding the 2014 agreement between Fowler and CID.

Flooding

The FEMA publishes Flood Insurance Rate Maps (FIRM) that show regulated flood hazard zones, which are then used to assign risk and insurance rates for homeowners and businesses. As illustrated in [Figure 4-11](#), potential flood hazards in the Fowler planning area are set forth on three FIRMs, which divide the area into flood hazard zones. Each flood hazard zone depicts the severity of and/or the type of flooding expected to occur in an area. FIRMs show the areas susceptible to a 100-year flood, which is defined by FEMA as “a

⁹⁵ (State of California Department of Water Resources 2018)

⁹⁶ (California Department of Water Resources 2021)

⁹⁷ (City of Fowler 2021)

flood with a 1 percent chance of being equaled or exceeded in any given year.” The maps also show areas susceptible to 500-year flood hazards, which consist of areas that have a 0.2 percent chance of flooding in any given year. If an area is not protected from the 100-year flood, flood insurance is mandatory.

The FEMA flood hazard designations from the FIRMs applicable to the planning area are described as follows:

Zone A. This flood insurance rate hazard zone corresponds to areas with a 1 percent annual chance of flooding, known as the 100-year floodplain. No depths or base flood elevations are shown within this zone. Flood insurance is required to be purchased within this zone and development is subject to floodplain management standards.

Zone X (shaded). This flood insurance rate hazard zone represents an area of moderate flood hazard, outside of the 100-year floodplain. This area has a 0.2 percent annual chance of flooding, which is also referred to as the 500-year flood zone. Mandatory flood insurance and building standards do not apply to this zone.

Zone X (unshaded). The majority of the planning area lies within this flood insurance rate hazard zone which represents an area of minimal flood hazard. These areas are outside of special flood hazard areas and at elevations above those susceptible to the 500-year flood.

Fowler’s flood zones for a 100-year flooding event are shown in **Figure 4-11**. There are no 500-year flood zones within the planning area.

Stormwater System

Fowler currently does not have a storm drainage master plan. Accordingly, Fowler reviews the capacity of its system and need for new storm drainage infrastructure as development projects are submitted, on a project-by-project basis. Each applicant is responsible for providing engineering details as part of project submittal, which are then reviewed by the City Engineer. There are trunk lines that lead to various basins throughout Fowler; however, some projects retain stormwater on-site through construction of new basins. A map of stormwater basin locations, as well as trunk lines, can be seen in **Figure 4-9**.

Storm water runoff can play a role in the water quality impairments. Runoff that occurs as overland flow across yards, driveways, and public streets is intercepted by the storm water drainage system and conveyed to local drainages before eventually percolating into the groundwater table or evaporating. Because Fowler is located within a closed water system, any pollutants within storm water could possibly enter the groundwater table. As water percolates into the ground, most, if not all of the contaminants “bind” with various soil particles and organic matter as the water moves toward the underlying aquifer. Possible sources of storm water pollution in Fowler include permitted industrial facilities. The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (Industrial General Permit) implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to Waters of the United States. The Industrial General Permit regulates discharges associated with 9 federally defined categories of industrial activities.⁹⁸ According to the SWRCB, there are no permitted industrial facilities within the planning area⁹⁹.

⁹⁸ (State Water Resources Control Board 2022)

⁹⁹ (California State Water Resources Control Board 2022)

Drinking Water Quality

The Fowler 2021 Annual Water Quality Report details the current drinking water source of the planning area as six untreated well sites within Fowler, all of which maintain a relatively static groundwater level between 85 – 95 ft. One of the six wells, Well 7, currently is experiencing consistent exceedances in 1,2,3-TCP. These wells are tested on a monthly basis, and the only current water quality standard violation is the aforementioned exceedance in 1,2,3-TCP. The violation originally occurred in 2017 and Fowler is in the planning stages of installing a filtration system to resolve the issue.

Regional Water Quality

The CWA 303(d) list is a register of impaired and threatened waters that states submit for USEPA approval. The list identifies all waters where pollution control measures have so far been unsuccessful in achieving or maintaining water quality standards. Waters that are listed are known as “impaired.” There are no listed waterways within or near the planning area.¹⁰⁰ The nearest impaired waterbody is the Kings River located approximately 9 miles to the southeast.

4.11.2 Regulatory Setting

Federal

Clean Water Act

The CWA, was enacted in 1972 with the intent of restoring and maintaining the chemical, physical and biological integrity of the Waters of the United States. In 1987 the CWA was amended to establish the National Storm Water Program. The program was established in two phases, incorporating a prioritized approach to stormwater. Phase I of the program required discharges from Municipal Storm Sewer Systems (MS4s) serving populations over 100,000 to be covered under a NPDES permit. Phase II of the program reduced the population threshold to 10,000 and reduced the area of construction disturbance that requires permit coverage from five acres to one acre.

National Pollutant Discharge Elimination System Program

Section 402 of the CWA established the NPDES to control water pollution by regulating point sources that discharge pollutants into Waters of the United States. In California, the USEPA has authorized the SWRCB as the permitting authority to implement the NPDES program. The SWRCB issues two-baseline general permits; one for industrial operations, the other for construction activities (General Construction Permit). Additionally, the NPDES program includes the regulation of stormwater discharges from cities, counties, and other municipalities under Order No. R8-2009-0030 (waste discharge requirements for stormwater) and updated under Order No. 5- 01-048 for the Central Valley Region.

Under the General Construction Permit, stormwater discharges from construction sites with a disturbed area of one acre or more are required to obtain either individual NPDES permits for stormwater discharges or be covered by the Construction General Permit. Coverage under the Construction General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB. Each Applicant under the Construction General Permit is required to both prepare a SWPPP prior to the commencement of grading activities and to ensure implementation of the SWPPP during construction activities. The primary objective of the SWPPP is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction activities. BMPs may include programs, technologies, processes, practices, and devices that

¹⁰⁰ (California State Water Resources Control Board 2022)

control, prevent, remove, or reduce pollution. The SWPPP would also address BMPs developed specifically to reduce pollutants in stormwater discharges following the completion of construction activities.

Federal Emergency Management Agency

FEMA administers the NFIP, in which participating agencies must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 adopted a desired level of protection with an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once every 100 years, although such a flood may occur in any given year. The 1968 Act made federally subsidized flood insurance available to property owners if their communities participate in the NFIP. A community establishes its eligibility to participate by:

- Adopting and enforcing floodplain management measures to regulate new construction; and
- Ensuring that substantial improvements within Special Flood Hazard Areas (SFHA) are designed to eliminate or minimize future flood damage.

An SFHA is an area within a floodplain having a 1-percent or greater chance of flood occurrence within any given year. SFHAs are delineated on flood hazard boundary maps issued by FEMA. The Flood Disaster Protection Act of 1973 and the National Flood Insurance Reform Act of 1994 make flood insurance mandatory for most properties in SFHAs. Executive Order 11988 Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to do the following:

- Avoid incompatible floodplain development;
- Be consistent with the standards and criteria of the NFIP; and
- Restore and preserve natural and beneficial floodplain values.

The National Flood Insurance Program (NFIP) is a program administered by FEMA to provide subsidized flood insurance for property owners in communities. The NFIP established regulations that limit development in flood-prone areas. The boundaries of flood-prone areas are demined by FEMA's Flood Insurance Rates Maps, which provide flood information and identify the flood hazard in the community. In certain high-risk areas, federally regulated or insured lenders require property owners to have flood insurance before issuing a mortgage.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969, which became Division 7 of the California Water Code (WC), authorized the SWRCB to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of the CWA Section 303, which states that water quality standards must be established for certain waters through the adoption of water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans within the regions, identifying water quality objectives, and instituting waste discharge requirements. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. Beneficial uses consist of all the various ways that water can be used for the benefit of people and wildlife. The Porter-Cologne Act was later amended to provide the authority delegated from the USEPA to issue NPDES permits regulating discharges to Waters of the United States.

Sustainable Groundwater Management Act of 2014

On September 16, 2014, a three-bill legislative package was signed into law, composed of AB 1739, SB 1168, and SB 1319, collectively known as the Sustainable Groundwater Management Act (SGMA). The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally". SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with the potential for state intervention, if necessary, to protect the resource. The act requires the formation of local GSA that must assess conditions in their local water basins and adopt locally based management plans. The groundwater basin that serves Fresno has been designated by the Department of Water Resources as high- priority and subject to a condition of critical overdraft.

California Streambed Alteration Agreement

FGC Sections 1600–1616 require that any entity that proposes an activity that would substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or, deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, must notify CDFW. The CDFW would require a Lake or Streambed Alteration Agreement if the Department determines that the alteration may adversely affect fish and wildlife resources. The Agreement includes conditions necessary to protect those resources. The Agreement applies to any stream, including ephemeral streams and desert washes.

Assembly Bill 746

In January 2018, Assembly Bill 746 went into effect requiring water utilities to collect lead samples in all daycare, preschool, and kindergarten through 12th grade schools on public property to ensure students have access to safe drinking water. If a private school wishes to have their water sampled, the head of the school may also request lead testing from their water provider.

Local

Fowler Municipal Code

Title 8 – Chapter 8: Floodplain Management – This chapter aims to reduce the risk of public or private loss or damage due to flooding by regulating the activities within flood prone, mudslide, or flood related areas. Restrictions are placed on the alteration of floodplains or streams, diversion of water through the construction of flood barriers, and certain development involving filling or grading which could increase flood damage.

Title 8 – Chapter 14: Grading Permit and Site Improvement Requirements – This chapter establishes the requirement of a permit for any excavation, construction, or earthwork activity, and promotes erosion control procedures to safeguard and protect water resources and related habitats. The goal of this chapter is to reduce the discharge of sediment into drainage and provide sediment management practices by regulating grading, site improvements, and related activities on private and public property.

Central Valley Regional Water Quality Control Board – Tulare Lake Basin Plan

Water quality control plans, or basin plans, contain California's administrative policies and procedures for protecting state waters. Basin plans are required by the WC Section 13240.¹⁰¹ In addition, CWA Section 303 requires states to adopt water quality standards that “consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.”

¹⁰¹ (California Regional Water Quality Control Board Central Valley Region 2018)

Basin plans are adopted and amended by regional water boards under a structured process involving full public participation and state environmental review. Basin plans and amendments do not become effective until approved by the SWRCB. Adoption or revision of surface water standards are subject to the approval of the USEPA before they become accepted standards for the federal program.

The first edition of this Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) was adopted by the California RWQCB, Central Valley Region, on 25 July 1975, and became effective following approval by the SWRCB in August 1975 and the USEPA in June 1976. The most recent revision was adopted in May 2018. The Fowler 2040 GP planning area is covered by the Tulare Lake Basin Plan.

Groundwater Sustainability Agencies

In 2014, legislation passed that provides a statewide framework for sustainable groundwater management in California (SB 1168, AB 1739, and SB 1319). This legislation, collectively referred to as the Sustainable Groundwater Management Act (SGMA), is intended to support local groundwater management through the oversight of local agencies. An overarching goal of SGMA is to achieve a sustainable groundwater balance in each basin or sub-basin by 2040.¹⁰² The Fowler 2040 GP planning area includes land in three different Groundwater Sustainability Agencies.

- South Kings Groundwater Sustainability Agency: SKGSA is comprised of five cities and two community services districts. These public entities formed a joint-powers authority (JPA) agreement in May 2017 to take on the responsibility of sustainable groundwater management in the portion of the Kings Subbasin underlying the GSA's boundary. The SKGSA is working cooperatively with stakeholders to develop and implement a GSP and is collaborating with other GSAs in the Kings Subbasin to work towards the ultimate goal of reaching regional and statewide groundwater sustainability by 2040.
- Central Kings Groundwater Sustainability Agency: CKGSA was formed on November 8, 2017. The Central Kings GSA's jurisdiction includes portions of the Kings Subbasin excluding the service areas of South Kings GSA. The many decades of groundwater recharge and ample canal space including the continued development of ponding basins, has made this portion of the Kings Basin in a very good position to become sustainable. Central Kings GSA Board of Directors adopted the Groundwater Sustainability plan in compliance with the Sustainable Groundwater Management Act on December 11, 2019.¹⁰³
- North Kings Groundwater Sustainability Agency: NKGSA was formed in December of 2016 through a JPA between Fresno Irrigation District, the County of Fresno, the City of Fresno, the City of Clovis, the City of Kerman, Biola Community Services District, Garfield Water District, and International Water District. Bakman Water Company and the Fresno Metropolitan Flood Control District were later added under separate agreements. In order to comply with SGMA, the NKGSA developed and has now started to implement the NKGSA GSP, which was adopted on January 28, 2020.¹⁰⁴

Central Valley Flood Protection Plan

The Central Valley Flood Protection Plan (CVFPP), first adopted in 2012 and updated every five years, was developed to better manage flood risk in the Central Valley using the following strategies:

- Prioritize the state's investment in flood management over the next three decades,
- Promote multi-benefit projects, and

¹⁰² (South Kings Groundwater Sustainability Agency 2022)

¹⁰³ (Central Kings Groundwater Sustainability Agency 2022)

¹⁰⁴ (North Kings Groundwater Sustainability Agency 2021)

- Integrate and improve ecosystem functions associated with flood risk reduction projects.

Following adoption of the initial CVFPP in 2012, the California Department of Water Resources (DWR) funded development of six Regional Flood Management Plans (RFMP) to address regional flood management goals and challenges. The planning area is not included in a RFMP because the risk of flood in the region is minimal. Fowler and the surrounding lands are not located within the 100-year, 200-year, or 500-year floodplains.¹⁰⁵

4.11.3 Methodology and Thresholds of Significance

Potential impacts involving water quality, drainage, discharge, and flow is regulated by the SWRCB. Fowler adheres to the guidelines set by the SWRCB and implements requirements to produce a SWPPP, a NDPEs, a CGP, and complete BMPs throughout projects within Fowler. In addition, Fowler can be found within the SKGSA and follows the Agency's goals and policies set forth within the South Kings GSP, the Central Kings GSP, and the North Kings GSP. The plan outlines the steps Fowler must take for reducing overdraft upon the groundwater supply in the Kings Groundwater Subbasin, as well as appropriate steps for groundwater projects, and general groundwater conditions throughout the boundaries of the Agency.

A significant impact could occur if the Project substantially degraded surface or ground water quality, interfered with groundwater recharge such that the Project would impede sustainable groundwater management of the basin, resulted in substantial erosion or siltation, resulted in a substantial increase of surface runoff causing flooding, exceeded capacity of an existing drainage system or substantially increased polluted runoff within one of these systems, impeded or redirected flood flows, resulted in the risk of pollutants to be released due to inundations in a flood hazard, tsunami, or seiche zone, or conflicted with a water quality control plan or sustainable groundwater management plan.

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to hydrology and water quality. The Fowler 2040 GP would have a significant impact if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious pavements, in a manner which would:
 - i. Result in substantial erosion or siltation on- or off-site;
 - ii. Substantially increase the rate or amount of surface runoff in a manner in which would result in flooding on- or off-site;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv. Impede or redirect flows.

¹⁰⁵ (California Department of Water Resources 2022)

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.11.4 Impacts

Threshold 1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact.

Construction

Construction activities facilitated by the Fowler 2040 GP could include road improvements and realignments, installation and realignment of utilities, demolition of existing structures for replacement, new development, and the potential replacement and/or improvement of drainage facilities. Construction activity could result in the alteration of existing drainage patterns and soil erosion due to earth-moving activities such as stockpiling, excavation and trenching for foundations and utilities, dredging, paving, soil compaction and moving, cut and fill activities, and grading. Disturbed soils would be susceptible to erosion from wind and rain, resulting in sediment transport via stormwater runoff from the construction sites. The types of pollutants contained in runoff from construction sites would be typical of urban and suburban areas, and may include sediments and contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported to downstream drainages and ultimately into collecting waterways, contributing to degradation of water quality.

Potential water quality impacts would be specific to individual construction locations. Local topography, the amount of soil disturbance, the duration that disturbed soil would be exposed, the amount of rainfall and wind that would occur during construction, and the proximity of the nearest water body all affect the potential for water quality degradation during construction.

Individual construction activities that disturb one or more acres would be subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Order No. 2012-0006-DWQ). Permit conditions require development of a SWPPP, which describes the site, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the Fowler Municipal Code (Title 8 – Chapter 14) and adherence to the Tulare Lake RWQCB Basin Plan¹⁰⁶. The water quality objectives of the Basin Plan are incorporated into individual NPDES permits authorized by the Central Valley RWQCB. Therefore, the project would not conflict with or obstruct implementation of a water quality control plan. Additionally, the following policies and action items of the Fowler 2040 GP, as listed below, require new development to protect water quality through site design, pollution prevention, storm water treatment, runoff reduction measures, BMPs, and LID strategies.

¹⁰⁶ (California Regional Water Quality Control Board Central Valley Region 2018)

Compliance with the regulations and policies discussed above would reduce the risk of water degradation within Fowler from soil erosion and other pollutants related to construction activities. Because violations of water quality standards would be minimized, impacts to water quality from construction activities facilitated by the Fowler 2040 GP would be **less than significant**.

Operation

Stormwater

Development facilitated by the Fowler 2040 GP would result in long-term alterations to drainage patterns in the planning area, such as changes in ground surface permeability due to new paving, and changes in topography due to grading and excavation. If uncontrolled, operation of future development facilitated by the Fowler 2040 GP could result in the addition of sediment and silt, and contaminants such as oil, grease, metals, and landscaping chemicals (pesticides, herbicides, fertilizers, etc.) into the City's stormwater drainage system. Such a discharge could be a potential violation of MS4 General Permit, depending on the pollutant and quantity discharged.

Future projects facilitated by the Fowler 2040 GP would be subject to the SWRCB Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), and the provisions set forth in the Post Construction Stormwater Management Program. The purpose of the MS4 permit is to implement and enforce BMPs to reduce the discharge of pollutants from municipal separate storm sewer systems, such as Fowler's storm drain system. To ensure compliance with the permit requirements and conditions of the MS4 General Permit, Fowler Municipal Code Chapter 8 outlines regulations regarding illicit discharge in Fowler's building regulations. Compliance with these requirements would also minimize erosion and siltation that could adversely affect water quality in the Planning Area.

Wastewater Discharge

In addition to stormwater runoff, polluted wastewater could be discharged by development facilitated by the Fowler 2040 GP. The buildout of Fowler in association with the Fowler 2040 GP would result in the expansion of wastewater facilities and an increase in the amount of influent required to be treated by the SKFCSD wastewater treatment facility. SKFCSD collects, treats, and disposes of wastewater originating from the residential, commercial, institutional, and industrial dischargers within the SKFCSD service area.¹⁰⁷ Most of the collection system is owned by the individual member cities but is maintained and operated by SKFCSD. The 2016 SKFCSD Collection System Master Plan Update identifies the existing wastewater collection system as well as the projected growth of the system through 2035. The anticipated growth would ultimately result in the expansion of the wastewater facility.

Drinking Water Quality

Any impacts to drinking water quality are expected to be mitigated through compliance with mandatory permitting requirements as well as the South Kings GSP, the Central Kings GSP, and the North Kings GSP.

In addition to compliance with mandatory CWA requirements (NPDES Construction General Permit and MS4 General Permit), Fowler Municipal Code requirements, and the Central Valley RWQCB's requirements for stormwater management, implementation of the following Fowler 2040 GP goals and policies would minimize erosion and siltation, prevent substantial discharges of contaminated stormwater to the municipal storm drain system or surface waters, and reduce the potential for violations of water quality standards or waste discharge requirements.

¹⁰⁷ (Selma-Kingsburg-Fowler County Sanitation District 2016)

Policy PF-17	Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.
Policy PF-18	Continue to cooperate with the Selma-Kingsburg-Fowler (SKF) County Sanitation District to design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.
Policy PF-19	Actively participate in the Selma-Kingsburg-Fowler (SKF) County Sanitation District wastewater master plan update proves to ensure it aligns with planned land uses and projected demands for the City of Fowler.
Policy PF-20	Design and construct stormwater system infrastructure as needed to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements.
Action Item PF-20a	Develop a storm drainage master plan which outlines necessary infrastructure improvements to the storm drainage system.

Compliance with federal and State laws and regulations and the Fowler 2040 GP policies and action items listed above would ensure that potential impacts related to drinking water quality are **less than significant**.

Threshold 2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant Impact. Development facilitated by the Fowler 2040 GP could potentially interfere with groundwater recharge through the creation of new impervious surfaces.

Implementation of the Fowler 2040 GP will increase the demand for water resources. The planning area contains lands within the SKGSA, the CKGSA, and the NKGSA and that are subject to the goals and policies set forth within the respective GSPs. The plans outline the steps Fowler must take for reducing overdraft upon the groundwater supply in the Kings Groundwater Subbasin, as well as appropriate steps for groundwater projects and general groundwater conditions throughout the boundaries of the plans.

For new developments and redevelopment projects, the amount of new impervious surfaces would be reduced through LID as directed by the following policies and actions items of the Fowler 2040 GP, which would reduce the impact groundwater recharge and redirects runoff such that it does not result in on- or off-site flooding. In addition, the following policies and action items would encourage groundwater infiltration and promote the use of recycled water and other water conservation efforts, minimizing the impact on groundwater aquifers.

Policy SAF-13	Conserve and, where feasible, create or restore areas providing water quality benefits such as undeveloped open space areas, basins, and drainage canals.
Policy SAF-15	Require new development to protect water quality through site design, pollution prevention, storm water treatment, runoff reduction measures, best management practices (BMPs), and Low Impact Development (LID) strategies.
Action Item SAF-15a	Review and revise, as appropriate, City standards to allow for LID strategies. Periodically review City standards to ensure innovative or new site design strategies which protect water quality are permitted, as appropriate.
Policy SAF-16	Require the use of native, drought tolerant, or low water use landscaping in both public and private development to reduce or eliminate the need for landscape irrigation.

Action Item SAF-16a	Review and revise, as necessary, the adopted water efficient landscape standards for consistency with the State Model Water Efficient Landscape Ordinance, as amended. As required, submit reports on the City's implementation of its landscape standards to the California Department of Water Resources and/or other agencies.
Action Item SAF-16b	Update City design standards to require residential developers to provide a no-turf landscape option that is priced the same as the standard landscape option.
Policy SAF-17	Promote programs to improve water efficiency in new and existing buildings.
Policy SAF-18	Explore the use of recycled water to irrigate landscape areas.
Action Item SAF-18a	Coordinate with Selma-Kingsburg-Fowler (SKF) County Sanitation District on what options are available to reuse recycled water.
Policy SAF-25	Encourage low-impact development by allowing for alternative stormwater management techniques including the provision of vegetated areas, infiltration trenches, and dry wells.
Action Item SAF-25a	Review and revise, as necessary, the Zoning Ordinance and other City standards to allow for low-impact stormwater management site design features.

Compliance with federal and State laws and regulations and the Fowler 2040 GP policies and action item listed above would ensure that potential impacts related to groundwater supplies and groundwater recharge are **less than significant**.

Further, the following Fowler 2040 GP action items and policy encourage low-impact stormwater management strategies, which includes low-impact development, are development practices that directly use or recreate natural stormwater processes. Low-impact development results in increased infiltration, evaporation, and use of stormwater. Such strategies may include features such as swales, among others.

Action Item PF- 20b	Require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100-year storm event.
Action Item PF- 20c	Require new development to include grading and erosion control plans prepared by a registered engineer or land surveyor.
Policy PF-21	Protect groundwater resources within the Planning Area. This includes protecting the occurrence of groundwater recharge, as well as the quality and quantity of available groundwater resources.

Compliance with federal and State laws and regulations and the Fowler 2040 GO action items PF-20b, PF-20c, and action item PF-21 listed above would ensure that potential impacts related to stormwater management strategies are **less than significant**.

Threshold 3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- **result in substantial erosion or siltation on- or off-site;**
- **substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**

- **create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;**
or
- **impede or redirect flood flows?**

Less than Significant Impact.

Construction

Construction activities facilitated by the Fowler 2040 GP could include road improvements and realignments, installation and realignment of utilities, demolition of existing structures for replacement, new development, and the potential replacement and/or improvement of drainage facilities. Construction activity could result in the alteration of existing drainage patterns and soil erosion due to earth-moving activities such as stockpiling, excavation and trenching for foundations and utilities, dredging, paving, soil compaction and moving, cut and fill activities, and grading. Disturbed soils would be susceptible to erosion from wind and rain, resulting in sediment transport via stormwater runoff from the construction sites.

Individual construction activities that disturb one acre or more would be subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Order No. 2012-0006-DWQ). Permit conditions require development of a SWPPP, which describes the site, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the Fowler Municipal Code (Title 8 – Chapter 14).

Additionally, Fowler 2040 GP policies PF-17, PF-18, PF-19, PF-20, SAF-13, and SAF-15 and action items PF-20a and SAF-15a, as outlined under Threshold 1 and Threshold 2 above, require new development to protect water quality through site design, pollution prevention, storm water treatment, runoff reduction measures, BMPs, and LID strategies.

Compliance with the regulations and policies listed above would reduce the risk of water degradation within Fowler from soil erosion and other pollutants related to construction activities. Because violations of water quality standards would be minimized, impacts to water quality from construction activities facilitated by the Fowler 2040 GP would be **less than significant**.

Operation

Stormwater

Development facilitated by the Fowler 2040 GP would result in long-term alterations to drainage patterns in the planning area, such as changes in ground surface permeability due to new paving, and changes in topography due to grading and excavation. If uncontrolled, operation of future development facilitated by the Fowler 2040 GP could result in the addition of sediment and silt, and contaminants such as oil, grease, metals, and landscaping chemicals (pesticides, herbicides, fertilizers, etc.) into the City's stormwater drainage system. Such a discharge could be a potential violation of MS4 General Permit, depending on the pollutant and quantity discharged.

Future projects facilitated by the Fowler 2040 GP would be subject to the SWRCB Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), and the

provisions set forth in the Post Construction Stormwater Management Program. The purpose of the MS4 permit is to implement and enforce BMPs to reduce the discharge of pollutants from municipal separate storm sewer systems, such as Fowler’s storm drain system. To ensure compliance with the permit requirements and conditions of the MS4 General Permit, Fowler Municipal Code Chapter 8 outlines regulations regarding illicit discharge in Fowler’s building regulations. Compliance with these requirements would also minimize erosion and siltation that could adversely affect water quality in the planning area.

In addition to compliance with mandatory CWA requirements (NPDES Construction General Permit and MS4 General Permit), Fowler Municipal Code requirements, and the Central Valley RWQCB’s requirements for stormwater management, implementation of the following Fowler 2040 GP goals and policies would minimize erosion and siltation, prevent substantial discharges of stormwater to the municipal storm drain system, and reduce the potential for violations of waste discharge requirements.

Compliance with federal and State laws and regulations and the Fowler 2040 GP policies PF-17, PF-18, PF-19, PF-20, SAF-13, and SAF-15 and action items PF-20a and SAF-15a outlined under Threshold 1 and Threshold 2 above would ensure that potential impacts related to stormwater operations are **less than significant**.

Threshold 4: Would the project result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundations?

No Impact. Fowler is located in California’s Central Valley, and is therefore not located in a tsunami or seiche zone. Development within the planning area would not risk release of pollutants due to tsunami or seiche inundation. As shown in **Figure 4-11**, portions of the planning area would be subject to a 100-year flood zone, though no areas fall within a 200-year or 500-year flood zone. The 100-year flood zone includes a residential area on the north end of Fowler and an agricultural area farther north running parallel to Golden State Boulevard, as well as a small area in the southern portion of the planning area. Development in these areas could be subject to flood hazards and/or could impede or redirect flood flows to adjacent areas. Compliance with the applicable proposed policies in the Fowler 2040 GP, including SAF-19 – 25, would minimize exposure to flood hazards. These policies include requirements and provisions for reducing losses from flooding, including construction standards to minimize flood risks associated with new development. Specific requirements and provisions for construction in flood-prone areas include practices such evaluating flood hazards prior to development approval and community outreach.

Required compliance with SAF-19, SAF-20, SAF-21, SAF-22, SAF-23, SAF-24, SAF-25 and Action Item SAF-25a as outlined above, would minimize impacts related to flooding and flood hazards to a less than significant level.

Threshold 5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

See analysis for a) and b) above.

4.11.5 Mitigation Measures

Mitigation measures are not required.

4.11.6 Cumulative Impacts

The analysis in this section examines impacts from the Fowler 2040 GP on hydrology and water quality throughout the cumulative impact analysis area and is cumulative in nature. Some types of hydrologic

impacts are localized and not cumulative in nature. For example, effects to flood zones and exposure of people to a significant risk of loss, injury, or death involving flooding (including flooding as a result of the failure of a levee or dam), seiche, or tsunami are typically independent and the determination as to whether they are adverse is specific to the project and location where they are created.

Some types of impacts to hydrology and water quality that may be additive in nature, and thus cumulative, include violation of water quality standards, interference with groundwater recharge, increased erosion, increased non-point source pollution, and increased runoff. Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and ground water quality. Cumulative development would also increase the amount of impervious surfaces, potentially reducing groundwater recharge. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term.

Development of individual projects in the planning area would be required to comply with applicable water quality regulations, as discussed above. Compliance with these existing requirements would reduce impacts associated with pollutants discharged during construction and operation of project and adverse changes to water quality throughout the cumulative impact area. Therefore, cumulative impacts related to water quality would be less than significant.

Development of individual projects throughout the cumulative impact area would increase impervious surfaces and reduce groundwater recharge in the planning area, but compliance with applicable policies related to impervious surfaces as well as following SKGSA's, CKGSA's, and NKGSA's goals and policies set forth within the respective GSPs would reduce impacts throughout the cumulative impact area. Similarly, compliance with applicable laws and regulations would minimize the potential for flooding from alteration to the drainage patterns, flood hazards, tsunamis, and seiches. Therefore, cumulative impacts related to groundwater recharge, changing drainage patterns, and flooding would be less than significant.

Figure 4-9: Groundwater Sustainability Agencies Within Planning Area

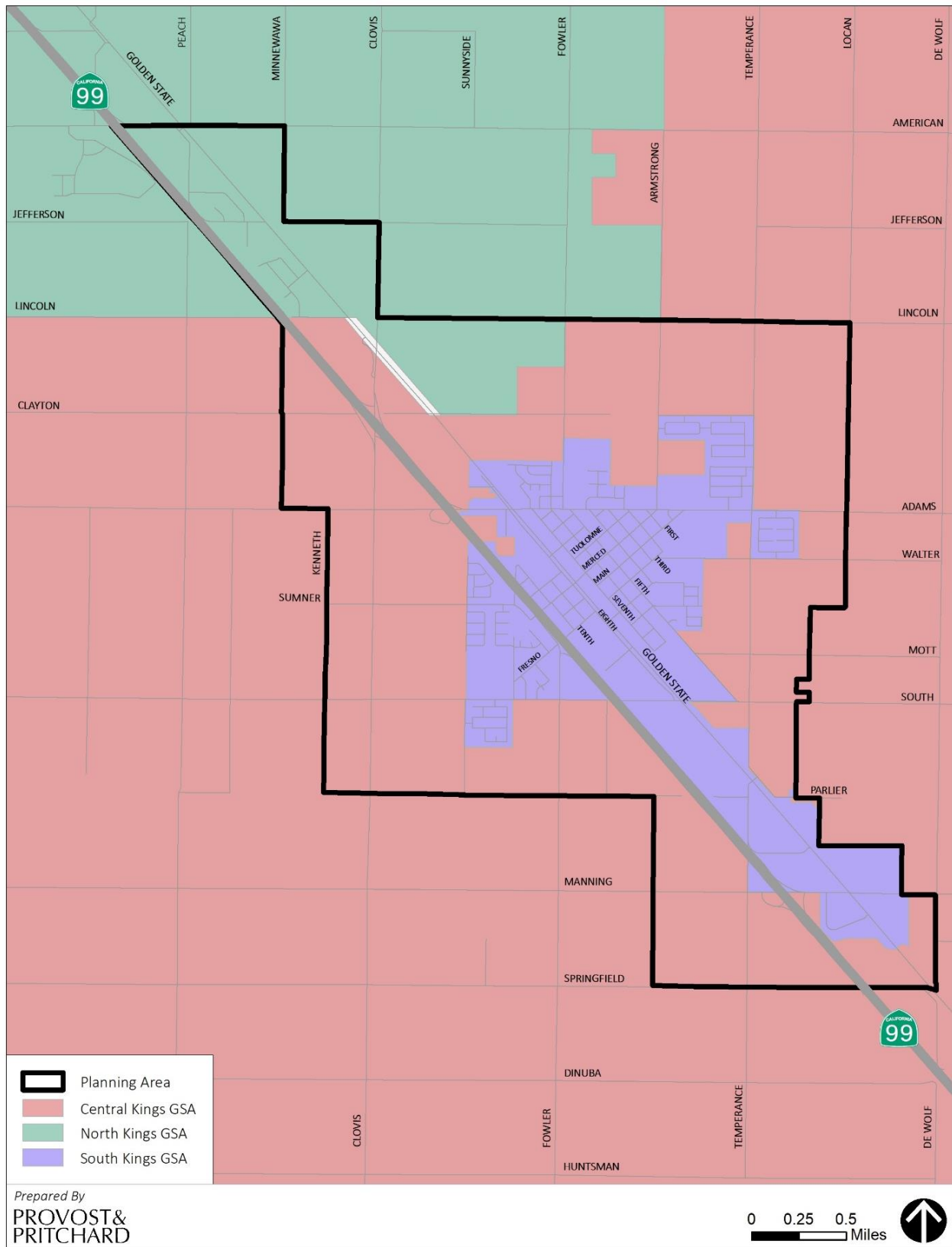


Figure 4-10: Stormwater System Facilities

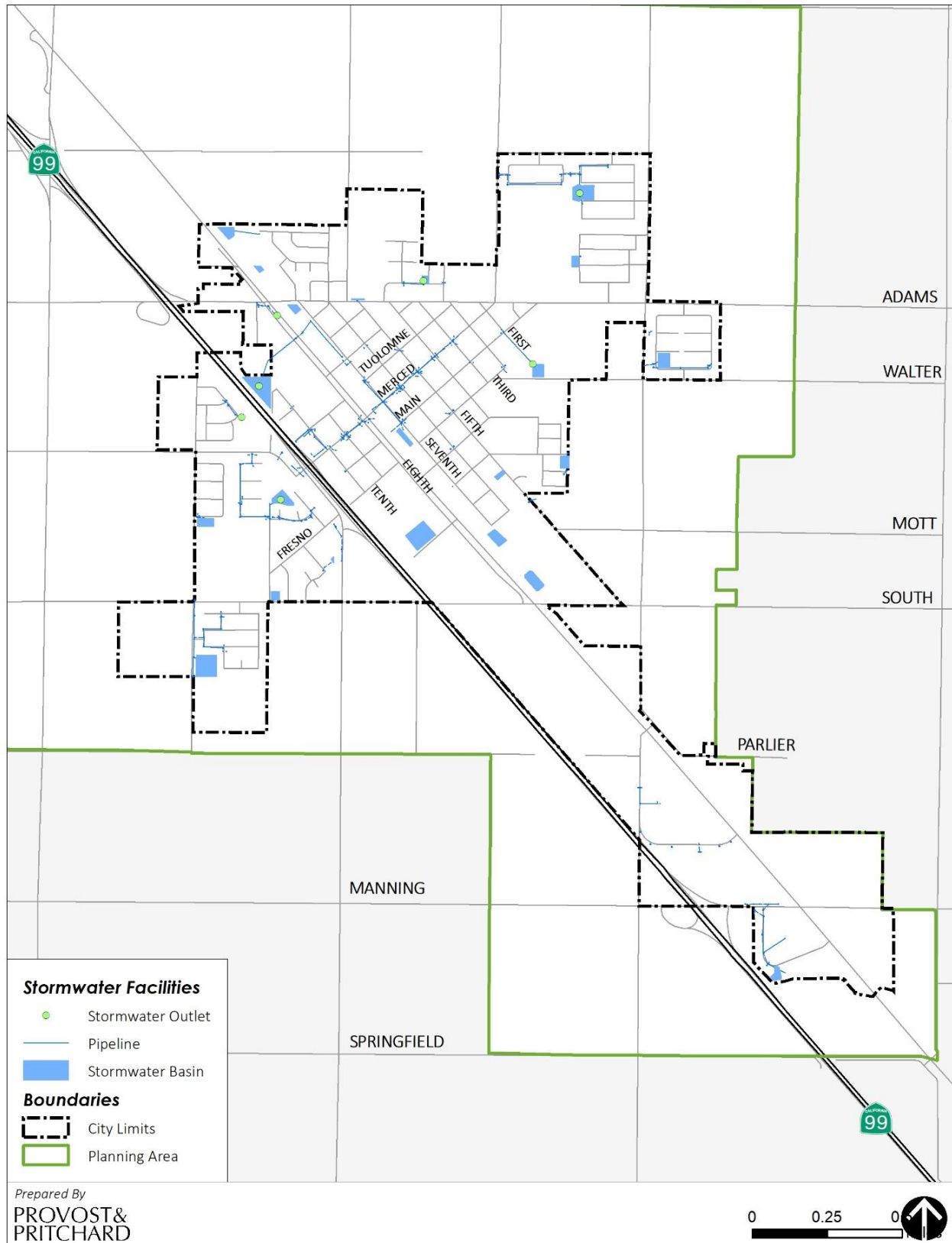
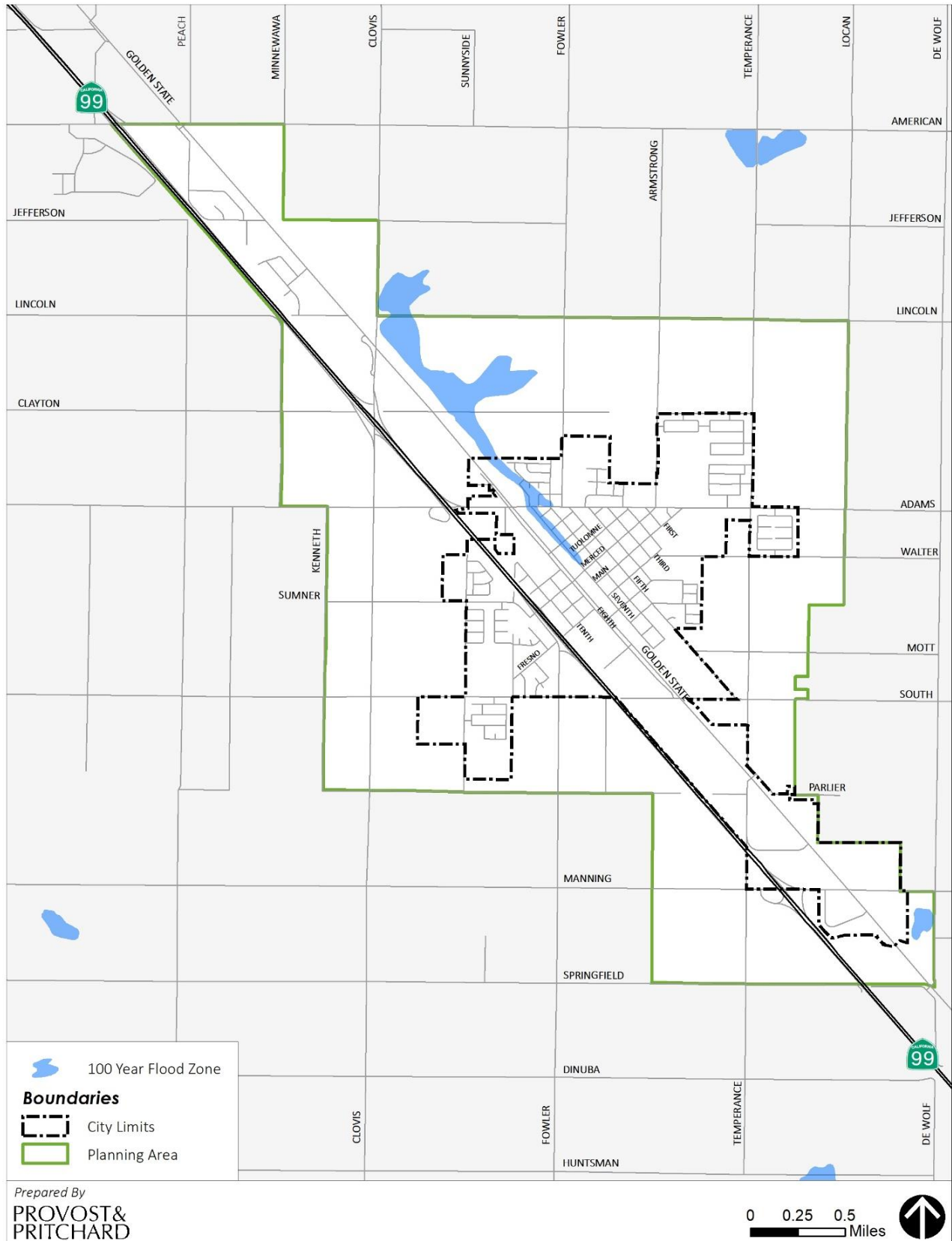


Figure 4-11: Flood Zones (100-Year and 200-Year)



4.12 Land Use and Planning

This section evaluates impacts that could result from implementation of the Fowler 2040 GP to land use characteristics, including the overall land use patterns, contains a more detailed analysis by major land use types, and analyzes existing plans and focus areas with development potential.

4.12.1 Environmental Baseline

Existing Land Use

Fowler is located approximately 11 miles southeast of downtown Fresno. SR 99 bisects Fowler into eastern and western halves, with the downtown area of Fowler located to the east of SR 99 and Golden State Boulevard. The downtown area is generally centrally located where many commercial and governmental activities occur, with residential neighborhoods surrounding. The southeastern portion of Fowler is comprised of industrial and commercial buildings, while the northwestern extension of Fowler is exclusively comprised of industrial use buildings. Residential neighborhoods expand out from the city center with the higher density housing options being found closer to the center, while medium and low-density housing is located nearer to the edges of Fowler. The edges of the planning area are composed of land that is used for agriculture. Most public facilities in Fowler can be found in the northeast part of Fowler.

Agriculture makes up a significant portion of the existing land use within the planning area at 63.9 percent. Residential uses occupy approximately 10 percent of the planning area, while commercial and office uses occupy just 2.7 percent. Industrial uses make up 9.4 percent and public uses, such as churches, government facilities, schools, and other utilities, occupy an additional 5 percent. The remaining 9 percent comprises vacant land and right-of-way. Existing land uses are listed in [Table 4-25](#) on the next page.

Table 4-25: Existing Land Uses

Existing Land Use	City Limits Acres (%)	Planning Area ^a Acres (%)
Residential Uses	378 (30.8%)	442 (9.9%)
Commercial and Office Uses	69 (5.6%)	123 (2.7%)
Industrial Uses	224 (18.2%)	421 (9.4%)
Public/Quasi-Public and Institutional Uses	191 (15.6%)	221 (5%)
Agriculture	97 (7.9%)	2849 (63.9%)
Vacant and Right-of-Way	270 (22%)	402 (9%)
TOTAL	1229	4458

^a Includes acreage in City limits, SOI, and Expansion Area

Table 4-26: Fowler 2040 GP Land Use Acreage

Land Use Designation	Total Acreage (%) ^{a,b}
Low Density Residential	790 (16.5%)
Medium Low Residential	937 (18.9%)
Medium Residential	733 (14.7%)
Medium High Residential	203 (4.1%)
High Residential	83 (1.7%)
Residential Subtotal	2,746 (55%)
Neighborhood Commercial	28 (0.6%)
Community Commercial	104 (2.1%)
General Commercial	210 (4.2%)
Commercial Subtotal	342 (6.9%)
Light Industrial	598 (12%)

Land Use Designation	Total Acreage (%) ^{a,b}
Heavy Industrial	1,105 (22.2%)
Industrial Subtotal	1,703 (34.3%)
Parks/Open Space	55 (1.1 %)
Public Facilities	123 (2.5%)
Open Space Subtotal	178 (3.6%)
Total	4,970^c

^a Acreage is for Fowler 2040 GP planning area.

^b Excludes Public Right of Way

^c The total may differ from the sum due to rounding.

4.12.2 Regulatory Setting

Federal

There are no federal regulations, plans, programs, or guidelines associated with land use that are applicable to the Project.

State

General Plan Law

GC Section 65300, et seq., regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning.” The California Supreme Court has called the general plan the “constitution for future development.” The general plan expresses the community’s development goals and embodies public policy relative to the distribution of future land uses, both public and private.

Cortese Knox Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH Act; GC Section 56000, et seq.) is the most significant reform to local government reorganization law since the 1963 statute that created a LAFCo in each county. The law established procedures for local government changes of organization, including city or town incorporation, annexation to a city, town, or special district, and consolidation of towns, cities, or special districts. LAFCOs have numerous powers under the CKH Act, but those of prime concern are the power to act on local agency boundary changes and to adopt SOIs for local agencies. The law also states that to update an SOI, LAFCOs are required to first conduct a review of the municipal services provided in the county.

While LAFCo does not have any direct land use authority, the CKH Act assigns LAFCOs a significant role in planning issues by requiring them to consider a wide range of land use and growth factors when they consider proposals. GC Section 56001 specifically states that “the logical formation and determination of local agency boundaries is an important factor in promoting orderly development and in balancing that development with sometimes competing State interests of discouraging urban sprawl, preserving open space and prime agricultural lands, [and] efficiently extending government services.”

Local

Fowler Zoning Ordinance

Zoning is the primary tool used to implement a community’s general plan. A major difference between a general plan and zoning ordinance is that the general plan provides general guidance on the location, type, and density of new growth and development over the long term, while the zoning ordinance provides detailed development and use standards for each parcel of land. The zoning ordinance divides the

community into zoning districts and specifies the uses that are permitted, conditionally permitted, and in some instances, which uses are specifically prohibited within each district.

Typically, a zoning ordinance consists of text and a map delineating districts for such basic land uses as residential, commercial, and industrial, and establishing special regulations for historic preservation, floodplains, hillside development, and other specific concerns. For each of the basic land uses, the zoning ordinance text typically includes an explanation of the purpose of the zoning district; a list of principal permitted and conditionally permitted uses; and standards for minimum lot size, density, height, lot coverage, setback, and parking. The zoning ordinance also typically describes procedures for processing discretionary approvals.

4.12.3 Methodology and Thresholds of Significance

The analysis in this section focuses on the compatibility of land uses identified in the Fowler 2040 GP with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental impacts. This section also analyzes whether development facilitated by the Fowler 2040 GP or its policies would physically divide the community or conflict with an existing plan or policy aimed at reducing the environmental impact of development.

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to land use and planning. The Fowler 2040 GP would have a significant impact if it would:

- Physically divide an established community.
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.12.4 Impacts

Threshold 1: Would the project physically divide an established community?

Less than Significant Impact. The Fowler 2040 GP would not create a physical division within an established community. A physical divide in the community could result from the construction of a freeway/highway, a water drainage or conveyance facility, or an undesirable land use such as a waste facility. The land plan associated with the Fowler 2040 GP does not propose the construction of any of the aforementioned facilities, or a similar facility, that would create a physical divide within an existing community which would limit access to the community. SR 99 currently bisects Fowler, creating eastern and western areas of the City. Full buildout of the Fowler 2040 GP would result in the construction of residential and commercial land uses on both sides of SR 99. Implementation of the proposed Project would maintain existing connections across SR 99 and would result in development patterns that enhance residents' access to services and facilities.

Threshold 2: Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The Fowler 2040 GP would not cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect. Buildout of the Fowler 2040 GP would be required to meet all applicable federal, State, and local standards and regulations. In addition, any future development within Fowler would be required to be consistent with the City's Zoning Ordinance, which would regulate intensity and density of land uses, as well as ensure that individual projects evaluate compatibility with surrounding uses. Also, any future development would be required to meet all applicable SJVAPCD regulations governing air quality within the plan area as discussed in [Section 4.4](#). Lands that are annexed into Fowler and its

planning area could be located within the Selma Airport safety zones identified in the ALUCP (see [Table 4-24](#)). Future development projects within the established airport safety zones would be subject to review for compatibility by the Fresno County ALUC. The planned land uses within the planning area are not expected to conflict with the airport safety zones for the Selma Airport.

Implementation of the Fowler 2040 GP would replace the existing goals and policies of the 2025 General Plan, including the Land Use Element and Land Use Diagram. Therefore, the Fowler 2040 GP would not be inconsistent with the existing land use plan and the impact would be less than significant.

4.12.5 Mitigation Measures

Mitigation measures are not required.

4.12.6 Cumulative Impacts

The Fowler 2040 GP creates a land use plan for the logical development and buildout of the entire planning area of Fowler. It does not propose any linear infrastructure such as a freeway or a similar physical barrier that would physically divide a community, and thus would not contribute to any cumulative effects in that regard. In addition, all development projects completed under the Fowler 2040 GP would be required to adhere to all applicable land use plans, policies, and regulations aimed at the avoidance or mitigation of an environmental effect. As a result, there would be no cumulative impacts due to a conflict with these policies. Therefore, cumulative impacts associated with land use and planning would be considered less than significant.

4.13 Mineral Resources

This section evaluates potential impacts to mineral resources that could result from implementation of the Fowler 2040 GP.

4.13.1 Environmental Baseline

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the County. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). Mineral Resource Locations, in the General Plan Background Report illustrates the general distribution of minerals throughout the County. However, the CGS (formerly the CDMG) has not performed a comprehensive survey of all potential mineral resource locations or classified other locations within the County into MRZ. For the period 1994-95, there were 18 active mines and mineral producers in Fresno County. Aggregate and petroleum are considered the County's most significant extractive mineral resources. No active or inactive mines are mapped in the planning area according to the California Office of Mine Reclamation Mines Online website.¹⁰⁸

4.13.2 Regulatory Setting

Federal

United States Department of the Interior's Minerals Availability System

Identifies between 15 and 17 rare Earth minerals as critical resources for United States Department of Defense applications or resources which are critical to national security. It recommends the development of a comprehensive approach to help ensure a secure supply of each resource and identifies risks as well as timeframes for actions.

State

Surface Mining and Reclamation Act

The California Surface and Reclamation Act (SMARA) was enacted in 1975 and provides guidelines for the classification and designation of mineral lands. Areas are classified on the basis of geologic factors without regard to existing land use and land ownership. The areas are categorized into four MRZs:

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits, the significance of which cannot be evaluated.
- **MRZ-4:** An area where available information is inadequate for assignment to any other MRZ zone.

Of the four categories, lands classified as MRZ-2 are of the greatest importance. Such areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the CGS as being "regionally significant." Such designations require that a Lead Agency's land use decisions involving designated areas are to be

¹⁰⁸ (California Department of Conservation 2022)

made in accordance with its mineral resource management policies and that it considers the importance of the mineral resource to the region or the State as a whole, not just to the Lead Agency's jurisdiction.

The planning area is designated as Mineral Resource Zone 3 (MRZ-3), which means that this is an area containing mineral deposits, the significance of which cannot be evaluated from available data.¹⁰⁹ The planning area is in the Fresno Production-Consumption Region, which spans much of central Fresno County and most of the west half of Madera County. The nearest areas to the planning area that are designated MRZ-2, which means significant mineral resources are known or very likely, are the San Joaquin River Resource Area, 18 miles north of the Plan Area, and the Kings River Resource Area, 9 miles southeast of the Plan Area.¹¹⁰

4.13.3 Methodology and Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to mineral resources. The Fowler 2040 GP could have a significant impact if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.13.4 Impacts

Threshold 1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Threshold 2: Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Less than Significant Impact. Based on the County of Fresno GP Background Report and the mineral land classification maps maintained by the CGS, Fowler is considered to be located within an MRZ-3 area. MRZ-3 areas are those that contain mineral resources, but the significance of those resources cannot be determined. The Fowler 2040 GP would not result in the loss of availability of known mineral resources in the planning area. Based on a review of GIS data and the mineral land classification map prepared by the State CGS, there are no existing mineral extraction operations in Fowler. The State Geologist has not designated a mineral resource area of statewide or regional significance in Fowler pursuant to PRC Section 2710, et seq.

4.13.5 Mitigation Measures

Mitigation measures are not required.

4.13.6 Cumulative Impacts

As discussed above, the planning area does not contain any known mineral resources aside from aggregate materials that can be found throughout Fresno County, the loss which would not cause a significant impact to mineral resources. The City is located within an MRZ-3 area. These areas contain mineral resources, however, the significance of these resources is unknown. The loss of mineral resources would be considered on a case-by-case basis as development occurs through the buildout of the 2040 General Plan.

¹⁰⁹ (Fresno County 2000)

¹¹⁰ (California Division of Mines and Geology 1999)

Buildout of the 2040 General Plan would not result in the conflict or obstruction of a State or local plan or ordinance in place to minimize the impacts to mineral resources. As a result, cumulative impacts would be less than significant.

4.14 Noise

This section evaluates the impacts due to excessive noise and ground borne vibrations resulting from implementation of the Fowler 2040 GP.

4.14.1 Environmental Baseline

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as "A-weighted decibels" (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in .

Figure 4-12: Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft)</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u>
<u>Commercial Area</u>		<u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	
<u>Quiet Urban Daytime</u>	50	<u>Large Business Office</u>
		<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	40	<u>Theater, Large Conference Room (Background)</u>
<u>Quiet Suburban Nighttime</u>		
	30	<u>Library</u>
<u>Quiet Rural Nighttime</u>		<u>Bedroom at Night,</u>
	20	<u>Concert Hall (Background)</u>
		<u>Broadcast/Recording Studio</u>
	10	
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior

noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies, and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in [Table 4-27](#).

**Table 4-27: Federal Interagency Committee on Noise
Recommended Criteria for Evaluation of Increases in Ambient Noise Levels**

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

Source: FICON 2000

As depicted in [Table 4-27](#), an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance. These criteria are commonly applied for analysis of environmental noise impacts. ([Appendix H](#))

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as libraries, places of worship, and recreation areas are also considered noise-sensitive land uses.

Noise-sensitive land uses within Fowler consist predominantly of residential land uses. Other noise-sensitive land uses located within Fowler include schools, places of worship, and community parks.

Existing Noise Environment

Short-term (10-minute) noise level measurements were conducted on March 24, 2021 for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Measurement locations were selected near major noise sources located in the vicinity of proposed focus areas and other locations within the community.

Measured daytime noise levels along area roadways ranged from approximately 47.6 to 62.5 dBA equivalent sound level (L_{eq}). In general, nighttime noise levels are typically 5-10 dB lower than daytime noise levels. Ambient noise levels are largely influenced by vehicle traffic on area roadways. To a lesser extent, aircraft overflights and other noise sources within the community (e.g., landscaping, industrial activities, construction activities) also contribute to the ambient noise environment. Ambient noise measurement locations and corresponding measured average-hourly noise levels (in dBA L_{eq}) are summarized in [Table 4-28](#). Noise measurement locations are depicted in [Figure 4-13](#).

Table 4-28: Summary of Measured Ambient Noise Levels

	Location	Monitoring Period	Primary Noise Sources	Noise Level (dBA) L_{eq}
1	355 North Jonna Avenue	9:53 - 10:03	Birds, Background Traffic	47.6
2	800 Block East Adams Avenue	10:08 - 10:18	Traffic, Reverse Beeps	62.5
3	Panzak Park	10:27 - 10:37	Traffic, Birds	52.3
4	229 South 3rd Street	10:43 - 10:53	Traffic, Birds, Bus Idle	54.0
5	1540 East Sumner Avenue	11:00 - 11:10	Birds, Dog	48.4
6	519 South 7th Street	11:16 - 11:26	Birds, Industrial Fans	54.3
7	106 East Main Street	11: 34 - 11:44	Traffic	54.7
8	314 North 5th Street	11:50 - 12:00	Birds, Background Traffic	49.9

	Location	Monitoring Period	Primary Noise Sources	Noise Level (dBA) L_{eq}
9	81 Carter Avenue	12:06 - 12:16	Birds, Background Traffic	47.9
10	Valley Children's Park	12:56 - 13:06	Traffic	55.5
11	1362 East South Avenue	13:14 - 13:24	Industrial Fans, Speaker	60.8
12	East Valley Drive	13:45 - 13:55	Traffic, Forklift	54.8
13	1122 West Jameson Avenue	14:06 - 14:16	Traffic, Birds	58.9
14	Donny Wright Park	14:31 - 14:41	Traffic, Birds, Train Horn, People	59.7
15	Sandy Avenue/Clara Court	14:51 - 15:01	Background Traffic	48.0

Noise measurements were conducted on March 24, 2021. Refer to Figure 4-13 for noise measurement locations.

Noise Sources

Roadway Vehicular Traffic

Noise from vehicular traffic on area roadways is a primarily source of ambient noise in the City. Major sources of noise include the SR99 and Golden State Boulevard.

Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Noise Prediction Model (FHWA RD-77-108) based on average-daily traffic (ADT) volumes obtained from the traffic analysis prepared for this project.¹¹¹ Predicted traffic noise levels and distances to projected traffic noise contours for major roadways are summarized in [Table 4-30](#). Based on the modeling conducted, existing traffic noise levels along area roadways range from approximately 56 to 79 dBA CNEL at 50 feet from the near-travel-lane centerline. The primary generator of traffic noise within Fowler is SR99. Existing traffic noise levels at 50 feet from the near-travel-lane centerline of SR99 are approximately 79 dBA CNEL.

Railroad Traffic

The Union Pacific Railroad (UPRR) runs northwest-southeast through the City, adjacent to Golden State Boulevard. Depending on freight demand, approximately 22 to 35 freight trains pass through Fowler on a daily basis.

Existing train noise levels and distance to noise contours are summarized in [Table 4-29](#). Based on a conservative estimate of 35 trains per day, average-daily noise levels along the railroad corridor could reach levels of approximately 79 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses.

Table 4-29: Existing Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Rail Corridor Centerline	Distance to CNEL Contours (feet) from Rail Corridor Centerline		
			70	65	60
UPRR Freight	35	79	263	468	830

UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Predicted noise contours do not include shielding by intervening structures.

Major Surface Transportation Noise Contours

Major surface transportation noise sources in Fowler include SR 99 and the UPRR, which parallels SR 99 to the east in a general northwest to southeast direction. Vehicle traffic along Golden State Boulevard also contribute to projected noise contours along this same general corridor. Combined existing noise contours for these surface transportation noise sources are depicted in [Figure 4-14](#), [Figure 4-15](#), and [Figure 4-16](#).

¹¹¹ (Kittlerson & Associates 2022)

Table 4-30: Existing Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
American Ave, SR-99 to Golden State Blvd	4,238	64.3	WR	50.4	108
Adams Ave, SR-99 to Golden State Blvd	4,539	63.2	WR	WR	95
Adams Ave, Golden State Blvd to 7th St	4,247	58.6	WR	WR	WR
Adams Ave, East of 5th St	3,412	57.6	WR	WR	WR
Adams Ave, Armstrong Ave to Temperance Ave	3,667	57.4	WR	WR	WR
Adams Ave, Temperance Ave to Locan Ave	2,685	56.5	WR	WR	WR
Sumner Ave, Sunnyside Ave to Merced St	3,108	58.9	WR	WR	WR
Manning Ave, W of 99 SB Ramps	5,802	64.5	WR	52.1	111.5
Manning Ave, E of 99 NB Ramps	21,738	68.4	64.9	127.9	269.6
Manning Ave, E of Golden State	16,414	67.2	WR	107.3	224.2
Clovis Ave, S of Lincoln Ave	15,876	68.6	60.5	122.6	260.5
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	16,736	68.5	64.5	127.9	270.1
Clovis Ave, SR 99 SB off to Adams Ave	4,513	64.6	WR	52.5	112.6
Clovis Ave, Adams Ave to Summer Ave	3,904	64.0	WR	WR	102.2
Clovis Ave, Summer Ave to South	3,428	63.4	WR	WR	93.8
Clovis Ave, South Ave to Parlier Ave	3,163	63.0	WR	WR	88.9
S Fowler Ave, Merced St. to Fresno St.	7,448	64.3	WR	50.6	108.4
S Fowler Ave, Fresno St. to South Ave.	4,607	63.5	WR	WR	95.7
S Fowler Ave, South Ave to Parlier Ave	3,596	63.6	WR	WR	96.8
Golden State Blvd, American Ave to Lincoln Ave	6,584	65.7	WR	103.1	205.3
Golden State Blvd, Lincoln Ave to Clayton Ave	5,525	65.7	WR	103.1	205.3
Golden State Blvd, Clayton Ave to Adams Ave	5,509	65.7	WR	102.9	205.9
Golden State Blvd, Adams Ave to Merced St.	6,084	65.7	WR	102.9	204.9
Golden State Blvd, Merced St. to South Ave	8,524	65.9	WR	101.7	205.1
Golden State Blvd, South Ave to Temperance Ave	8,846	66.1	WR	103.7	210
Golden State Blvd, Temperance Ave to Valley Dr	10,058	66.7	WR	111.6	228.1
Golden State Blvd, Valley Dr of Manning Ave	9,065	66.2	WR	105.1	213.3
Golden State Blvd, Manning Ave to Springfield Ave	10,722	65.9	WR	100.8	203.4
Merced St, 10th St to 9th St	11,840	64.6	WR	55.8	118.9
Merced St, 9th St to 8th St	10,944	64.2	WR	53.1	112.9
Merced St, 7th St to 6th St	4,172	60.4	WR	WR	59.5
Merced St, 6th St to 5th St	3,665	59.8	WR	WR	54.6
SR-99, South of Merced St	94,000	82.4	509	1,094	2,355
SR-99, Merced St to Adams Ave	97,000	82.6	519	1,117	2,405
SR-99, Adams Ave to Clovis Ave	99,000	82.6	526	1,132	2,438

Traffic noise levels for area roadways were calculated based on data obtained from the traffic analysis prepared for this project. Does not include shielding provided by intervening terrain or structures.

Projected roadway traffic noise contours for SR-99 are depicted in **Figure 4-14, Figure 4-15, and Figure 4-16.**

WR = Contour is located within road right-of-way

Source: Kittelson & Associates 2022

Non-Transportation Sources

Within the Fowler, major non-transportation noise sources consist predominantly of industrial and commercial land uses. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and State employee health and safety regulations (i.e., regulations OSHA and Cal/OSHA). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public

facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. In addition, noise generation from fixed noise sources may vary based upon climate conditions, time of day, and existing ambient noise levels.

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include mitigation measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

The following discussions of existing non-transportation noise sources in the community are intended to be representative of the sources and relative noise levels associated with such uses. The average-hourly noise levels (in dBA L_{eq}) discussed for these sources provide an indication of the noise levels that can generally be expected to occur over an extended period of time. The L_{eq} noise levels do not necessarily reflect possible intermittent high noise levels associated with the various uses but are useful for general planning purposes. Actual noise levels at nearby noise-sensitive receptors will likely vary from one day to the next depending on the operational characteristics of the facility, meteorological conditions, and the physical landscape.

Non-transportation noise sources within Fowler consist predominantly of commercial and industrial uses. To a somewhat lesser extent, other non-transportation noise sources would also include automotive/equipment repair and maintenance facilities, and construction activities. Noise levels associated with some of the more common non-transportation noise sources located throughout the community are discussed in more detail, as follows:

Commercial and Industrial Uses

Within the Fowler planning area, commercial and industrial land uses are located primarily along major roadway and railway corridors. Noise sources commonly associated with these land uses include truck traffic, loading dock activities, heavy-equipment operation, and building mechanical systems. Major industrial and commercial operations within the community include metal and glass recycling centers, trucking distribution centers, and food and agricultural products processing. Various other activities, such as and loading dock activities, can result in temporary or intermittent increases in ambient noise levels. In general, noise levels associated with these uses can range from approximately 55 to 85 dBA L_{eq} at 50 feet.

Noise levels associated with commercial and industrial land uses can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors will likely vary depending on the above mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. For this reason, noise generated by commercial and industrial uses and impacts to nearby noise-sensitive land uses should be evaluated on a project-by-project and site-specific basis.

Landscape Maintenance

Landscape maintenance activities often result in sporadic and intermittent increases in ambient noise levels. Equipment used for landscape maintenance often include the use of power mowers and leaf blowers. Leaf blowers and gasoline-powered lawn mowers can result in intermittent noise levels of up to

approximately 100 dBA at 3 feet.¹¹² Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA L_{max} at 50 feet. The use of leaf blowers, particularly when used during the more noise-sensitive evening and nighttime hours, may result in increased levels of annoyance.

Automotive Maintenance & Repair

Typical automotive maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches, etc.), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at 3 feet. The use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA at 3 feet (USEPA 1971). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics.

Building Mechanical Systems

The majority of electrical and mechanical equipment in buildings is used for air circulation systems. Mechanical systems may also include pumping systems, elevators and escalators, and various other material conveyance systems. Much of this equipment is located in mechanical equipment rooms or in areas that provide shielding from direct public/personnel exposure (i.e., above ceilings, in walls, or behind enclosures.) Equipment located within exterior areas can result in increases in ambient noise levels, particularly when located in unshielded areas and within line-of-sight of nearby receptors. Such equipment would include air-conditioning units, cooling towers, compressors, fans/turbines, electrical transformers, chillers, and pumps. Noise levels associated with these sources can vary depending on the specific equipment being operated, facility/equipment design, and operational characteristics. Typical noise levels associated with building mechanical equipment can range from less than 50 to 110 dBA at 3 feet, with the highest noise levels reaching approximately 85 dBA at 50 feet from the source.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including pile drivers, material handling equipment, pavers, jackhammers, and portable generators, can result in intermittent and prolonged increases in ambient noise levels. Although construction noise impacts are generally short-term, they can result in increased levels of annoyance to occupants of nearby residential dwellings. In general, noise levels generated by construction activities can range from approximately 71 to 83 dBA L_{eq} at 50 feet from the source.

Noise-generating construction activities are currently regulated through implementation of the City's Noise Control ordinance, which generally limits these activities to the less noise-sensitive daytime hours of the day.¹¹³

4.14.2 Regulatory Setting

Federal, State, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized, as follows:

¹¹² (United States Environmental Protection Agency 1971)

¹¹³ (City of Fowler 2021)

Federal

United States Environmental Protection Agency

In 1974, USEPA Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute USEPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that “undue interference with activity and annoyance” will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (USEPA 1974).

Department of Housing and Urban Development

The Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, “Environmental Criteria and Standards.” These guidelines identify a noise exposure of 65 dBA L_{dn} , or less, as acceptable. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn} . These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

State

California Building Code

CCR Title 24 contains standards for allowable interior noise levels associated with exterior noise sources (CBC, 2019 edition, Part 2, Volumes 1 & 2, Chapter 12 Interior Environment, Section 1206.4 Allowable interior noise levels). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

State of California General Plan Guidelines

The *State of California General Plan Guidelines*,¹¹⁴ published by the Governor’s Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific noise environments. Based on these guidelines, residential uses, churches, libraries, and hospitals are “normally unacceptable” in areas where the exterior noise level exceeds 70 dBA CNEL and “conditionally acceptable” within exterior noise environments between 60 and 70 dBA CNEL. Noise levels of up to 60 dBA CNEL are considered “normally acceptable.” The goal of these noise standards is, in part, to allow for a “normally acceptable” interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within “conditionally acceptable” exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA or more. However, the state stresses that these guidelines can be modified to reflect communities’ sensitivities to noise. Adjustment factors may also be used in order to arrive at noise acceptability standards that reflect the noise control goals of the

¹¹⁴ (State of California 2017)

community, the particular community’s sensitivity to noise, and the community’s assessment of the relative importance of noise pollution. The State recommended noise criteria for land use compatibility are summarized in **Table 4-31**.

Local



Fowler General Plan Noise Element

The *Fowler General Plan Element Preparation*, Chapter 7, Section 7.8, identifies exterior average-daily noise standards for the primary purpose of ensuring the compatibility of proposed land uses within exterior noise environments and to ensure that noise levels at adjacent land uses do not exceed acceptable levels. These standards are also designed to protect existing land uses, including transportation and industry, from encroaching urban uses. These noise standards are largely consistent with those identified in the State of California’s *General Plan Guidelines*, as discussed above, and summarized in **Table 4-31**.¹¹⁵

Fowler General Plan Land Use Element incorporates development and noise-performance standards to ensure that industrial noise levels at adjacent land uses do not exceed acceptable levels. For industrial uses affecting residential uses, the following standards are required:¹¹⁶

- On properties planned for industry, a landscaped setback 20 feet wide containing deciduous and evergreen trees shall be planted and maintained along the property line with abutting property planned for residential uses and along abutting local streets.
- Roof-mounted and detached mechanical equipment shall be acoustically baffled to prevent equipment noise from exceeding 55 dBA measured at the nearest residential property line.
- Exterior area lighting for industrial buildings, parking areas, garages, access drives, and loading areas, shall be low profile, hooded, and directed away from abutting property planned for residential use.

Table 4-31: State of California Land Use Compatibility Noise Criteria

Land Use Category	Community Noise Exposure (L _{dn} or CNEL, dBA)						Interpretation
	55	60	65	70	75	80	
Residential – Low Density Single Family, Duplex, Mobile Homes	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	 Normally Acceptable Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Residential – Multiple Family	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	
Transient Lodging – Motels, Hotels	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	
Schools, Libraries, Churches, Hospitals, Nursing Homes	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	
	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	Light Gray	 Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of noise reduction requirements and needed noise insulation features included in the design. Conventional construction

¹¹⁵ (City of Fowler 2014)

¹¹⁶ (City of Fowler 2004)

Land Use Category	Community Noise Exposure (L _{dn} or CNEL, dBA)						Interpretation
	55	60	65	70	75	80	
Auditoriums, Concert Halls, Amphitheaters							with closed windows and fresh air supply systems or air conditioning will normally suffice.
Sports Arena, Outdoor Spectator Sports							Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							Clearly Unacceptable New construction or development should generally not be undertaken.
Industrial, Manufacturing, Utilities, Agriculture							

Source: California GOPR 2017

Fowler General Plan Circulation Element includes policies to reduce transportation noise impacts to community residents and sensitive land uses, including the designation of specified truck routes within the community and incorporation of increased setback distances, wall, landscaped berms, and other noise-reduction measures for land uses located along major transportation corridors.¹¹⁷

Fowler Municipal Code

The FMC (Title 5, Public Welfare, Chapter 21, Nuisances, Article 6, Unlawful Noise Related Nuisances) includes various provisions intended to protect community residents from prolonged unnecessary, excessive, and annoying sound levels that are detrimental to the public health, welfare, and safety, or are contrary to the public interest. Examples of noise sources subject to the City’s municipal Code include, but are not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.¹¹⁸

Noise sources associated with construction-related activities are typically exempt from the City’s nuisance ordinance provided that the activities do not take place between the hours of eight p.m. and seven a.m. or by special permit from the City Manager. Various other activities are also exempt, including, but not limited

¹¹⁷ (City of Fowler 2004)

¹¹⁸ (City of Fowler 2021)

to, school entertainment and athletic events, mobile sources associated with agricultural activities, and emergency response activities.¹¹⁹

In addition to the City’s nuisance ordinance, Article 14, Section 9-5.1417, Performance Standards, of the City’s zoning ordinance establishes exterior noise level standards for industrial uses. The City’s exterior noise standards are summarized in **Table 4-32**. These standards are applied at the property line of the receiving land use and vary by exposure duration and period of the day.¹²⁰

Table 4-32: City of Fowler Municipal Code Noise Level Standards - Industrial Uses

Receiving Land Use Category	Time Period	Noise Level (dBA) ¹
Residential	10:00 p.m. to 7:00 a.m.	50
	7:00 a.m. to 10:00 p.m.	60
Public Use ²	10:00 p.m. to 7:00 a.m.	55
	7:00 a.m. to 10:00 p.m.	60
Commercial	10:00 p.m. to 7:00 a.m.	60
	7:00 a.m. to 10:00 p.m.	65
Industrial	Any time	70

*Applied at the property line of the receiving land use.
The noise standard of a cumulative 30-minute period during any hour
A 10 dB increase of the noise standard for a cumulative of 5, or more, minutes during any hour
A 20 dB increase of the noise standard, or exceed maximum ambient noise level during any time period
Includes schools, libraries, hospitals, churches, and parks.
Noise standards do not apply to railroad operations, motor vehicles, including trucks, or to agricultural equipment used in the cultivation of any agricultural land in the M-I Zone. Noise standards are subject to review/amendment by the City*

4.14.3 Methodology and Thresholds of Significance

Methodology

A combination of use of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the planning area. Short- and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium- and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes for major roadway segments within the City were derived from the traffic analysis prepared for this project. Projected traffic noise levels (future year 2042) were also quantified for nearby segments of SR-99 based on projected increases in traffic obtained from Kittelson & Associates, including the assumption that full buildout of the Fowler 2040 GP would occur by 2042 to align with the Fresno COG transportation model horizon.

Predicted train noise levels and corresponding distances to noise contours for the UPRR railroad corridor were calculated in accordance with the Federal Transit Administration’s (FTA’s) *Transit Noise and Vibration Impact Assessment* guidance.¹²¹ Train noise levels were quantified for freight trains along the UPRR freight

¹¹⁹ Ibid

¹²⁰ Ibid

¹²¹ (United States Department of Transportation 2018)

line. Predicted train volumes and operational data were obtained from the Fowler General Plan Element Preparation.¹²² Projected train volumes (future year 2042) for this corridor were unable to be obtained.

Thresholds of Significance

State CEQA Guidelines Appendix G provides the following screening criteria to evaluate potential impacts related to noise. The Fowler 2040 GP would have a significant impact if it would:

- Result in exposure of persons or generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.
- Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan area or, where such a plan has not been adopted, or within two miles of a public airport or a public use airport.

4.14.4 Impacts

Threshold 1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. The Fowler 2040 GP consists of developing parcels that are currently vacant, or under-developed and have the potential for enhanced or further development. Buildout within the Fowler planning area would result in the construction of an estimated 16,414,061 square feet of industrial land uses, 1,631,444 square feet of commercial land uses, 197,838 square feet of public facilities, and 12,494 additional dwelling units. This would result in a total of approximately 1,240,395 VMT per day. Future development would result in a net increase of approximately 992,501 VMT. Short-term construction and long-term operational noise impacts associated with future development are discussed as follows:

Short-term Exposure to Construction Noise

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in **Table 4-33**. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max} , the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,330 feet of noise-

¹²² (City of Fowler 2014)

sensitive receptors could reach levels of approximately 60 dBA L_{eq} . Depending on distances from nearby noise-sensitive land uses and the specific construction activities conducted, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern, are activities that occur during the evening and nighttime hours. Construction activities that occur during these more noise-sensitive hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby noise-sensitive land uses (e.g., residential dwellings, schools). As a result, such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions. However, the following Fowler 2040 GP policies and action items would help to further reduce criteria noise impacts on receptors.

Due to the short-term and intermittent frequency of construction noise, and the required compliance with the FMC and the above Fowler 2040 GP policies, which would require compliance with applicable standards and procedures for the control of noise impacts, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. As a result, this impact would be considered **less than significant**.

Table 4-33: Typical Individual Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529

Sources: FTA 2018, FHWA 2008

The Policies CH-33, CH-34, CH-35, and CH-36 outlined below, would ensure that potential impacts related to short-term exposure to construction noise are less than significant.

Long-term Exposure to Non-Transportation Noise

The proposed Fowler 2040 GP would primarily facilitate new residential, commercial, industrial, and public land uses within the city limits. Potential noise/land use conflicts would occur at the interface between planned residential and commercial land uses due to noise sources typically associated with commercial activities, such as rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Other noise sources associated with commercial activities include delivery trucks, parking lot sweepers, leaf blowers, and mowers. The city has adopted specific standards for noise level standards (see [Table 4-32](#)). Through the implementation of City policies governing noise levels, potential impacts in relation to non-transportation related noise exposure would be reduced to a less than significant level.

Implementation of policies CH-25, CH-26, CH-27, CH-28, CH-30, CH-31, and CH-32 would ensure specific projects adhere to the Municipal Code and would mitigate any significant nuisance noise from commercial activities, rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Therefore, implementation of the Fowler 2040 GP would not result in ambient noise level environments at noise-sensitive uses that exceed the City's maximum allowable noise exposure standards set forth in [Table 4-32](#). Consequently, future noise/land use conflicts between planned residential and commercial land would be less than significant.

Policy CH-25	New development of the land uses listed in <i>Table 7-1</i> shall be located, designed, and operated in such a way that external noise levels from stationary noise sources do not exceed the maximum identified. Noise levels shall be measured immediately within the property line of the affected land use. Where two land uses meet, the more restrictive standard shall be used.
Action Item CH-25a	Require an acoustical analysis as part of the environmental review process when uses are proposed within the contour lines as shown on <i>Figure 7-1</i> that exceed the exterior noise levels identified in <i>Table 7-1</i> .
Action Item CH-25b	Require an acoustical analysis as part of the environmental review process when a proposed use is likely to exceed the permitted exterior noise levels identified in <i>Table 7-1</i> .
Action Item CH-25c	Temporary uses such as live music events, festivals, or markets that are considered short-term or intermittent may exceed maximum noise levels but shall incorporate noise reduction measures to the extent feasible.
Action Item CH-25d	Review and revise, as necessary, the Municipal Code to reflect the noise standards contained in this chapter.
Policy CH-26	New development shall be designed and operated in such a way that interior noise levels from both stationary and mobile noise sources do not exceed 45 dBA Ldn for adjacent residential uses or other uses where people normally sleep and 45 dBA Leq at peak hour for adjacent office, school, church, or similar use. New uses increasing stationary and/or mobile noise levels shall be subject to the following thresholds for CEQA significance:
Policy CH-27	<ul style="list-style-type: none"> • Where existing ambient noise levels are less than 60 dB, an increase of 5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant; • Where existing ambient noise levels are between 60 and 65 dB, an increase of 3 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant;

	<ul style="list-style-type: none">• Where existing ambient noise levels are greater than 65 dB, an increase of 1.5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant.
Policy CH-28	Require noise generators to provide increased setbacks, walls, landscaped berms, other sound-absorbing barriers, or a combination thereof to prevent excessive noise exposure and reduce noise levels to acceptable levels, as needed.
Policy CH-29	Require noise reduction methods along major roadways in order to protect adjacent, noise-sensitive land uses against excessive noise. Noise reduction methods shall include design strategies, including setbacks, landscaped berms, and other sound-absorbing barriers, when possible, in lieu of sound walls, to mitigate noise impacts and enhance aesthetics. Sound walls may also be appropriate noise-reduction strategies.
Policy CH-30	When sound walls are proposed, encourage a combination of berms and/or landscaping and walls to produce a more visually pleasing streetscape.
Policy CH-31	Require roof-mounted and detached mechanical equipment to be acoustically buffered when adjacent to residential uses to prevent equipment noise in excess of 55dBA as measured at the nearest residential property line.
Policy CH-32	Purchase City vehicles and equipment with low noise generation. Maintain City vehicles to minimize noise.
Action Item CH-32a	Consider City vehicles and equipment as part of the Capital Improvement Program process.

Long-term Exposure to Transportation Noise

Major noise sources in the planning area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the City include, but are not limited to, SR99, Golden State Boulevard, Clovis Avenue, Manning Avenue, and Merced Street. In addition, as noted earlier in this report, rail traffic along the UPRR also contributes to transportation noise levels in the community.

Roadway Traffic Noise

Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2042 conditions). Predicted future cumulative traffic noise levels and distances to projected noise contours are summarized in [Table 4-34](#). It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts. Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in [Table 4-35](#).

Under future cumulative conditions with buildout of the GP and in comparison, to existing conditions, the GP would contribute to significant increases in traffic noise levels along segments of American Avenue, Adams Avenue, Sumner Avenue, Manning Avenue, Clovis Avenue, South Fowler Avenue, Golden State Boulevard, Merced Street, and SR99 (Refer to [Table 4-34](#)). In addition, development of future land uses within the proposed focus areas would likely occur along major roadways. Depending on the type of land uses proposed, distances from area roadways, and site conditions, future development could be exposed to traffic noise levels in excess of the City's current noise standards for land use compatibility (refer to [Table 4-32](#)). Through the implementation of City policies governing noise levels, potential impacts in relation to vehicular noise exposure would be reduced to a less than significant level.

Table 4-34: 2040 GP Buildout Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
American Ave, SR-99 to Golden State Blvd	15,022	69.8	54.3	116.5	250.6
Adams Ave, SR-99 to Golden State Blvd	17,352	67.7	WR	88.7	190.4
Adams Ave, Golden State Blvd to 7th St	11,407	62.9	WR	WR	90.8
Adams Ave, East of 5th St	7,694	61.1	WR	WR	70
Adams Ave, Armstrong Ave to Temperance Ave	6,277	59.8	WR	WR	62.3
Adams Ave, Temperance Ave to Locan Ave	5,079	59.3	WR	WR	53.5
Sumner Ave, Sunnyside Ave to Merced St	11,485	64.6	WR	54.5	116.4
Manning Ave, W of 99 SB Ramps	29,134	71.5	70.6	151.7	326.6
Manning Ave, E of 99 NB Ramps	39,103	71.0	90.4	186.4	397.5
Manning Ave, E of Golden State	32,092	70.1	80.5	164	348.7
Clovis Ave, S of Lincoln Ave	36,041	72.2	99.3	209.3	448.8
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	39,075	72.2	105.8	221.3	473.6
Clovis Ave, SR 99 SB off to Adams Ave	16,123	70.1	56.9	122.1	262.7
Clovis Ave, Adams Ave to Summer Ave	17,174	70.4	59.3	127.3	274
Clovis Ave, Summer Ave to South	9,493	67.8	WR	85.9	184.6
Clovis Ave, South Ave to Parlier Ave	6,719	66.3	WR	68.3	146.7
S Fowler Ave, Merced St. to Fresno St.	19,438	68.5	WR	95.4	205.3
S Fowler Ave, Fresno St. to South Ave.	15,352	68.8	WR	99.1	213.2
S Fowler Ave, South Ave to Parlier Ave	16,055	70.1	56.8	121.7	261.9
Golden State Blvd, American Ave to Lincoln Ave	31,974	73.4	146.1	303.2	647.5
Golden State Blvd, Lincoln Ave to Clayton Ave	26,225	72.5	129.8	266.5	567.8
Golden State Blvd, Clayton Ave to Adams Ave	22,354	71.8	118.3	240.4	510.8
Golden State Blvd, Adams Ave to Merced St.	28,845	70.0	94.2	184.4	388.2
Golden State Blvd, Merced St. to South Ave	25,114	70.4	99.4	196.8	415.5
Golden State Blvd, South Ave to Temperance Ave	23,504	70.2	96	188.8	397.8
Golden State Blvd, Temperance Ave to Valley Dr	33,283	71.7	116.2	235.6	500.4
Golden State Blvd, Valley Dr of Manning Ave	35,200	71.9	120	244.3	519.3
Golden State Blvd, Manning Ave to Springfield Ave	27,929	69.9	92.6	180.7	380
Merced St, 10th St to 9th St	23,946	67.6	WR	88.5	189.8
Merced St, 9th St to 8th St	21,045	67.1	WR	81.3	174.1
Merced St, 7th St to 6th St	12,100	65.0	WR	56.2	120.4
Merced St, 6th St to 5th St	11,593	64.8	WR	54.6	117.1
SR-99, South of Merced St	139,306	84.1	660.5	1,421.4	3,061.2
SR-99, Merced St to Adams Ave	146,209	84.3	682.1	1,468	3,161.5
SR-99, Adams Ave to Clovis Ave	152,422	84.5	701.3	1,509.3	3,250.4

Traffic noise levels for area roadways were calculated based on data obtained from the traffic analysis prepared for this project. Does not include shielding provided by intervening terrain or structures.

Projected roadway traffic noise contours for SR-99 are depicted in Figure 4 23, Figure 4 24, and Figure 4 25.

WR = Contour is located within road right-of-way

Source: Kittelson & Associates 2022

Table 4-35: Traffic Noise Levels Existing Compared to Year 2040 with General Plan Buildout

Roadway Segment	CNEL at 50 ft. from Near-travel-lane Centerline			Potentially Significant? ¹
	Existing Conditions	GP Buildout	Increase	
American Ave, SR-99 to Golden State Blvd	64.31	69.8	5.5	Yes
Adams Ave, SR-99 to Golden State Blvd	63.15	67.7	4.6	Yes
Adams Ave, Golden State Blvd to 7th St	58.56	62.85	4.3	No
Adams Ave, East of 5th St	57.61	61.14	3.5	No
Adams Ave, Armstrong Ave to Temperance Ave	57.43	59.77	2.3	No
Adams Ave, Temperance Ave to Locan Ave	56.52	59.29	2.8	No
Sumner Ave, Sunnyside Ave to Merced St	58.91	64.59	5.7	Yes
Manning Ave, W of 99 SB Ramps	64.52	71.53	7.0	Yes
Manning Ave, E of 99 NB Ramps	68.4	70.95	2.6	Yes
Manning Ave, E of Golden State	67.18	70.09	2.9	Yes
Clovis Ave, S of Lincoln Ave	68.61	72.17	3.6	Yes
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	68.48	72.16	3.7	Yes
Clovis Ave, SR 99 SB off to Adams Ave	64.58	70.11	5.5	Yes
Clovis Ave, Adams Ave to Summer Ave	63.95	70.38	6.4	Yes
Clovis Ave, Summer Ave to South	63.39	67.81	4.4	Yes
Clovis Ave, South Ave to Parlier Ave	63.04	66.31	3.3	Yes
S Fowler Ave, Merced St. to Fresno St.	64.33	68.5	4.2	Yes
S Fowler Ave, Fresno St. to South Ave.	63.52	68.75	5.2	Yes
S Fowler Ave, South Ave to Parlier Ave	63.59	70.09	6.5	Yes
Golden State Blvd, American Ave to Lincoln Ave	66.49	73.35	6.9	Yes
Golden State Blvd, Lincoln Ave to Clayton Ave	65.73	72.49	6.8	Yes
Golden State Blvd, Clayton Ave to Adams Ave	65.72	71.8	6.1	Yes
Golden State Blvd, Adams Ave to Merced St.	63.73	69.99	6.3	Yes
Golden State Blvd, Merced St. to South Ave	65.94	70.44	4.5	Yes
Golden State Blvd, South Ave to Temperance Ave	66.13	70.16	4.0	Yes
Golden State Blvd, Temperance Ave to Valley Dr	66.69	71.67	5.0	Yes
Golden State Blvd, Valley Dr of Manning Ave	66.24	71.91	5.7	Yes
Golden State Blvd, Manning Ave to Springfield Ave	65.91	69.85	3.9	Yes
Merced St, 10th St to 9th St	64.58	67.63	3.1	Yes
Merced St, 9th St to 8th St	64.23	67.07	2.8	No
Merced St, 7th St to 6th St	60.4	65.02	4.6	Yes
Merced St, 6th St to 5th St	59.83	64.84	5.0	Yes
SR-99, South of Merced St	82.41	84.12	1.7	Yes
SR-99, Merced St to Adams Ave	82.55	84.33	1.8	Yes
SR-99, Adams Ave to Clovis Ave	82.64	84.51	1.9	Yes

Traffic noise levels were calculated based on traffic volumes derived from the traffic analysis prepared for this project.

1. Significant increases are based on the following thresholds:

- 5.0, or greater, where the existing noise level is less than 60 dBA
- 3.0, or greater, where the existing noise level is 60-65 dBA
- 1.5, or greater, where the existing noise level is greater than 65 dBA

Source: Kittelson & Associates 2022

Railroad Traffic Noise

The UPRR line runs northwest-southeast through the City adjacent to Golden State Boulevard. Roughly 35 freight trains currently travel along this rail corridor on a daily basis. By year 2040, freight trains traveling along this corridor are likely to increase but no reliable projections could be found in order to analysis future conditions.

Existing train noise levels and distance to noise contours are summarized in [Table 4-29](#). Based on a conservative estimate of 35 trains per day, average-daily noise levels along the railroad corridor could reach levels of approximately 79 dBA CNEL at 100 feet from the rail corridor centerline. Although the proposed GP would not result in an increase in train traffic, the development of future land uses near the train tracks and could be exposed to train noise levels in excess of the City’s current noise standards for land use compatibility (refer to [Table 4-32](#)). Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. Through the implementation of City policies governing noise levels, potential impacts in relation to locomotive noise exposure would be reduced to a less than significant level.

Table 4-36: Future Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Rail Corridor Centerline	Distance to CNEL Contours (feet) from Rail Corridor Centerline		
			70	65	60
UPRR Freight	35	79	263	468	830

UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Predicted noise contours do not include shielding by intervening structures.

Major Surface Transportation Noise Contours

As previously noted, major surface transportation noise sources in Fowler include SR 99 and the UPRR, which parallels SR 99 to the east in a general northwest to southeast direction. Vehicle traffic along Golden State Boulevard also contribute to projected noise contours along this same general corridor. Combined projected future noise contours for these surface transportation noise sources are depicted in [Figure 4-14](#), [Figure 4-15](#), and [Figure 4-16](#).

Implementation of Fowler 2040 GP policies CH-25, CH-26, CH-27, CH-28, CH-29, CH-30, and CH-32 as outlined above would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Additional policies have been proposed to promote alternative means of transportation and to limit heavy truck traffic to designated truck routes, which would help to reduce transportation-related noise levels along area roadways. Implementation of these policies and actions will help to reduce impacts associated with future development.

Table 4-37: Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA) ¹
	CNEL	Leq ⁶	
Residential	45 ⁴	--	65 ^{2,3}
Convalescent Care Facilities, Hospitals	45 ⁴	--	70 ^{2,3}
Transient Lodging	45	--	65 ^{2,3}
Schools, Libraries, Museums and Places of Worship	--	45	--

Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA) ¹
	CNEL	Leq ⁶	
Playgrounds, Neighborhood Parks	--	--	70 ⁵
Office Buildings	--	45	70 ³
Commercial Retail & Light Industrial	--	--	75

1. To be applied at outdoor activity areas. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use.
2. Where it is not possible to reduce exterior noise levels to 65 dBA CNEL, or less, an exterior noise level of 70 dBA CNEL may be allowed provided that an acoustical analysis has been prepared for the project to identify available exterior noise-reduction measures to be incorporated and interior noise levels are in compliance with this table.
3. Where outdoor activity areas are not included in the project design, only the interior noise level standard shall apply.
4. In locations where railroad noise is the predominant noise source, the interior noise standard for residential land uses shall be reduced by 5 dB to account for the increased potential for sleep disruption to building occupants.
5. Where quiet is a basis for use.
6. This standard is intended to apply to land uses with operational hours predominantly during the daytime hours. The interior noise standard applies to a typical worst-case hour during the period of use.

Threshold 2. Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Less than Significant Impact. The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

Table 4-38: Summary of Ground borne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of “architectural” damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of “architectural” damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of “architectural” damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

*The vibration levels are based on peak particle velocity in the vertical direction for continuous vibration sources, which includes most construction activities.
Source: Caltrans 2020*

There are no federal, State, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is “virtually no risk of ‘architectural’ damage to normal buildings.” Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance,

continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings.¹²³

Ground borne vibration sources located within the City that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate ground borne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates ground borne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Ground borne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as potentially significant if these activities are performed within 200 feet of occupied structures.¹²⁴

The Fowler 2040 GP includes numerous goals and policies that would help to further reduce short-term noise and vibration impacts to nearby sensitive land uses. Relevant policies include policies: CH-33, CH-34, CH-35, and CH-36.

Policy CH-33	Transportation and City infrastructure construction shall not be subject to typical noise standards so long as construction occurs between the hours of 7 AM and 7 PM, Monday through Friday, or between 8 AM and 5 PM on weekends and federal holidays. Construction may occur outside of these times if completing the work within these time frames is deemed infeasible.
Policy CH-34	The City shall require an assessment of construction noise impacts on nearby noise-sensitive land uses and associated activities to minimize those impacts as part of the discretionary review process.
Policy CH-35	Require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on current City or Federal Transit Administration (FTA) criteria.
Policy CH-36	The City may require a project-specific vibration impact assessment and associated impact reduction measures for projects involving the use of major vibration-generating equipment which could result in vibration levels in excess of 0.2 in/sec peak particle velocity (PPV).

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive ground borne vibration that would result in a significant increase in annoyance. Application of Fowler 2040 GP policies would restrict the hours of construction and thus avoid vibrations during times when it could potentially be more of a nuisance, ensuring that the impact of new construction vibration

¹²³ (California Department of Transportation 2020)

¹²⁴ Ibid

is less-than-significant. In addition, individual development projects will be subject to site-specific environmental review, which will necessitate identification of site-specific mitigation in the event that potentially significant impacts are identified.

Threshold 3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less than Significant Impact. The Selma Airport is located approximately one mile south of E. Springfield Avenue. As illustrated in the Selma Airport ALUCP, a portion of the planning area is located within the Airport's TPZ (see [Table 4-24](#)). Land use limitations in the TPZ include a density limit of 300 persons per acre, an open space requirement of 10 percent, and prohibitions on hazards to flight and high intensity uses such as stadiums. Future development within this area is not expected to result in excessive noise for people residing or working in the area. This portion of the planning area is planned for medium and high density residential, commercial, and light industrial land uses. Development within the TPZ would be subject to review by the Fresno County ALUC for consistency with the ALUCP. In addition, the Selma Airport is a small municipal airport that would not be a large producer of noise due to larger commercial jet engines. The planning area would not place residents or workers in an area where substantial noise is experienced resulting from airport operations.

The Fowler 2040 GP includes the policies and action items outlined above under Thresholds 1 and 2 would reduce noise impacts on sensitive receptors.

4.14.5 Mitigation Measures

Mitigation measures are not required.

4.14.6 Cumulative Impacts

The buildout of the 2040 GP would result in the increase of ambient noise levels as development occurs. Any potential noise and vibration related impacts would be site specific and would be considered on a project-by-project basis as development occurs. Future projects would be reviewed and approved on an individual basis, ensuring that noise and vibration impacts are considered in relation to other past and reasonably foreseeable future projects. In addition, the implementation of City noise related policies and standards would ensure that any potential impacts that could be considered cumulatively considerable would remain less than significant in nature.

Figure 4-13: Noise Measurement Locations and General Plan Update Focus Areas

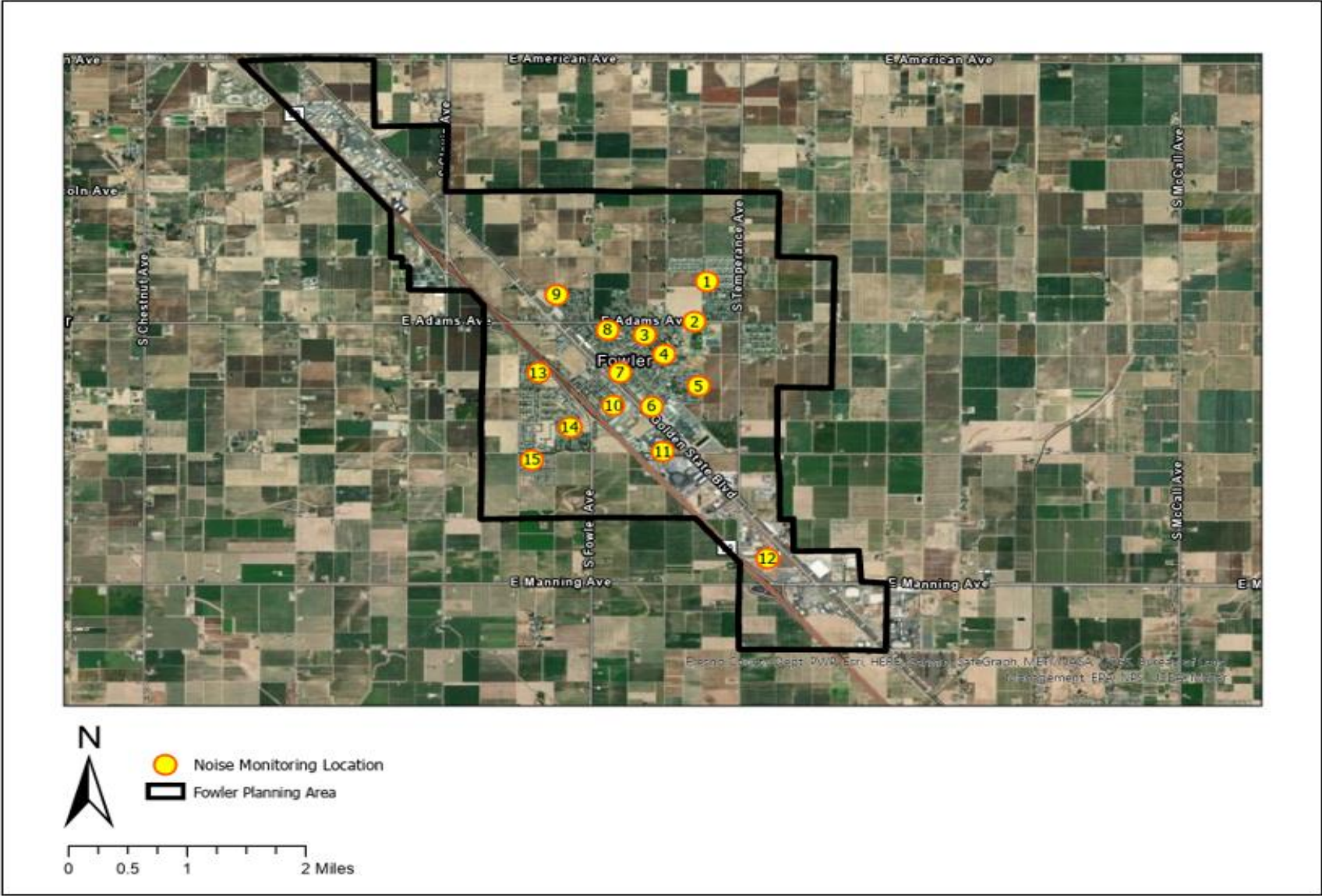


Figure 4-14: Existing Noise Contours – Major Surface Transportation Noise Sources

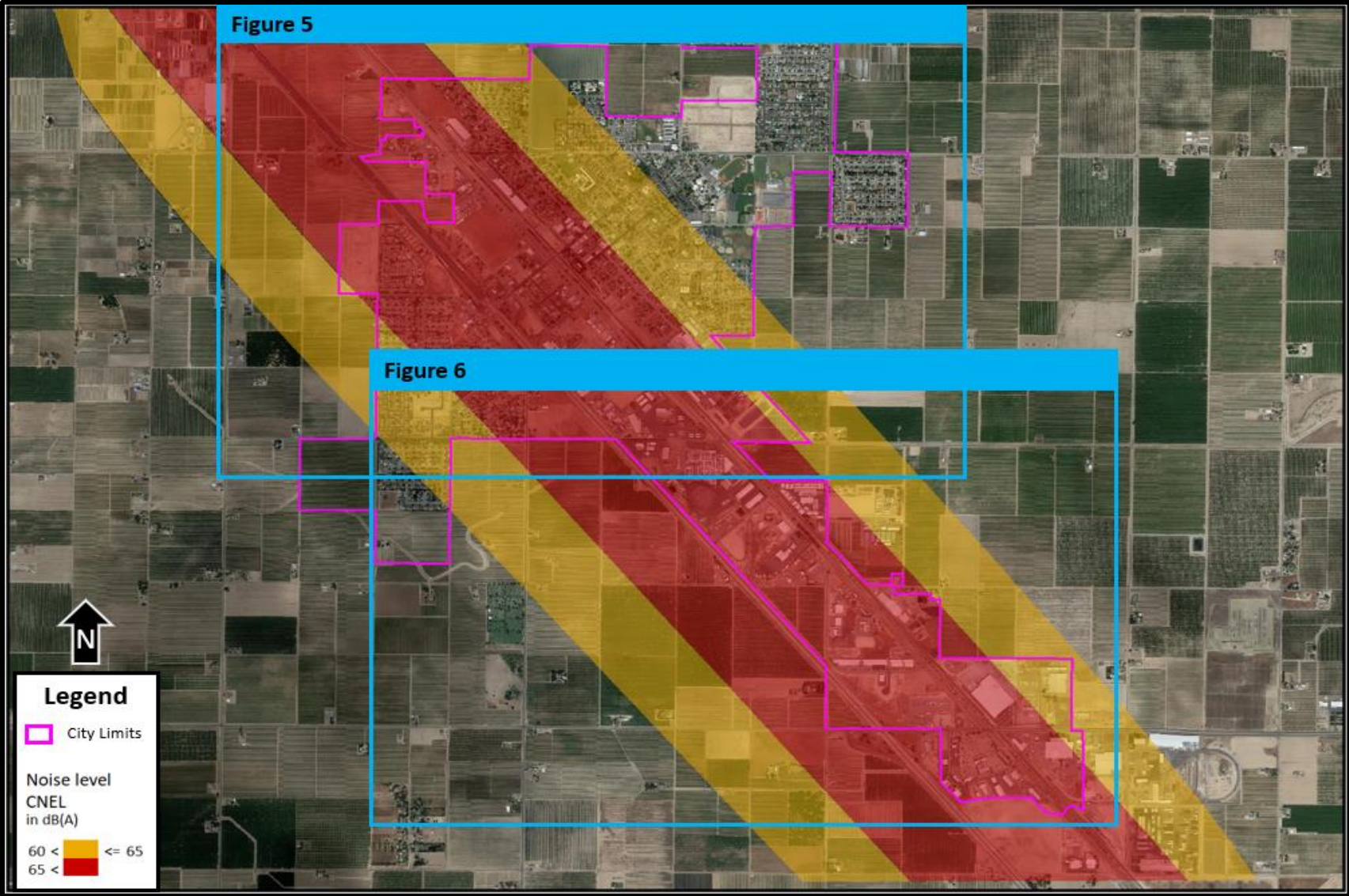


Figure 4-15: Existing Noise Contours - Northern Portion of the City of Fowler

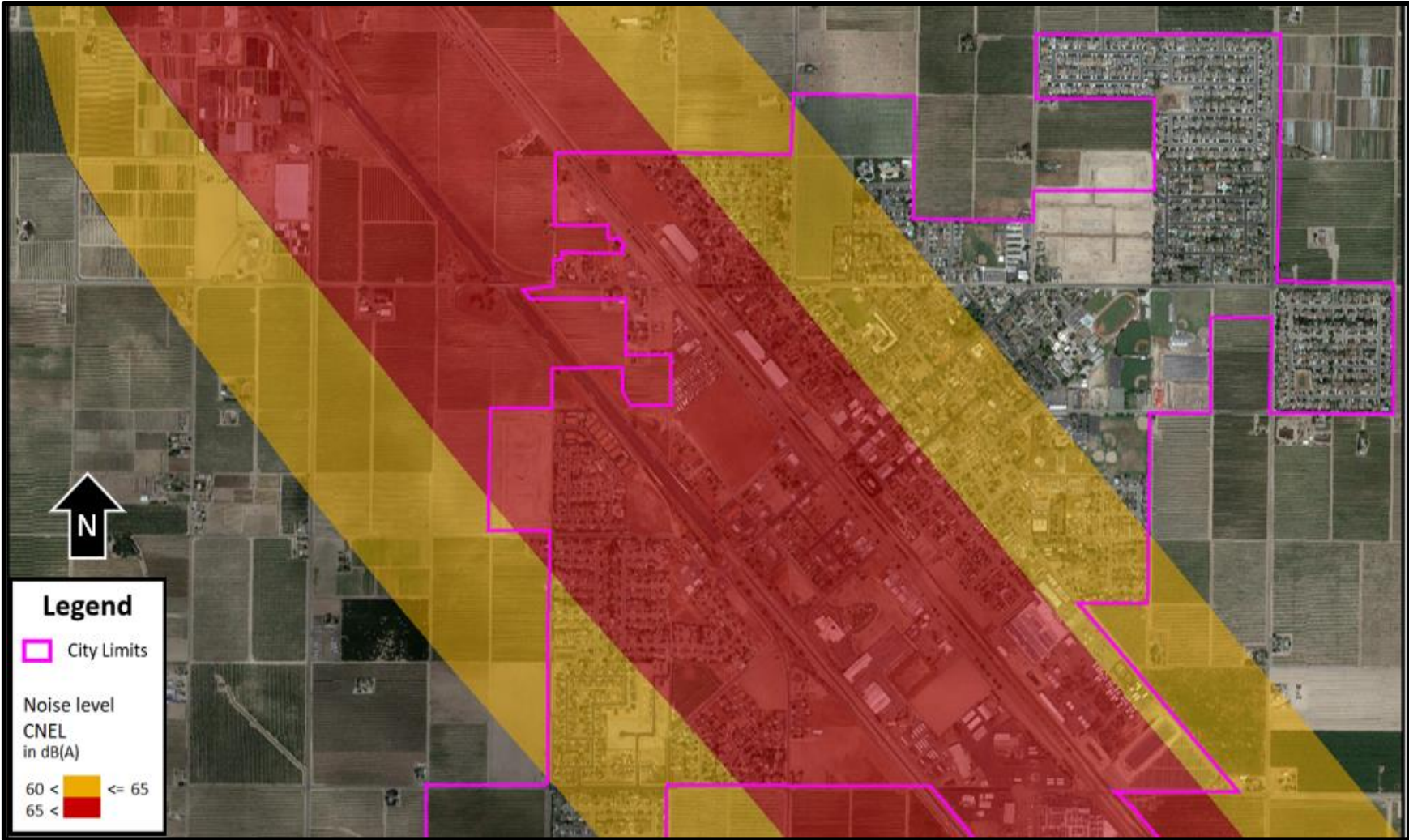
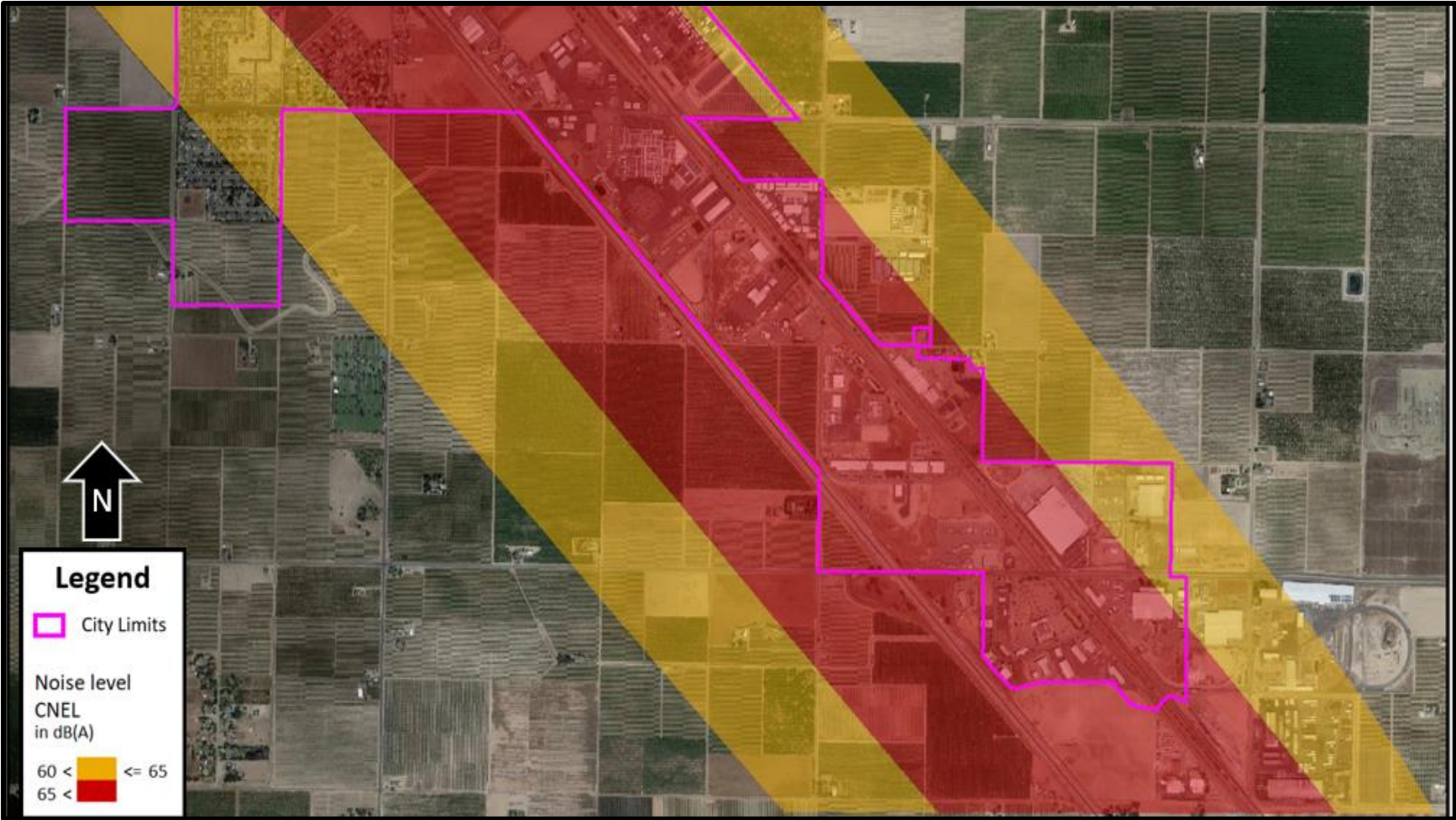


Figure 4-16: Existing Noise Contours - Southern Portion of the City of Fowler



4.15 Population and Housing

This section evaluates impacts to population and housing, including potential population growth and housing displacement impacts, that could result from implementation of the Fowler 2040 GP.

4.15.1 Environmental Baseline

Population and Housing

Fowler is one of 15 cities in Fresno County. In 2010, Fowler had a population of 5,570 people, while in comparison, the County had a population of 930,450 people.¹²⁵ In 2019, the population in Fowler had increased to 6,605 people, while the population in the County had risen to 999,101 people.¹²⁶ These numbers reflect that over this eight-year span Fowler grew by 18.6 percent (2.3 percent annual growth rate), compared to the County which grew by 7.4 percent (0.92 percent annual growth rate) over the same period. In 2019, Fowler had a persons per household of 3.28.¹²⁷ Persons per household accounts for the grouping and number of individuals that lives within a dwelling unit. Persons per dwelling units, discussed below, accounts for the number of people living within the City in comparison to the number of dwelling units available. In 2019, Fowler contained 2,061 dwelling units, resulting in a persons per dwelling unit count of 3.20. Buildout of the 2040 GP would result in a population of 48,131 people and a dwelling unit count of 14,764, resulting in 3.26 persons per dwelling unit.

Since 2010, Fowler has grown at an annual rate of between two and three percent. At a two percent growth rate, the population of Fowler would increase from 5,570 in 2010 to 8,364 in 2040. At three percent, the population would increase to and 11,883 in 2040.¹²⁸

4.15.2 Regulatory Setting

Federal

There are no federal regulations, plans, programs, or guidelines associated with Population and Housing resources that are applicable to the Project.

State

Housing Element Statute

GC Sections 65580-65589.9 mandate that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law recognizes that for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, State housing policy rests largely upon the effective implementation of local general plans and in particular, housing elements. GC Section 65588 dictates that housing elements must be updated at least once every eight years.

¹²⁵ (United States Census Bureau 2022)

¹²⁶ Ibid.

¹²⁷ This is an averaged number from data gathered from the California Department of Finance, the American Community Survey 2010-2020, and the Fresno Council of Governments.

¹²⁸ The 2-3% growth rate is based on City of Fowler growth data tracking dwelling units added annually. California Department of Finance estimates a 1.46% growth rate for the City of Fowler, which would increase to a population of 8,751 in 2040.

Senate Bill 375

Senate Bill 375, adopted in October 2008, calls upon each of California's Metropolitan Planning Organizations (MPOs) to develop an integrated transportation, land use, and housing plan known as a Sustainable Communities Strategy (SCS). This SCS must demonstrate how the region will reduce greenhouse gas emissions through long-range planning. It also requires the Regional Housing Needs Allocation, which anticipates housing need for local jurisdictions, to conform to the SCS, which is an opportunity to advocate for increased access to and distribution of affordable housing across the region.

Surplus Land Act

The California Surplus Land Act requires that when cities, counties, transit agencies and other local agencies sell or lease their land, they must prioritize it for affordable housing development and parks and open space development.

2019 Housing Bills

Governor Gavin Newsom signed 18 bills in October of 2019 to address the statewide housing crisis (listed below). The bills incentivize affordable housing, make Accessory Dwelling Units (ADUs) easier to build, and streamline permitting and approvals to address the California housing crisis. The Governor signed SB 113 by the Committee on Budget and Fiscal Review, which will enable the transfer of \$331 million in state funds to the National Mortgage Special Deposit Fund and establishes the Legislature's intent to create a trust to manage these funds to provide an ongoing source of funding for borrower relief and legal aid to vulnerable homeowners and renters.

The Governor signed the following bills to remove barriers and boost housing production:

- SB 330 established the Housing Crisis Act of 2019, which was intended to accelerate housing production in California by streamlining permitting and approval processes, ensuring no net loss in zoning capacity, and limiting fees after projects are approved.
- AB 1763 creates more affordable housing by giving 100 percent affordable housing developments an enhanced density bonus to encourage development.
- AB 116 removes the requirement for Enhanced Infrastructure Financing Districts to receive voter approval prior to issuing bonds.
- AB 1485 will build on existing environmental streamlining law and encourage moderate-income housing production.
- AB 1255 requires cities and counties to report to the state an inventory of their surplus lands in urbanized areas. The bill then requires the state to include this information in a digitized inventory of state surplus land sites.
- AB 1486 expands Surplus Land Act requirements for local agencies, requires local governments to include specified information relating to surplus lands in their housing elements and annual progress reports, and requires the state Department of Housing and Community Development to establish a database of surplus lands, as specified.
- SB 6 requires the state to create a public inventory of local sites suitable for residential development, along with state surplus lands.
- SB 751 creates the San Gabriel Valley Regional Housing Trust to finance affordable housing projects for homeless and low-income populations and address the homelessness crisis in the region.
- AB 1483 requires local jurisdictions to publicly share information about zoning ordinances, development standards, fees, exactions, and affordability requirements. The bill also requires the

Department of Housing and Community Development to develop and update a 10-year housing data strategy.

- AB 1010 allows duly constituted governing bodies of a Native American reservation or Rancheria to become eligible applicants to participate in affordable housing programs.
- AB 1743 expands the properties that are exempt from community facility district taxes to include properties that qualify for the property tax welfare exemption and limits the ability of local agencies to reject housing projects because they qualify for the exemption.
- SB 196 enacts a new welfare exemption from property tax for property owned by a Community Land Trust and makes other changes regarding property tax assessments of property subject to contracts with Community Land Trusts.

The construction of ADUs can also help cities meet their housing goals and increase the state's affordable housing supply. Several recent pieces of legislation have been implemented to eliminate barriers to building ADUs:

- AB 68 makes major changes to facilitate the development of more ADUs and address barriers to building. The bill reduces barriers to ADU approval and construction, which will increase production of these low-cost, energy-efficient units and add to California's affordable housing supply.
- AB 881 removes impediments to ADU construction by restricting local jurisdictions' permitting criteria, clarifying that ADUs must receive streamlined approval if constructed in existing garages, and eliminating local agencies' ability to require owner-occupancy for five years.
- AB 587 provides a narrow exemption for affordable housing organizations to sell deed-restricted land to eligible low-income homeowners.
- SB 13 creates a tiered fee structure which charges ADUs more fairly based on their size and location. The bill also addresses other barriers by lowering the application approval timeframe, creating an avenue to get unpermitted ADUs up to code, and enhancing an enforcement mechanism allowing the state to ensure that localities are following ADU statute.
- AB 671 requires local governments' housing plans to encourage affordable ADU rentals and requires the state to develop a list of state grants and financial incentives for affordable ADUs.

Local

Fowler Housing Element

The California Housing Element law requires every jurisdiction to prepare and adopt a housing element as part of its general plan. It is typical for each city or county to prepare and adopt its own separate housing element. However, Fresno County and 12 of the 15 cities in the County, including Fowler, with the help of the Fresno Council of Governments, prepared a Multi-Jurisdictional Housing Element (MJHE) for the 5th Cycle of housing element updates (2015-2023). The MJHE provides an opportunity for countywide housing issues to be effectively addressed at the regional level and also provides the opportunity for local governments to accommodate the Regional Housing Needs Allocation assigned to the Fresno County region. The 6th Cycle Fresno Multi-Jurisdictional Housing Element is currently being prepared. Certification is required by December 31, 2023.

Goals and Policies from the 5th Cycle MJHE would remain in effect for the Fowler 2040 GP. The applicable goals and policies are listed below:

Goals

Goal 1: Facilitate and encourage the provision of a range of housing types to meet the diverse needs of residents.

Policies

Policy 1.2: Facilitate development of new housing for all economic segments of the community, including extremely low, very low-, low-, moderate-, and above moderate-income households.

Policy 1.4: Promote balanced and orderly growth to minimize unnecessary development costs adding to the cost of housing.

Policy 1.5: Encourage infill housing development on vacant, by-passed, and underutilized lots within existing developed areas where essential public infrastructure is available.

Policy 1.6: Promote development of higher-density housing, mixed-use, and transit-oriented development in areas located along major transportation corridors and transit routes and served by the necessary infrastructure.

Policy 1.7: Ensure the adequate provision of water, sewer, storm drainage, roads, public facilities, and other infrastructure necessary to serve new housing.

Fresno Council of Governments 2022 Regional Transportation Plan and SCS

The Fresno Council of Governments (FCOG) RTP/SCS addresses greenhouse gas emissions reductions and other air emissions related to transportation, with the goal of preparing for future growth in a sustainable manner. The Plan includes mobility and growth projections through 2042.

4.15.3 Methodology and Thresholds of Significance

Population and housing trends in Fowler were evaluated by reviewing the most current data available from the United States Census Bureau, Department of Finance, and the current Fowler GP. Impacts related to population are generally social or economic in nature. Under CEQA, a social or economic change generally is not considered a significant effect on the environment unless the changes are directly linked to a physical change.

According to the CEQA Guidelines Appendix G, the proposed project would have a significant impact related to population and housing if it would:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

For purposes of this analysis, “substantial” population growth is defined as growth exceeding FCOG population forecasts for Fowler. “Substantial” displacement would occur if allowed land uses would displace more residences than would be accommodated through growth accommodated by the project.

4.15.4 Impacts

Threshold 1: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact. Buildout of the Fowler 2040 GP would directly and indirectly result in population growth within the planning area through the construction of new homes, businesses, and the extension of utilities and infrastructure to support future growth and development of Fowler. The Fowler 2040 GP creates an updated land use plan for Fowler that plans for additional residential growth, which would result in an increase in the number of dwelling units and population to 14,764 and 48,131, respectively. This results in a persons per dwelling units of 3.26. As of 2019, Fowler had a dwelling unit count of 2,061 units and a population of 6,605 people. This results in a persons per dwelling units of 3.20. The Fowler 2040 GP would establish the planned growth and land uses for the City through 2040. Population and housing development projects would be required to align with the General Plan. This would ensure that substantial unplanned growth would not occur. The Fowler 2040 GP would also result in additional industrial and commercial growth, which would increase the employment base within Fowler.

Threshold 2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. The Fowler 2040 GP does not propose the displacement of substantial amounts of people or housing that would necessitate the construction of replacement of housing elsewhere. The Fowler 2040 GP plans for full buildout to accommodate 48,131 people and 14,764 dwelling units, necessitating the construction of new housing both within the existing city limits of Fowler and within the planning area beyond the existing city. The Fowler 2040 GP does encourage the utilization and redevelopment of both infill sites and underutilized parcels within the planning area, which could result in the replacement of existing housing. However, the project would result in an overall increase in housing stock. As potential residential development or redevelopment projects are identified, additional project specific analysis would be completed at that time, including preparation of a relocation analysis in accordance with applicable federal and state laws. The Fowler 2040 GP would not require construction of replacement housing and the impact would be less than significant.

4.15.5 Mitigation Measures

Mitigation measures are not required.

4.15.6 Cumulative Impacts

Future development and buildout of the Fowler 2040 GP would result in the increase of population, workforce, and housing within Fowler. In addition, future buildout would contribute to increased density and intensity of land uses that would undergo development. Cumulative development of the planning area is not expected to result in the exceedance of projections provided by Fresno COG. In addition, market conditions and occupancy rates would be a limiting factor in any potential unexpected exceedance of the projected growth planned for within the planning area. The Fowler 2040 GP would provide a plan for reasonably foreseeable development, with an array of housing types that would support all levels of socioeconomic status. Any cumulative impacts result from the buildout of the Fowler 2040 GP would not be cumulatively considerable.

4.16 Public Services

This section evaluates impacts to public services, including fire and police protection, public schools, libraries, and parks, that could result from implementation of the Fowler 2040 GP.

Impacts to water and wastewater infrastructure and solid waste collection and disposal are discussed in Section 4.20, **Utilities and Service Systems**.

4.16.1 Environmental Baseline

Fowler's population of 6,605 relies on a variety of public services, including fire protection and emergency services, police protection, school facilities, park facilities, and library services.

Fire Protection and Emergency Services

Fire protection services in the in Fowler are provided by Fowler Fire Department on a contract basis. Unincorporated portions of the planning area are within the jurisdiction of the Fresno County Fire Protection District. The Fire Department also provides emergency medical services and responds to the following incidents within the service area:

- Fire;
- Medical;
- Vehicle;
- Multi-casualty;
- Hazardous materials;
- Confined space rescue; and
- Any other mutually agreed to response service.

The Fowler fire station is located at 220 E. Main Street across from City Hall and would ultimately house 11 personnel.¹²⁹ The Fresno County Fire Protection District considers the City and its population when evaluating its fleet size and equipment.¹³⁰ The entirety of the Fresno County Fire Protection District fleet and resources are available to the Fowler. This would include the availability of the entire fleet.

Police

The Fowler Police Department operates from its City Hall headquarters at 128 South 5th Street. The department provides crime prevention, traffic law enforcement, as well as enforcement of the Fowler Municipal Code in coordination with the Community Development Department within the city limits. Unincorporated portions of the planning area are within the jurisdiction of the Fresno County Sheriff Office's Area 3 Substation, which is staffed by 29 deputy sheriffs, 11 detectives, and four community service officers.

The Fowler Police Department does not have any detention facilities onsite; detainees are transported to the Fresno County Jail, located in downtown Fresno.

Fowler Police Department staff currently consists of a Chief of Police, ten sworn officers, three sworn part-time officers, and two support staff members.¹³¹ The staffing ratio as of 2019 was approximately 1.5 full-

¹²⁹ (City of Fowler 2021)

¹³⁰ (National Fire Protection Association 2022)

¹³¹ (City of Fowler 2021)

time officers per 1,000 residents. Equipment includes 15 patrol cars. The police department operates two patrol units on a 24-hours basis in two 12-hour shifts, with a minimum of two officers per shift with one additional 12-hour unit on patrol from 1400-0200 hrs. Non-sworn staff includes one records and property technician, and two part-time community service officers.

Schools

Fowler is served by the Fowler Unified School District (FUSD) which provides K-12 school education. While FUSD serves an area that extends beyond the planning area, a majority of the schools within FUSD are located within Fowler as shown on **Figure 4-17**. These include two elementary schools (Marshall Elementary and Fremont Elementary), one middle school (John Sutter), one high school (Fowler High), and one continuation high school (Fowler Academy). As of 2020, the school district had an enrollment of 2,589 students.¹³²

From 2017-2021, the FUSD has maintained a graduation rate of 98 percent, the highest in Fresno County. In November 2016, Measure J passed with 78 percent voter approval.¹³³ This school bond authorized up to \$42 million in funds to modernize and upgrade the school district's facilities. Upgrades included pool construction at Fowler High School, modernized playground equipment at the elementary schools, and the widening of Walter Avenue from the high school to Temperance Avenue, among other improvements.

The closest higher education facilities are Fresno Pacific University (8 miles), Fresno City College (13 miles), Reedley College (14 miles), California State University, Fresno (17 miles), Clovis Community College (23 miles), and College of the Sequoias in Visalia (32 miles).

Parks

There are currently four City parks in Fowler, all of which are managed by the Department of Recreation. Panzak Park is approximately 2.23 acres and includes a covered picnic area, large shade trees, playground equipment, and tennis courts. The recently developed Donny Wright Park covers an area of approximately 5.8 acres and includes an expanse of irrigated lawn and trails for recreation. Margaret Cowings Park is an approximate 0.17-acre neighborhood park with an irrigated lawn and shade trees located on North 9th Street between Merced and Tuolumne. Also considered a City park, the Fowler Veteran's Monument covers an area of approximately 0.08 acres and includes benches on paved surfaces, a fountain, several flag poles, ornamental hedges, and rose gardens. While not yet constructed, an eight-acre sports park west of SR 99 is in the planning and development stage. There are no State or regional parks located in the planning area.

Libraries

A reading room was established in Fowler in 1890, and the Fresno County Public Library opened a branch in the City in 1910. In 1913, the two merged and the library remained in the same building for 94 years until 2008 when the Fowler branch was relocated to a new 8,660 square-foot building at 306 South 7th Street. While not operated by the City, the branch offers accessible and inclusive programs year-round for Fowler residents of all ages. In addition to lending materials, the branch also provides 20 Internet stations for public use, printing and photocopying for a fee, and meeting room space.

¹³² (District, Fowler Unified School 2022)

¹³³ (City of Fowler 2021)

4.16.2 Regulatory Setting

Federal

Federal Fire Prevention and Control Act of 1974

The National Fire Incident Reporting System is a system established by the National Fire Data Center of the United States Fire Administration (USFA) to carry out the intentions of the Federal Fire Prevention and Control Act of 1974. The Act authorizes the USFA to gather and analyze information on the magnitude of the Nation's fire problem, as well as its detailed characteristics and trends. The Act further authorizes the USFA to develop uniform data reporting methods, and to encourage and assist State agencies in developing and reporting data.

National Fire Protection Association, Standard 901

The National Fire Protection Association Standard 901 provides the latest guidelines to help fire departments and other fire protection organizations effectively share data with other agencies. This standard provides common language and definitions that define and describe elements and classifications used by many fire departments in the United States and other countries to describe fire damage potential and experience during incidents.

Disaster Mitigation Act (2000-Present)

Section 104 of the Disaster Mitigation Act of 2000 (Public Law 106-390) requires a state mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans

Americans with Disabilities Act

The Americans with Disabilities Act requires that public agencies take all practicable efforts to make facilities accessible to and usable by all people. The Act applies to open space and recreational resources, requiring that, where practicable, the City's recreational buildings and park trails accommodate wheelchairs, strollers, walkers, and children.

State

California Fire Plan

The Strategic California Fire Plan is the State's road map for reducing the risk of wildfire. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

State Hazard Mitigation Plan

The purpose of the State Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, state, and federal agencies as well as the private sector. The California Office of Emergency Services (OES) prepares the SHMP. The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is Federally required under the Disaster Mitigation Act of 2000 in order for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. The SHMP was most recently updated in 2018.

Wildland-Urban Interface Building Standards

Title 24, Part 9 of the 2022 California Fire Code establishes standards and requirements for construction in relation to the prevention of wildfire. These codes include provisions for ignition-resistant construction standards in the wildland urban interface.

California Office of Emergency Service

Through the California Emergency Services Act of 1970, the California Office of Emergency Service provides the basis for local emergency preparedness. The Office of Emergency Services is responsible for preparing the California State Emergency Plan and for coordinating and supporting emergency services conducted by local governments. The responsibility for immediate response to an emergency, such as fires, landslides, earthquakes or riots, rests with local government agencies and segments of the private sector, with support services provided by other jurisdictions and/or State and federal agencies. In accordance with their normal operating procedures, the initial response to an emergency will be made by local Fire, Law Enforcement, Medical or Maintenance (Public Works) districts or departments.

California Fire and Building Code

The 2019 Fire and Building Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

California Health and Safety Code

State fire regulations are set forth in HSC Section 13000, et seq. This includes regulations for building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Code of Regulations

CCR Title 5, Education, contains the implementing regulations that govern all aspects of education within the State.

California AB 2926 —School Facilities Act of 1986

AB 2926, entitled the School Facilities Act of 1986, was enacted in 1986 and added GC Section 65995. It authorizes school districts to collect development fees, based on demonstrated need, and generate revenue for school districts for capital acquisitions and improvements. It also established that the maximum fees (adjustable for inflation) which may be collected under this and any other school fee authorization are \$1.50 per square foot (\$1.50/sf) of residential development and \$0.25/sf of commercial and industrial space.

AB 2926 was expanded and revised in 1987 through the passage of AB 1600, which added GC Section 66000, et seq. Under this statute, payment of statutory fees by developers serve as total mitigation under CEQA to satisfy the impact of development on school facilities. However, subsequent legislative actions have alternatively expanded and contracted the limits placed on school fees by AB 2926.

California SB 50

As part of the further refinement of the legislation enacted under AB 2926, the passage of SB 50 in 1998 defined the Needs Analysis process in Government Code Sections 65995.5–65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a

result of development. The fees (referred to as Level One fees) are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level Two fees require the developer to provide one-half of the costs of accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be implemented at the time the funds available from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the State their long-term facilities needs and costs based on long-term population growth in order to qualify for this source of funding. However, voter approval of Proposition 55 on March 2, 2004, precludes the imposition of the Level Three fees for the foreseeable future. Therefore, once qualified, districts may impose only Level Two fees, as calculated according to SB 50.

State Public Park Preservation Act

The State Public Park Preservation Act (PRC Sections 5400-5409) is the primary instrument for protecting and preserving parkland in California. Under the Act, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This ensures a no net loss of parkland and facilities.

California Commission on Peace Officer Standards and Training

The California Commission on Peace Officer Standards and Training (POST) advocates for, exchanges information with, sets selection and training standards for, and works with law enforcement and other public and private entities. POST was established by the Legislature in 1959 to identify common needs that are shared by representatives of law enforcement.

Quimby Act

The 1975 California Quimby Act (GC Section 66477), authorizes cities and counties to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for operation and maintenance of park facilities. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or parkland and the type of development project upon which the fee is imposed. Cities with a high ratio of park space to residents can set a standard of up to 5 acres per 1000 persons for new development. Cities with a lower ratio can only require the provision of up to 3 acres of park space per thousand people. The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland.

Local

Fowler Municipal Code

The FMC regulates the use of City parks and other City public facilities. Title 10, City Parks and Recreation provide guidelines and procedures to follow for use of park facilities in providing opportunities for wholesome, year round public recreation service for all age groups. Fowler's Recreation department is responsible for maintaining parks and recreation facilities. The city also administers park fees and reservations through an application system.

Subdivision Ordinance

Fowler's Subdivision Ordinance, last updated in 1985, establishes the City's open space requirements as authorized by the Fowler GP and Quimby Act. Residential subdivisions greater than 50 lots are required to provide a portion of the Quimby Act ratio within their subdivision. The standard for park space is 3.0 acres per 1,000 residents.

4.16.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed project would have a significant impact related to public services if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - Fire protection
 - Police protection
 - Schools
 - Parks
 - Other public facilities

The population numbers used for the analysis of public services and safety represent those for the predicted population under buildout of the Fowler 2040 GP. The analysis does not account for any daytime increase of population due to a higher population of people driving into Fowler for jobs.

4.16.4 Impacts

Threshold 1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire Protection:

Less than Significant Impact. Buildout of the Fowler 2040 GP would add approximately 41,526 residents within the planning area, resulting in a total estimated population of 48,131. The Fowler 2040 GP also facilitates additional growth of non-residential land uses, such as commercial and industrial uses. This growth would elevate the demand for fire protection services within the planning area. It is anticipated that as demand increase, additional facilities may be required in order to maintain adequate levels of service. The Fowler’s fire station is located on the eastern side of SR 99 providing access to the majority of development within the Fowler’s eastern half. Development on the west side of SR 99 is connected to the eastern parts of the Fowler by Merced Street. In an emergency situation on Fowler’s western side, the Fowler Fire Department would be required to use Merced Street as an inflection point, before converging on the situation. Should additional facilities be required, those facilities will be planned and constructed as future development occurs to ensure that adequate staffing is maintained. Project-specific impacts will be evaluated at the time additional facilities are proposed. Although, the Fowler 2040 GP would facilitate development that would increase the demand for fire protection services such that both additional staff and new facilities would likely be needed in order to accommodate growth in the planning area, the following policies and action items of the Fowler 2040 GP would ensure adequate firefighting staff, infrastructure, and fire protection services are provided.

Policy PF-11

In cooperation with the Fresno County Fire Protection District, provide firefighting equipment, facilities, and staffing sufficient to assure adequate response and fire flow at all times.

Policy PF-12	Ensure adequate water supplies are available for fire suppression throughout the City and require development to construct all necessary fire suppression infrastructure and equipment.
Policy PF-13	Maintain mutual aid agreements with other fire and emergency service departments in Fresno County to ensure adequate service throughout the City of Fowler and its Planning Area.
Policy PF-14	Maintain staffing levels of City emergency service departments, including fire and police.
Action Item PF-14a	Prepare a staffing plan for the Police Department to establish target staffing levels and update the plan periodically. The following staffing targets shall be used until the staffing plan is prepared and adopted: <ul style="list-style-type: none">• Target an average staffing level of 1.5 police officers per 1,000 persons when the City population is less than 10,000.• Target an average staffing level of 1.25 police officer per 1,000 persons once the City reaches a population of 10,000 or more.
Action Item PF-14b	Explore options to staff full-time or part-time fire fighter and support staff.

Compliance with Fowler 2040 GP policies PF-11, PF-12, PF-13, and PF-14 and action items PF-14a and PF-14b, outlined above, would ensure that potential impacts related to fire protection are less than significant.

Police Protection:

Less than Significant Impact. As with fire protection services, growth facilitated by the Fowler 2040 GP would increase demand for police protection services within the planning area. It is anticipated that additional facilities may be required as demand increases, in order to maintain adequate levels of service for police protection. Currently, the Fowler Police Department has one Chief of Police, ten sworn officers, three sworn part-time officers, and two support staff members¹³⁴ and provides services from the police station located in downtown Fowler. Should additional facilities be required, those facilities will be planned and constructed as future development occurs to ensure that adequate staffing is maintained. Project-specific impacts will be evaluated at the time additional facilities are proposed. Although, the Fowler 2040 GP would facilitate development that would increase the demand for police protection services such that both additional staff and new facilities would likely be needed in order to accommodate growth in the planning area, the following policies and action items of the Fowler 2040 GP would ensure adequate police staff, infrastructure, and police protection services are provided.

Compliance with Fowler 2040 GP policy PF-14 and action item PF-14a outlined above would ensure that potential impacts related to police protection are less than significant.

Schools:

Less than Significant Impact. School districts were created by the State and are subject to the overview of the State legislature. Elected bodies (school boards) are responsible for budgeting and decision-making. Construction of new schools is under the purview of the State Department of Education, which establishes school site and construction standards. School construction is funded through a combination of local school bonds, state school bonds, and developer fees, including fees imposed under AB 2926,

¹³⁴ (City of Fowler 2021)

which fees may be used to construct new facilities and are updated periodically. The amount of fees imposed on developers is limited pursuant to SB 50. Specifically, GC Section 65995(3)(h) states:

“...the payment of statutory fees is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use or development of real property.”

Thus, SB 50 provides that a State or local agency may not deny or refuse to approve the planning or development of real property on the basis of a developer’s refusal to pay mitigation in excess of the established fee.

Buildout of the Fowler 2040 GP would increase demand for schools within the planning area. Growth accommodated by the Fowler 2040 GP would generate revenue for schools through development fees which would be allocated to the school district. Under the Ordinance, Fowler provides a method for financing interim school facilities necessitated by new residential developments causing conditions of overcrowding. Required adherence to this Ordinance would ensure that new development projects would not overcrowd the existing school system and that adequate school facilities are funded to meet growing demand.

Although, the Fowler 2040 GP would facilitate development that would increase the demand for school services, collection of applicable fees as noted above would ensure that impacts to schools are less than significant.

Parks:

Less than Significant Impact. Policy OS-1 requires parks to be developed to provide 2.0 acres/1,000 residents for Neighborhood Parks and 1.0 acres/1,000 residents for Community Parks. In order to meet the 1.0 acres/1,000 residents standard for community parks, Fowler would need approximately 48 acres of park land to accommodate a full buildout population of 48,131. In order to meet the 2.0 acres/1,000 residents standard for neighborhood parks, Fowler would need approximately 96 acres of park space to accommodate the full buildout population. The City currently has approximately 12.66 acres of developed parkland. The Fowler 2040 GP has a total of 55 acres designated for parks and open space on the land use diagram, inclusive of existing park space. Additionally, Policy OS-3 requires that five percent of the project area for all single-family residential projects be developed as usable open space. Should the open space be developed and dedicated to the standards required for neighborhood parks, approximately 123 acres of park land would be developed in addition to the acreage designated for park space on the land use diagram. This would result in a total of 178 acres of park space, which exceeds the minimum required to meet the standard. Should the usable open space not be dedicated, payment of an in-lieu fee, as adopted through the City’s Quimby Ordinance would be paid to the City for acquisition of additional park land. Additionally, the Quimby fee is collected from multiple family residential developments when subject to subdivision, which would also be paid to the City for acquisition of park land. The City also has an adopted park impact fee collected from all new residential development, including multi-family residential, which may be used for acquisition or construction of park land.

Table 4-39: Park Classifications and Service Level Requirements

Park Type	Description	Access Radius	Service Level/Residents
Community Plaza	Community Plazas provide opportunities for public gathering or social events within an urban context. There is no size requirement for public plazas.	n/a	n/a
Neighborhood Park	Neighborhood parks may be up to 2 acres in size and provide both passive and active open space within the community and within residential subdivisions when dedicated for public use.	0.25 Miles	2.0 per 1,000
Community Park	Community parks range in size from just over 2 acres to 25 acres and provide amenities for multiple age groups and opportunities for passive and active recreation.	0.5 Miles	1.0 per 1,000

Implementation of the following Fowler 2040 GP policies would facilitate the addition of new parks, and park facilities, in accordance with adopted standards.

- Policy OS-1** Parks shall be developed according to the park classifications, access radii, and service level requirements outlined in *Table 8-1*.
- Policy OS-3** Within single family residential projects, whether attached or detached, a minimum of 5% of the project site, not inclusive of existing or future major road rights-of-way, shall be developed with usable open space. Such open space shall be maintained by an assessment district, landscape/lighting district, homeowners' association, or other appropriate maintenance entity.
- Action Item OS-3a** Adopt standards that establish minimum requirements for open space areas to qualify as usable for purposes of meeting the 5% usable open space requirement. Such standards shall require a minimum of a one-half acre park site. The remaining acreage needed to satisfy the 5% usable open space requirement may be made up of neighborhood trails or other usable open space areas meeting the minimum established requirements. In instances where 5% of a project site's acreage, exclusive of rights of way, results in less than one-half acre, the park site for that project site may be constructed equal to the minimum acreage required to comply with 5% standard.
- Policy OS-4** Usable open space areas, as required in Policy OS-3, may fulfill the requirements for parkland dedication, per the City's Quimby Ordinance. To qualify, such land shall be dedicated to the City and meet the minimum established requirements for usable open space.

Compliance with the Quimby Ordinance and with Fowler 2040 GP policies OS-1, OS-3, and OS-4 outlined above would ensure that impacts related to parks are less than significant.

Other: Library Services

No Impact. As discussed above, full buildout under the Fowler 2040 GP would increase the demand for additional public services such as library services. The Fresno County Public Library provides library services in Fowler and is responsible for the planning of new library facilities and anticipating demand to meet existing and future population needs. The County will remain responsible for library services going forward and as such there would be no impacts.

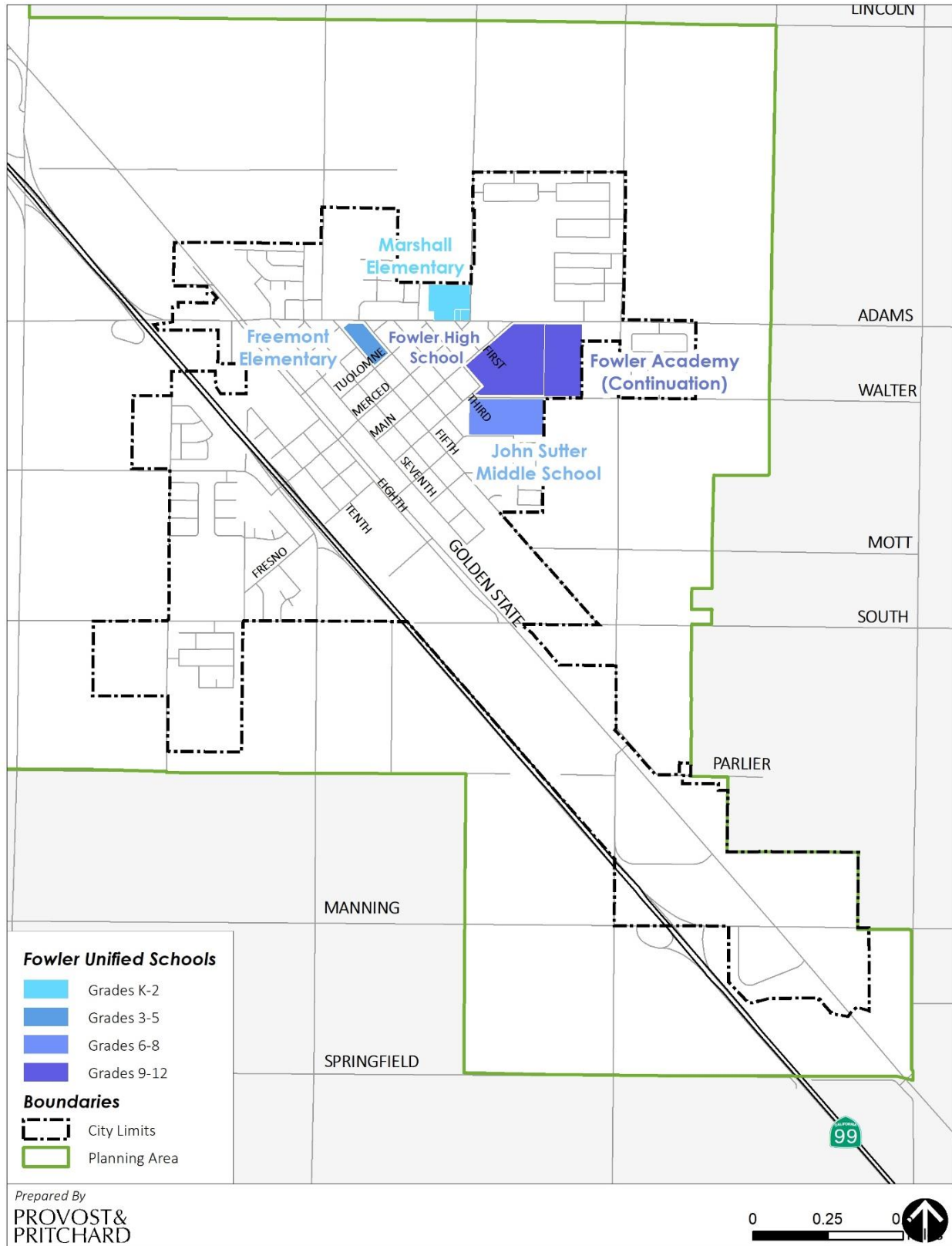
4.16.5 Mitigation Measures

No mitigation measures are required.

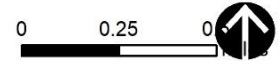
4.16.6 Cumulative Impacts

Cumulative development in Fresno County surrounding Fowler in combination with development proposed under Fowler 2040 GP may contribute to the need for additional public services including police, fire, school, library services, and park facilities. Implementation of Fowler 2040 GP would increase density and intensity of existing land uses, which could regionally impact public services. However, goals and policies contained within Fowler 2040 GP would ensure adequate levels of public service under future development. Therefore, Fowler 2040 GP would have incremental contribution to cumulative impacts associated with public services and would not be cumulatively considerable. Cumulative impacts would be less than significant.

Figure 4-17: Fowler Unified School District Facilities



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 PRITCHARD**



4.17 Recreation

This section evaluates impacts on recreational facilities, including an evaluation of existing park facilities and the planned development of future parks and recreational facilities, that could result from implementation of the Fowler 2040 GP.

4.17.1 Environmental Baseline

Fowler owns and operates four parks and one recreational facility which are managed by the Fowler Recreation Department. The parks provide residents various amenities such as playgrounds, bench seating, and picnic areas. The Edwin Blayney Senior Center is a recreational facility that provides a daily meeting place for senior citizens. See for some of the amenities provided by parks in Fowler. There are three additional parks that are located within recently developed subdivisions, Tract 5952, Tract 6188, and Tract 6274. These facilities are described in **Table 4-40** below. City park and recreational facilities are located throughout the City with most located east of SR 99. Nearly half of the City parks are less than 1 acre in size, offering passive recreational amenities and children's play areas.

Table 4-40: Existing Parks and Recreational Facilities

Facility	Amenities	Acres
Donny Wright Park	Irrigated grass lawn and trails for recreation	5.80
Panzak Park	Covered picnic area, amphitheater, large shade trees, playground equipment, and tennis courts	2.23
Veteran's Memorial Park	Benches on paved surfaces, a fountain, several flag poles, ornamental hedges, and rose gardens	0.08
L. V. Margaret Cowings Park	Irrigated grass lawn and shade trees	0.17
Tract 5952		2.00
Tract 6188		1.39
Tract 6274		0.99
Total		12.66

The Fowler Recreation Department offers community recreational and leisure activities, including the seasonal Summer Swim Program, and annual events such as the Fowler Summerfest Celebration, a weekly farmer's market during summer months, Pumpkin Carving festivity, Children's Christmas Shopping Sale, Easter Egg Hunt, and the Christmas Tree Lighting Ceremony. Additionally, the Edwin Blayney Senior Center offers a meeting place and specialized recreation opportunities for senior citizens, as noted above.

Although Fowler does not have an extensive system of pedestrian paths and trails, there is a class II bicycle lane along Adams Avenue from Vista to Temperance and Golden State Boulevard. Some areas within the City contain elements that make it easier to walk and ride, such as the downtown area. This is due to its short blocks, moderate density, occurrence of mature shade trees, and close proximity of destinations – all factors that contribute to walkability.

Figure 4-18: Park Amenities



Figure 4-19: Park Amenities



Figure 4-20: Park Amenities



4.17.2 Regulatory Setting

Federal

There are no federal regulations, plans, programs, or guidelines associated with recreation that are applicable to the Project.

State

Quimby Act

The 1975 California Quimby Act (GC Section 66477), authorizes cities and counties to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for operation and maintenance of park facilities. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or parkland and the type of development project upon which the fee is imposed. Cities with a high ratio of park space to residents can set a standard of up to 5 acres per 1000 persons for new development. Cities with a lower ratio can only require the provision of up to 3 acres of park space per thousand people. The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland.

Mitigation Fee Act

Enacted as AB 1600, the Mitigation Fee Act (GC Section 66000, et seq.) requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development plan on which it is to be levied.

Local

Fowler Subdivision Ordinance

Fowler's Subdivision Ordinance establishes open space requirements as authorized by the Fowler GP and Quimby Act. Residential subdivisions greater than 50 lots are required to provide a portion of the Quimby Act ratio within their subdivision. The standard for park space is 3.0 acres per 1,000 residents.

Fowler Municipal Code

Article 2 of Chapter 2 of Title 2 of the FMC establishes the Recreation Commission, which is composed of seven (7) appointed citizens. Its duties consist of:

Planning and recommending to the City Council, by way of regular reports, actions as necessary to organize community sports of all kinds, community singing, music, games, plays, celebrations, and similar activities;

Cooperating with individuals or organizations interested in public recreation and encourage the provision of recreation for the citizens of the City.

The goal of the Recreation Commission is to meet the needs of the City providing organized, quality, balanced, and wholesome recreational programs that are free or at a reasonable cost to participants, and to constantly review and evaluate existing programs for quality and develop new and innovative programs.

Section 9-5.101 of the Fowler Municipal Code outlines the general purpose of Title 9 (Zoning), which is to promote and protect the public health, safety, and general welfare.

Articles 8 (RM – Multi-Family Residential Districts) and 16 (Design Review) establish the open space requirements of multifamily projects and residential subdivisions.

4.17.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed project would have a significant impact related to recreation if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.17.4 Impacts

Threshold 1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. Fowler's existing 2025 GP adopted a policy requiring 3.0 acres of parkland per 1,000 residents. With an estimated 2019 population of 6,605 residents, Fowler has a parks and open space deficit of approximately nine acres. The Fowler 2040 GP also requires 3.0 acres of parkland per 1,000 residents. Buildout of the Fowler 2040 GP would add approximately 41,526 additional residents within the planning area, resulting in a total estimated population of 48,131.

As discussed under [Section 4.16](#), policy OS-1 requires the provision of 2.0 acres/1,000 residents for neighborhood parks and 1.0 acres/1,000 residents for community parks. Further, policy OS-3, policy OS-3 requires that five percent of the project area for all single-family residential projects be developed as

usable open space. Development of park space in accordance with these policies would result in a total of 178 acres of park space, which exceeds the minimum required to meet the standard. Additionally, the City also has an adopted park impact fee collected from all new residential development, including multi-family residential, which may be used for acquisition or construction of park land.

The following policies of the Fowler 2040 GP would facilitate the addition of new parks and open space facilities to comply with the target parkland-to-population ratio and reduce the impact of overuse of existing facilities such that no substantial physical deterioration is expected to occur. The following policies also require payment of parks fees that would contribute toward the maintenance of City parks, trails, and recreation system.

- Policy OS-1** Parks shall be developed according to the park classifications, access radii, and service level requirements outlined in *Table 8-1*.
- Policy OS-3** Within single family residential projects, whether attached or detached, a minimum of 5% of the project site, not inclusive of existing or future major road rights-of-way, shall be developed with usable open space. Such open space shall be maintained by an assessment district, landscape/lighting district, homeowners' association, or other appropriate maintenance entity.
Adopt standards that establish minimum requirements for open space areas to qualify as usable for purposes of meeting the 5% usable open space requirement. Such standards shall require a minimum of a one-half acre park site. The remaining acreage needed to satisfy the 5% usable open space requirement may be made up of neighborhood trails or other usable open space areas meeting the minimum established requirements. In instances where 5% of a project site's acreage, exclusive of rights of way, results in less than one-half acre, the park site for that project site may be constructed equal to the minimum acreage required to comply with 5% standard.
- Action Item OS-3a** Usable open space areas, as required in Policy OS-3, may fulfill the requirements for parkland dedication, per the City's Quimby Ordinance. To qualify, such land shall be dedicated to the City and meet the minimum established requirements for usable open space.
- Policy OS-4** The City shall use a broad range of funding and economic development tools to ensure high quality development, maintenance, and programming of the City parks, trails, and recreation system.
- Policy OS-17** All residential projects shall be subject to the payment of park development impact fees, as adopted by resolution of the City Council. Payment of these development impact fees shall be in addition to any parkland dedication or in-lieu fee payment requirements in accordance with Fowler's adopted Quimby Act Ordinance, as applicable, except as provided for in *Policy OS-6*.
- Policy OS-18**

Table 4-41: Park Classifications and Service Level Requirements

Park Type	Description	Access Radius	Service Level/Residents
Community Plaza	Community Plazas provide opportunities for public gathering or social events within an urban context. There is no size requirement for public plazas.	n/a	n/a
Neighborhood Park	Neighborhood parks may be up to 2 acres in size and provide both passive and active	0.25 Miles	2.0 per 1,000

Park Type	Description	Access Radius	Service Level/Residents
	open space within the community and within residential subdivisions when dedicated for public use.		
Community Park	Community parks range in size from just over 2 acres to 25 acres and provide amenities for multiple age groups and opportunities for passive and active recreation.	0.5 Miles	1.0 per 1,000

Compliance with the Fowler 2040 GP policies OS-1, OS-3, OS-4, OS-17, and OS-18 outlined above would ensure that potential impacts related to accelerated deterioration of existing neighborhood and regional parks or other recreational facilities are less than significant.

Threshold 2: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. The Fowler 2040 GP anticipates the development of new parks, as discussed under Threshold 1 above, and recreational facilities, including a community trail system as shown in [Figure 4-22](#). However, no construction is proposed at this time as development of the planned park and recreation facilities would occur as anticipated growth occurs under the Fowler 2040 GP. While future development of new parks and recreational facilities could have a potential environmental impact, a lack of project-specific details would result in an analysis that is speculative in nature at this time. Future construction of new parks and recreational facilities would be evaluated at the time they are proposed and would comply with CEQA as applicable to ensure that potential environmental impacts are evaluated as required. Further, any future projects would be subject to compliance with all applicable federal, State, and local requirements, including those that would minimize potential environmental impacts. Future development projects would also be required to use the most recent efficiency standards intended to reduce environmental impacts on a project specific level. Implementation of the newest efficiency standards would limit any future impacts to energy, air quality, and GHGs. In addition, during construction of such infrastructure, contractors would be required to adhere to industry BMPs, minimizing potential impacts to a less than significant level. As adoption of the Fowler 2040 GP does not authorize construction of park and recreation facilities and additional analysis will be conducted at the time development of such facilities is proposed, the impact is anticipated to be less than significant.

4.17.5 Mitigation Measures

Mitigation measures are not required.

4.17.6 Cumulative Impacts

The scope for potential cumulative impacts to recreation includes all projects within the planning service area. The analysis in this section examines the potential impacts to parks and recreational facilities in Fowler as a result of all potential buildout in the service areas for these resources. Therefore, the analysis of impacts to these services and associated facilities is cumulative in nature. The Fowler 2040 GP would result in less than significant impacts parks and recreation facilities. Therefore, the Fowler 2040 GP would result in less than significant cumulative impacts to recreational resources and open space.

Figure 4-21: Park Facilities

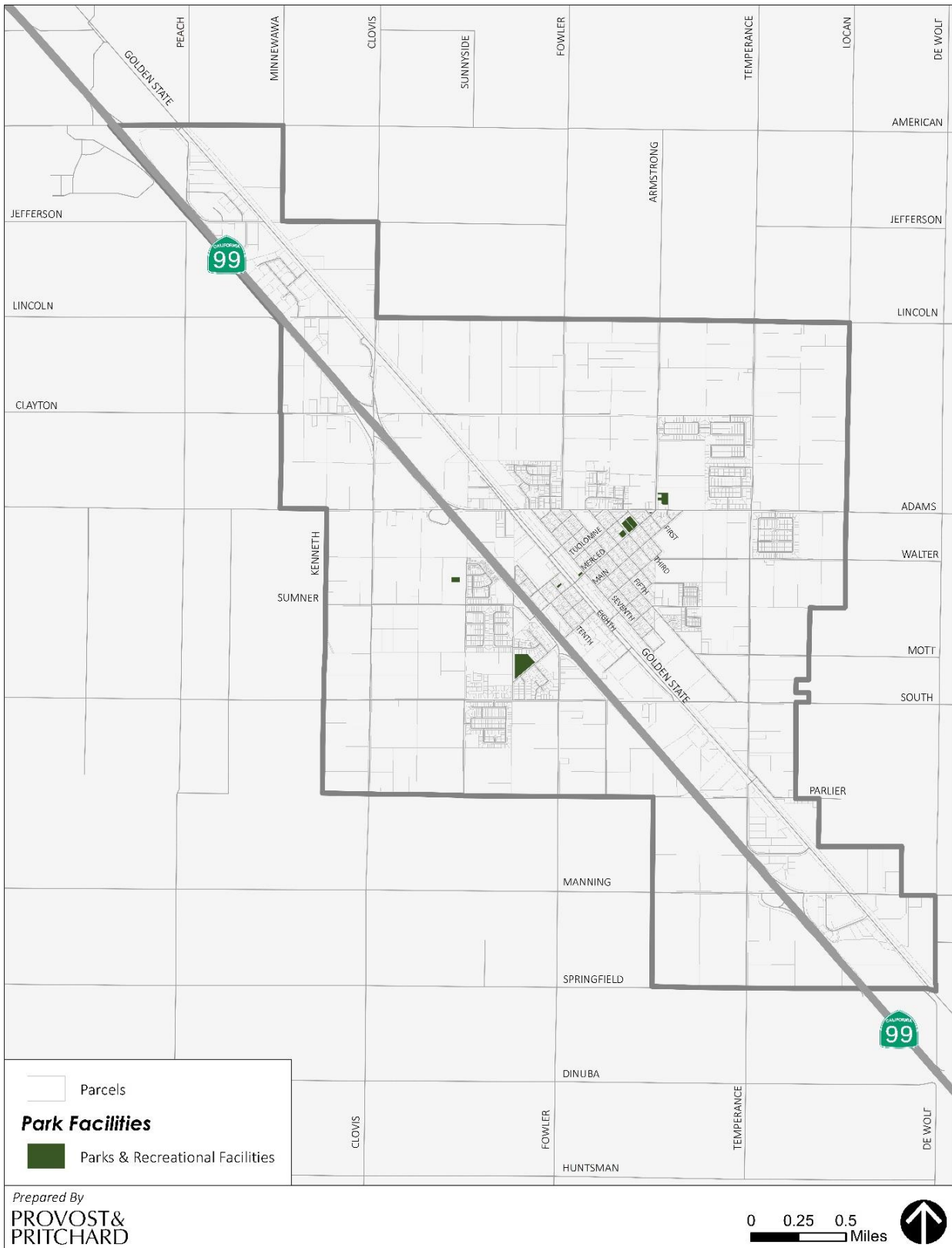
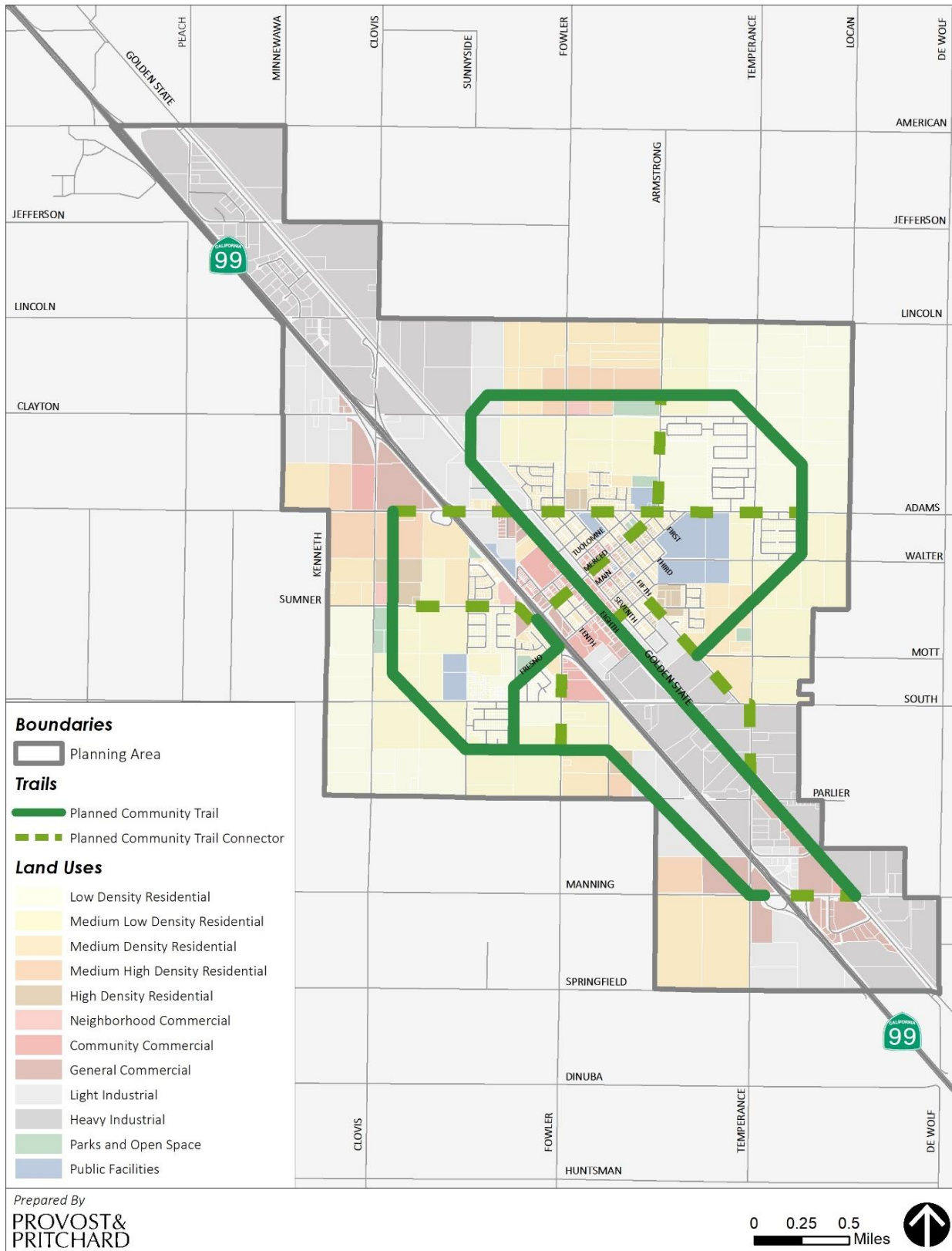


Figure 4-22: Trail Facilities



4.18 Transportation

This section evaluates the impacts on the local and regional circulation system, including an analysis of the potential for the proposed GP to increase local and regional traffic VMT, increase in hazards due to a design feature, interfere with emergency access, or conflict with applicable alternative transportation programs, that could result from implementation of the Fowler 2040 GP.

4.18.1 Environmental Baseline

A city's circulation network provides for the movement of people, goods, energy, and other resources throughout its community. The circulation network is aligned with existing and future land uses. Understanding how a community operates, and its physical infrastructure and capacity is important in analyzing a its transportation system. The purpose of the General Plan Circulation Element is to provide for a safe, convenient and efficient transportation system.

Personal automobile use is by far the dominant mode of transportation to work in the planning area, with almost 90 percent of workers traveling by either car, truck, or van. Approximately 90 percent of automobile users drove alone to work, while 10 percent participated in carpools. Approximately 2 percent of workers either walked or traveled by bicycle, while 4.5 percent of the workforce works from home. There was zero utilization of public transit as a means of travel to work.¹³⁵

Existing Major Roadways

The roadway system within the Fowler planning area includes SR 99 as well as numerous City and County routes. Fowler established a hierarchy of roads, also known as a functional classification system, which groups streets into categories by the type of service they provide. There are five classifications, as follows:

- **Freeways.** Freeways carry regional traffic through the community with access only at major street interchanges. The only Freeway in the planning area is SR 99;
- **Expressways.** Expressways connect regional destinations on the non-freeway system and generally pass through several jurisdictions. Traffic carrying capacity is maintained through access control at 2-mile intervals. The only Expressway in the planning area is Temperance Avenue;
- **Arterials.** Arterials serve as the principal network for cross-town traffic flow. They connect areas of major traffic generation within the urban area and link important county roads with state highways. They also provide for the distribution and collection of through traffic to and from collector and local streets. America, Fowler, and Manning Avenues and Golden State Boulevard are designated Arterials;
- **Collectors.** Collectors provide for traffic movement between arterial and local streets, traffic movement within and between neighborhoods and major activity centers, and limited direct access to abutting properties. 5th, 7th, 8th, Adams, Armstrong, Clayton, Fowler, Fresno, Lincoln, Merced, Parlier, South, Springfield, Sumner, Sunnyside, Walter are all designated Collectors;
- **Local Streets.** Two- to three-lane roadways designed to provide direct access to properties, while discouraging excessive speeds and volumes of motor vehicle travel incompatible with neighborhoods being served through the implementation of multiple, well connected routes and traffic calming measures.

¹³⁵ (United States Census Bureau 2019)

Accessing the Planning Area

SR 99 is the major regional transportation route into and out of the planning area. There are four exits from SR 99 that provide direct access into the planning area: Clovis Avenue, Adams Avenue, Merced Street, and Manning Avenue. Other notable entrances into Fowler include North Fowler Avenue, South Fowler Avenue, South Temperance Avenue, Golden State Boulevard, and East South Avenue.

While Fowler’s position along SR 99 provides easy access to northern and southern California, it also acts as a dominant physical barrier, separating the east and west sides of the planning area. Most land area lies on the east side of SR 99; however, substantial residential land uses exist west of SR 99. Retail and industrial uses are generally clustered along SR 99 to the east of the highway. Only Merced Street, Adams Avenue, and Manning Avenue provide access across the highway, limiting the flow of both automobile and pedestrian traffic between the east and west sides of the planning area.

Pedestrians and Bicycle Facilities

While there have been some recent additions to bicycle and pedestrian facilities in Fowler, the planning area does not have an extensive system of bike lanes, bike paths, or walking trails. The ease of walking and driving in Fowler varies depending on the area. The downtown area is more walkable due to its short blocks, moderate density, occurrence of mature trees for shading, and close proximity of destinations. In addition, there is a class II bicycle lane along Adams Avenue from Vista to Temperance and Golden State Boulevard.

The Fresno Regional Active Transportation Plan identifies current bicycling and sidewalk facilities in Fowler as of 2017. **Table 4-42** provides a summary of those facilities. **Table 4-42** below provides an overview of these bicycle facilities throughout the planning area.

Table 4-42: Bicycle and Pedestrian Facilities

Bike Facilities Designation	Description	Miles
BIKE PATH (CLASS I)	Class I bikeways, also known as bike paths or shared-use paths, are facilities with exclusive right of way for bicyclists and pedestrians, away from the roadway and with cross flows by motor traffic minimized. Some systems provide separate pedestrian facilities.	0.0
BIKE LANE (CLASS II)	Class II bikeways are bike lanes established along streets and are defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel. Bike lanes are one-way facilities, typically striped adjacent to motor traffic travelling in the same direction. Contraflow bike lanes can be provided on one-way streets for bicyclists travelling in the opposite direction.	7.0
BIKE ROUTE (CLASS III)	Class III bikeways, or bike routes, designate a preferred route for bicyclists on streets shared with motor traffic not served by dedicated bikeways to provide continuity to the bikeway network. Bike routes are generally not appropriate for roadways with higher motor traffic speeds or volumes. Bike routes are established by placing bike route signs and optional shared roadway markings (sharrow) along roadways.	1.0
SEPARATED BIKEWAY/CYCLE TRACK (CLASS IV)	A Class IV separated bikeway, often referred to as a cycle track or protected bike lane, is for the exclusive use of bicycles, physically separated from motor traffic with a vertical feature. The separation may include, but is not limited to, grade separation, flexible posts, inflexible barriers, or on-street parking. Separated bikeways can provide for one-way or two-way travel.	0.0
SIDEWALK	Paved areas immediately adjacent to the vehicular right-of-way for the exclusive use of pedestrians. Sidewalks may be used by cyclists unless prohibited.	42.9

Vehicle Miles Traveled

As shown in **Table 4-43** and **Table 4-44**, and as can be reasonably expected due to Fowler’s distance from major activity centers, VMT averages for Fowler are generally greater than the countywide average. The

residential VMT/person for the City is 20.0 compared to 16.1 for the County as a whole. Employment VMT averages reflect a similar pattern. Fowler is 35.6 VMT/employee compared to 25.6 for the overall County.

Public Transportation

The Fresno County Rural Transit Agency

The Fresno County Rural Transit Agency (FCRTA) provides general public transit service to rural communities throughout Fresno County, keeping the Central Valley connected and allowing passengers to conveniently travel within their community and throughout the Central Valley. FCRTA provides both scheduled, fixed route services with designated bus stops along specific routes, as well as reservation-based, demand responsive service that offers curb-to-curb transportation.¹³⁶ The Southeast Transit and Kingsburg to Reedley College Transit routes make stops at the intersection of Merced and 7th Street and at the Valley Children's Healthcare Center.

AMTRAK

Fresno County's sole AMTRAK station is located in downtown Fresno and provides AMTRAK services to San Francisco and Sacramento to the north, as well as Bakersfield and Los Angeles to the south. The AMTRAK San Joaquin line provides seven trains daily traveling along both north and southbound routes. The San Joaquin line joins with the Union Pacific Railroad line southeast of downtown Fresno, then separates and moves south, bypassing Fowler.

There is not a train terminal in Fowler. The closest station to Fowler is in downtown Fresno, approximately 11 miles to the north. The next closest station is in Hanford, approximately 23 miles to the south.

High Speed Rail Authority

The California High-Speed Rail Authority is responsible for planning, designing, and building the California high speed rail. Once complete, the rail will connect major regions of the state. Phase 1 will run from San Francisco to Los Angeles. Subsequent phases will extend to Sacramento and San Diego.

The first phase of rail construction will connect Merced to Bakersfield, with stations planned in downtown Merced, downtown Fresno, and downtown Bakersfield. As of July 2019, construction in Fresno County was underway, with work beginning on construction of the arches at the San Joaquin River Viaduct and the final paving at Avenue 8 in Madera.

Rideshare

Since the last update to the General Plan, on-demand rideshare services, such as Uber and Lyft, are now available to Fowler residents. These rideshare programs are privately operated and provide on-demand rideshare service within Fowler and throughout Fresno County with the use of a smart phone application.

Airports

There are no existing airports within the limits of Fowler. The nearest airports are as follows:

Fresno-Chandler Executive

- Airport
- Fresno Yosemite International Airport
- Reedley Municipal Airport

¹³⁶ (Fresno County Rural Transit Agency 2021).

- Selma Airport

Movement of Goods

Truck Routes

There are several local businesses that rely on transporting goods via SR 99. Movement of goods from those businesses relies on prescribed trucking routes in order to navigate to the nearest SR 99 intersection. The estimated pass-through truck trips along SR 99 within Fowler and Golden State Boulevard is not currently known.

In 2016, Fresno Council of Governments published the San Joaquin Valley 1-5/SR 99 Goods Movement Study. The study identified truck traffic generators, congested segments, collision hotspots, and truck service facilities along the 99 corridor. The study identified that while Fowler is impacted by traffic along these freeways, Fowler does not have a significant amount of congested or critical safety segments.¹³⁷

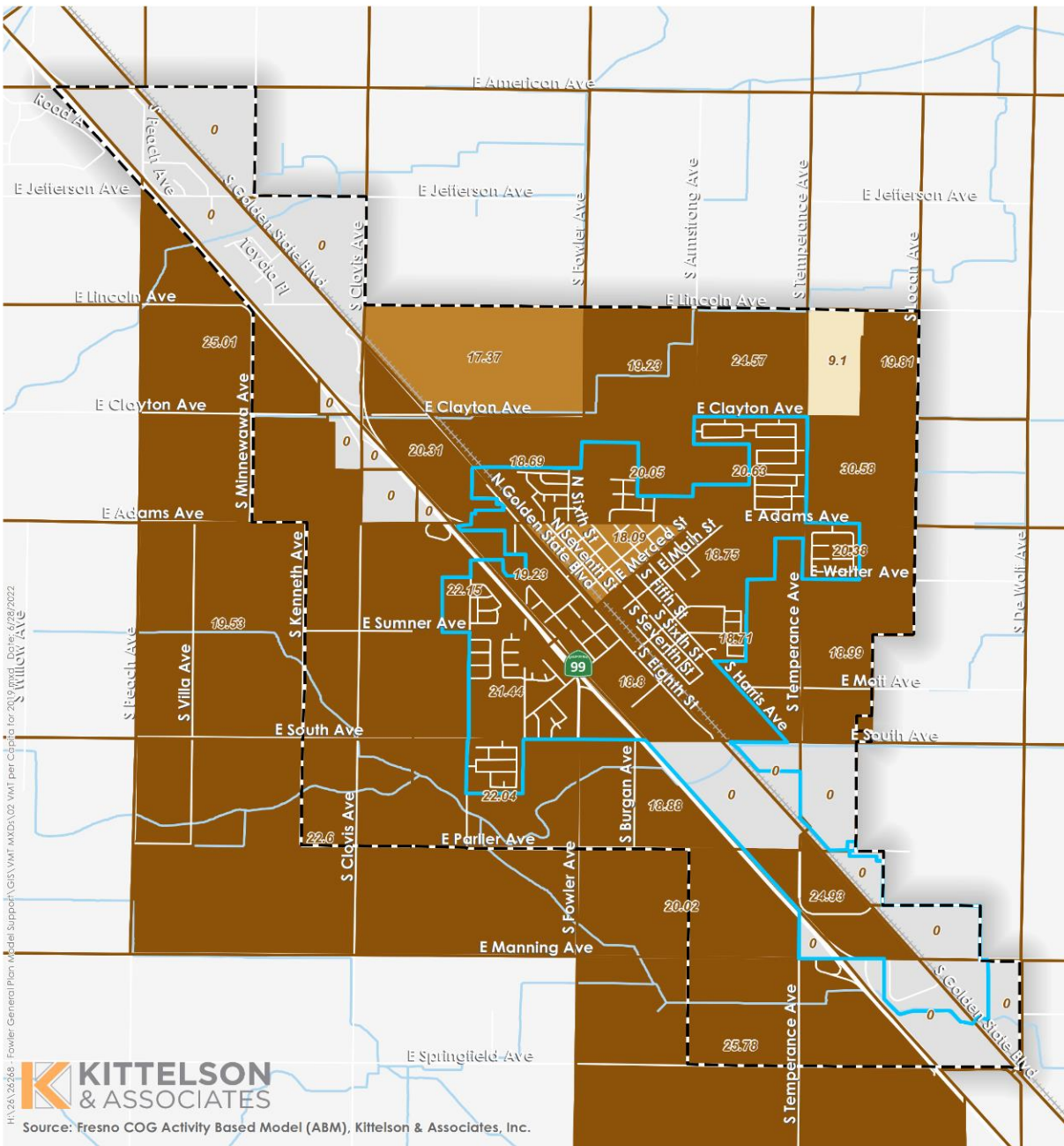
The Fowler 2040 GP establishes preferred designated truck routes as part of the circulation element. Fowler's municipal code expands that list of designated truck routes and offers clarification as to the purpose and types of vehicles which must travel along such routes.

Cargo

The Union Pacific Railroad runs through and provides freight services for Fowler. The Fresno Yosemite International Airport is the major air cargo system in the San Joaquin Valley. Although services are provided via rail and air, trucks are expected to continue to be the predominant method for goods movement in Fowler.

¹³⁷ (Cambridge Systematics, Inc., 2016)

Table 4-43: Existing Vehicle Miles Traveled per Capita



- 2019 VMT per Capita by TAZ**
- No Data
 - Less than 13% Below Regional Average
 - 13% Below to Regional Average
 - Regional Average to 13% Above
 - More than 13% above Regional Average

- Sphere of Influence
- Fowler City Limits

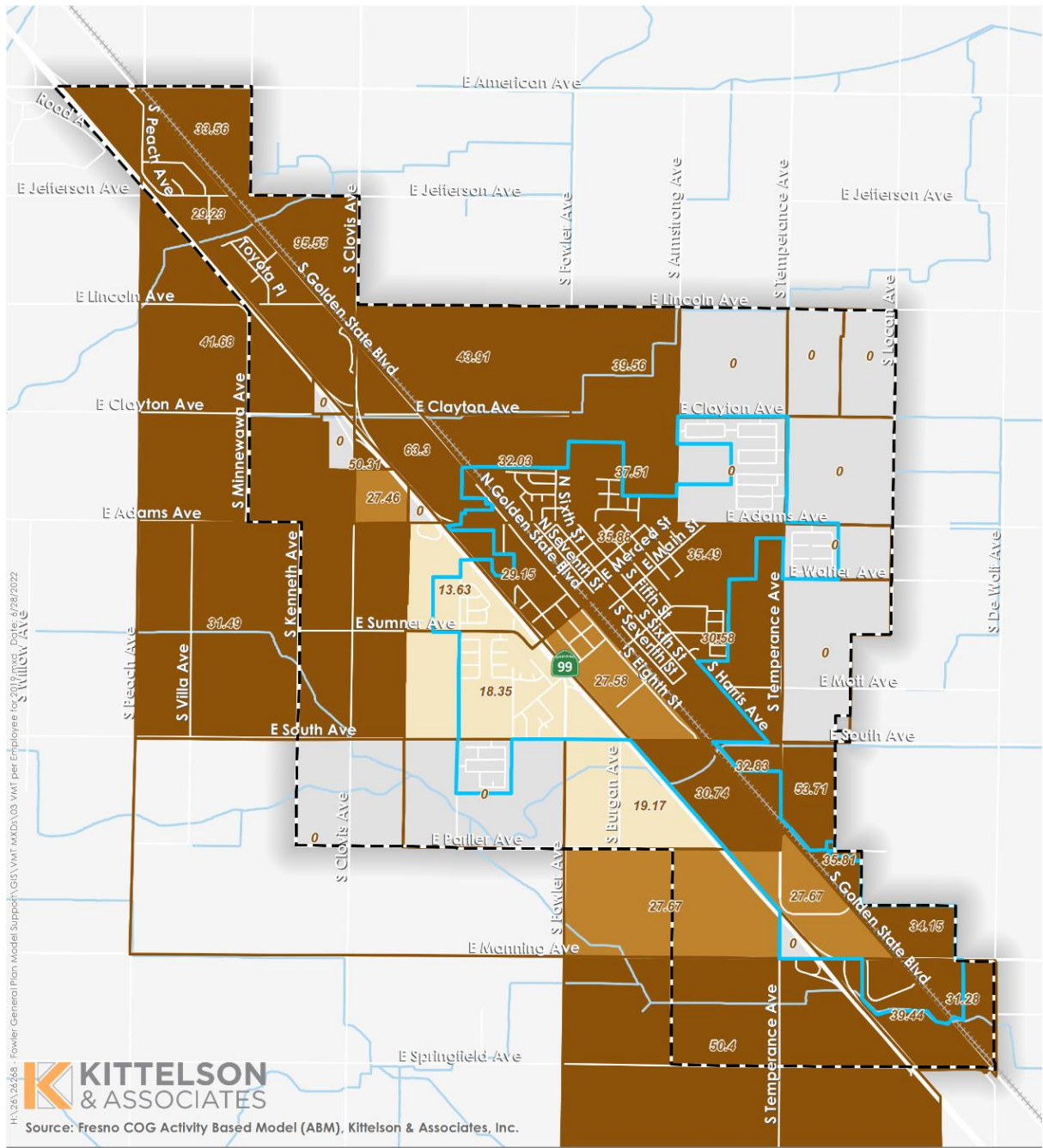


Figure 2

**VMT per Capita for 2019
 Fowler, California**

VMT Per Capita Regional Average = 16.1

Table 4-44: Existing Vehicle Miles Traveled per Employee



- 2019 VMT per Employee by TAZ**
- No Data
 - Less than 13% Below Regional Average
 - 13% Below to Regional Average
 - Regional Average to 13% Above
 - More than 13% above Regional Average

- Sphere of Influence
- Fowler City Limits

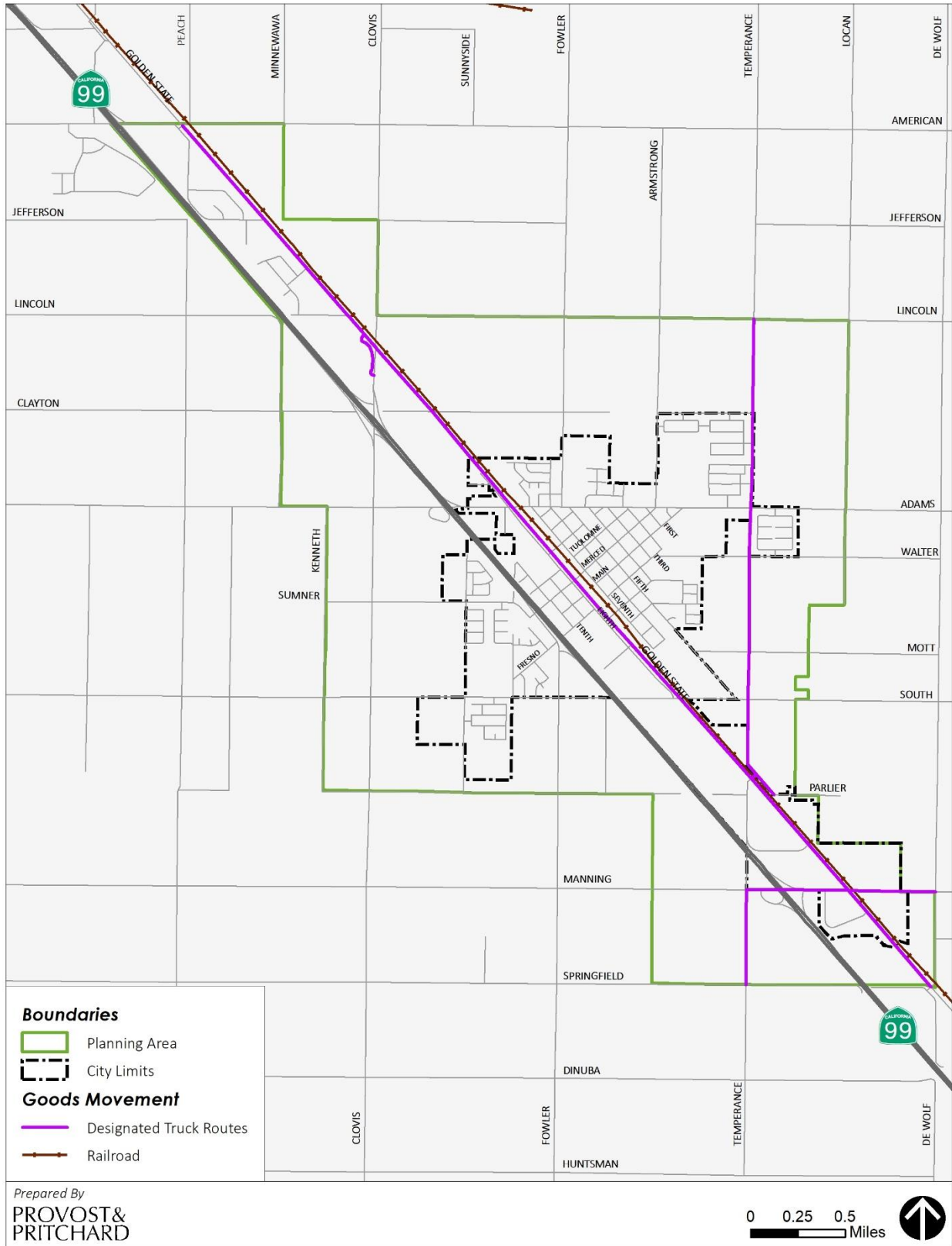
0 0.5 Miles

Figure 3

**VMT per Employee for 2019
Fowler, California**

VMT Per Employee Regional Average = 25.6

Table 4-45: Existing Designated Truck Routes



4.18.2 Regulatory Setting

Federal

Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the United States Access Board, an independent federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. The guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. The guidelines apply to all proposed roadways in the project area.

Federal Highway Administration

The FHWA is responsible for the federally funded roadway system, including the interstate highway network and portions of the primary State highway network. FHWA funding is provided through the Fixing America's Surface Transportation Act. Federal funds can be used to fund eligible local transportation improvements, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, pedestrian facilities, and transit system upgrades.

State

Senate Bill 743

SB 743, which was signed into law by Governor Brown in 2013, tasked OPR with establishing new criteria for determining the significance of transportation impacts under CEQA. SB 743 requires the new criteria to “promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” It also states that alternative measures of transportation impacts may include “vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated.” SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see PRC Section 21099(b)(2)). In addition to new exemptions for projects that are consistent with specific plans, the draft SB 743 guidelines replace congestion-based metrics, such as auto delay and level of service, with VMT as the basis for determining significant impacts, unless the guidelines provide specific exceptions.

The California Complete Streets Act

The California Complete Streets Act (AB 1358) was signed into law in 2008 and became effective in January 2011. AB 1358 requires any substantive revision of the circulation element of a city or county's general plan to identify how the jurisdiction will safely accommodate the circulation of all users of the roadway including pedestrians, bicyclists, children, seniors, individuals with disabilities, and transit riders, as well as motorists. Subsequently, AB 1358 requires any substantive revision of the circulation element of a city or county's general plan to identify how they will safely accommodate the circulation of all users of the roadway including pedestrians, bicyclists, children, seniors, individuals with disabilities, and transit riders, as well as motorists.

California Department of Transportation

Caltrans is charged with managing and maintaining the State's highway system. Caltrans directly manages more than 50,000 lane miles of State and federal highways, as well as over 12,000 highway bridges; permits

more than 400 public-use airports; and operates three of the top five Amtrak intercity rail services. Caltrans' Strategic Management Plan 2015 - 2020 defines five primary goals: Safety and Health; Stewardship and Efficiency; Sustainability, Livability, and Economy; System Performance; and Organizational Excellence.

Caltrans Deputy Directive 64-R1: Complete Streets – Integrating The Transportation System

In 2001, Caltrans adopted Deputy Directive 64-R1; a policy directive related to non-motorized travel throughout the State. In October 2008, Deputy Directive 64-R1 was strengthened to reflect changing priorities and challenges. Deputy Directive 64-R1 states:

Caltrans views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system. Providing safe mobility for all users, including motorists, bicyclists, pedestrians and transit riders, contributes to the Caltrans' mission/vision: "Improving Mobility across California."

Successful long-term implementation of this policy is intended to result in more options for people to go from one place to another, less traffic congestion and GHG emissions, more walkable communities (with healthier, more active people), and fewer barriers for older adults, children, and people with disabilities.

Sustainable Community Strategy (SB 375)

SB 375 requires MPOs to adopt an SCS or APS that will address land-use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld. In 2018, CARB adopted updated SB 375 targets.

Local

Fresno County Regional Transportation Plan

FCOG's 2022 RTP comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2040. FCOG's first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-range transportation plans extend at least 20 years into the future. As the federally designated MPO and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region's 15 cities, the County of Fresno, staff from related local public agencies, the SJVAPCD, Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, and each element is augmented by additional documentation. The RTP also contains a chapter that establishes the SCS to show how integrated land use and transportation planning can lead to more efficient use of autos and light trucks, as well as improve the overall quality of life in the region.

Fresno County Intelligent Transportation System Strategic Plan

The Fresno County Intelligent Transportation System (ITS) Strategic Plan contains goals and policies to improve mobility and enhance safety within the region. Nine core ITS components include Freeway Management; Transit Management; Incident Management; Electronic Fare Payment; Electronic Toll Collection; Railroad Grade Crossings; Emergency Management Services; and Regional Multimodal Traveler Information. The Plan can also be used to assist Fowler with application for federal or State funding for specific types of ITS projects.

Measure “C”

Measure “C” is the half-percent sales tax for transportation passed by Fresno County in 1986 and managed by the Fresno County Transportation Authority. The Measure provides funding for transportation projects (highway, transit, and ridesharing) over a 20-year period. Measure C funds are used by Fowler to repair streets and improve the existing and planned transportation system. The Measure C program will sunset in 2027.

Vehicle Miles Traveled Thresholds. In December 2021, the City adopted the *Fresno County SB 743 Implementation Regional Guidelines*, which establishes VMT thresholds and guidelines to address the shift from delay-based Level of Service (LOS) CEQA traffic analyses to VMT CEQA traffic analyses as required by SB 743. This document serves as a detailed guideline for preparing VMT analyses consistent with SB 743 requirements for development projects, transportation projects, and plans. This GP as well as subsequent projects will be required to follow the guidance provided in the City’s document for preparation of CEQA VMT analysis. The document includes the following:

- Definition of region for VMT analysis;
- Standardized screening methods for VMT threshold compliance data;
- Recommendations for appropriate VMT significance thresholds for development projects, transportation projects, and plans; and
- Feasible mitigation strategies applicable for development projects, transportation projects, and plans

4.18.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed project would have a significant impact on transportation if it would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Consideration of VMT as a threshold for traffic impact studies as a substitute to Level of Service (LOS) is required by California State law (Senate Bill 743) effective July 2020. In response to SB 743, OPR updated the existing methods for evaluating transportation impacts under CEQA. OPR established a VMT metric to assess traffic impacts instead of the prevailing LOS standard. However, although auto delay must no longer be considered a significant impact under CEQA, SB 743 does not prevent local jurisdictions from establishing locally appropriate metrics as a standard outside of the CEQA process.

As noted above, the City has adopted the Fresno Council of Governments’ *Fresno County SB 743 Implementation Regional Guidelines* report as its threshold of significance, in which the following threshold applies to the Fowler GP:

“The Technical Advisory provides a single sentence as consideration for land use plans. It states, “A general plan, area plan, or community plan may have a significant impact on transportation if

proposed new residential, office or retail land uses would in aggregate exceed the respective thresholds recommended above.” This recommendation refers to a threshold of exceeding 13 percent below the existing regional average, for residential and office uses and no net gain for retail land uses.”¹³⁸

4.18.4 Impacts

Threshold 1: Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact. The Fowler 2040 GP Circulation Element includes policies to encourage active transportation. This includes policies for complete streets, developing bicycle and pedestrian facilities, and integrating transit facilities into the circulation system. The Fowler 2040 GP also includes policies for maintaining LOS standards, but this is no longer considered an environmental impact under the CEQA Guidelines. Fowler’s transportation network has pedestrian, bicycle, and public transit facilities to support modes of transportation alternative to the personal automobile. Currently, bicycle facilities are limited, however, according to the Fresno County Regional Active Transportation Plan, over 25 miles of planned bicycle facilities and over seven miles of pedestrian facilities are identified in the planning area.

Under the Complete Streets Act, general plans are required to include planning for “complete streets” which are streets that meet the needs of all users of the roadway, including pedestrians, bicyclists, users of public transit, motorists, children, the elderly, and the disabled.

Threshold 2: Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)?

VMT Analysis

Less than Significant Impact. The Fresno COG Activity Based [Travel Demand] Model (ABM) was used by Kittleson & Associates to estimate existing (2019) and model horizon year (2042) average VMT per capita and VMT per employee for the traffic analysis zones (TAZs) that comprise the Fowler General Plan. The analysis ([Appendix I](#)) utilized both the adopted VMT guidelines, regionwide VMT thresholds for employment land uses, and citywide VMT thresholds for residential land uses. The number of dwelling units and employment for the planning area were calculated at buildout, reduced based on general buildout assumptions,¹³⁹ and used to generate land use input files for running the activity-based model. These land use input files were then run through the activity-based model to develop model horizon year (2042) forecasts with the buildout of the planning area.

Table 4-46 below presents VMT per capita and VMT per employee findings for existing conditions in Fresno County and for the planning area at buildout in the model horizon year. Based on the VMT Guidelines adopted by Fowler, a GP would have a significant impact if the VMT per capita and VMT per employee of the planning area exceeded the same metrics for existing conditions in all of Fresno County.

¹³⁸ (LSA Associates 2021)

¹³⁹ Residential and employment land uses were modeled at 80% of allowable density and 0.2 to 0.3 floor area ratio, respectively, as most development does not occur at maximum capacity. See Appendix I for more information.

Table 4-46: VMT per Capita and VMT per Employee – Existing and Horizon Year

Trip Type	VMT per Capita	VMT per Employee
Fresno County (2019)	16.1	25.6
Fowler General Plan (2042)	12.3	16.7
Threshold	14.0	22.3
Significant Impact?	No	No
<i>Source: Fresno COG Travel Demand Model, Kittelson & Associates, Inc. 2022.</i>		

As [Table 4-46](#) shows, the projected VMT per capita and VMT per employee in the planning area are lower than existing conditions. Under the Fowler GP, VMT per capita is 3.8 lower, or 23% lower, while VMT per employee is 8.9 lower, or 34% lower. The decrease in VMT is the result of the proposed land use mix within the planning area. The retail and employment opportunities keep the VMT per capita lower than the County average, while the large number of dwelling units near the employment-generating land uses allows employees to live close to work resulting in a VMT per employee that is lower than the County average today.

RTP/SCS Analysis

The RTP/SCS serves as the planning document for improving the sustainability and transportation system of the region. [Table 4-47](#) addresses the proposed Fowler General Plan consistency with the goals of the 2018 RTP/SCS. The analysis in this table concludes that the Fowler General Plan would be consistent with the 2018 RTP/SCS. Therefore, implementation of the proposed Fowler General Plan would not result in significant land use impacts related to the 2018 RTP/SCS. Goals in the 2018 RTP/SCS goals focus on transit, transportation and mobility, and protection of the environmental and health of residents. Consistency with regional population growth projections is addressed separately in [Section 4.15](#), Population and Housing. A general plan growth forecast typically exceeds the population and housing projections because buildout of the Fowler General Plan is not tied to a development timeline, whereas FCOG forecasts are demographic projections based on a time horizon. Therefore, the analysis in the table below focuses on consistency between the proposed Fowler General Plan and the policies of the RTP/SCS.

Table 4-47: RTP/SCS Consistency Analysis

RTP/SCS Policy	Project Consistency Analysis
a) An efficient, safe, integrated, multimodal transportation system.	Consistent. Policy MOB-18 seeks to improve access to public transit Citywide.
b) Improved mobility and accessibility for all, including the protected populations in accordance with federal and state statutes.	Consistent. Policy MOB-18 seeks to improve access to public transit Citywide.
c) Coordinate planning that is consistent with efforts that affect the region.	Consistent. Policies MOB-23, MOB-24, MOB-25, MOB-26 directs the City to coordinate regional agencies to improve access
d) A multimodal regional transportation network compatible with adopted land use plans and consistent with the intent of SB375 (Senate Bill 375 also known as the Sustainable Communities Protection Act of 2008).	Consistent. Policy MOB-14 directs the City to identify opportunities for a multi-modal transit hub in the planning area.
e) Encourage and prioritize full, fair, and equitable participation by all affected communities in transportation decision-making and planning processes.	Consistent. Policy CH-22 directs the City to create accessible opportunities for all, regardless of race, color, national origin, or income to engage in decision-making processes.

RTP/SCS Policy	Project Consistency Analysis
f) Actively work to ensure equitable distribution of the benefits and burdens of transportation projects.	Consistent. Policy MOB-9 allows for new development to address gaps in the active transportation network.
g) Promote the improvement and expansion of accessible transportation options to serve the needs of all residents, especially those who have historically faced disproportionate transportation burdens.	Consistent. Policies CH-22 and MOB-15 encourages the development of paratransit services and increase engagement with affected communities.
h) Encourage alternatives to single-occupancy vehicles that reduce VMT and greenhouse gas emissions.	Consistent. As described below, vehicle miles traveled per both capita and employee would significantly decrease compared to existing conditions.
i) Support investment in and promotion of active transportation and transit to improve public health and mobility, especially in historically underinvested areas.	Consistent. Policy MOB-9 allows for new development to address gaps in the active transportation network.
j) Encourage sustainable development that focuses growth near activity centers and mobility options that achieve greater location efficiency.	Consistent. Policies LU-8 and LU-12 ensure that orderly development occurs within established areas to ensure efficient travel throughout the planning area.
k) Support local jurisdictions' efforts to minimize the loss of farmland, environmentally sensitive areas, and natural resources.	Consistent. The proposed Fowler General Plan increases residential density from 2.62 units per acre to 3.12 units per acre, reducing the loss of environmental resources.
l) Support local jurisdictions' efforts to facilitate the development of diverse housing choices for all income groups.	Not applicable. This policy directs Fresno COG to support cities' efforts to provide a variety of housing choices.
m) Facilitate and promote interagency coordination and consistency across planning efforts.	Consistent. Policies MOB-23, MOB-24, MOB-25, MOB-26 directs the City to coordinate regional agencies to improve access.
n) Incentivize and support efforts to improve air quality and minimize pollutants from transportation.	Consistent. Policy CH-7 proposes solid and vegetative barriers near high volume roadways such as SR 99 and local expressways as a means to reduce transportation-related health impacts.
o) Prioritize investment in and promote multimodal safety measures to reduce traffic fatalities and incidents in the region.	Consistent. Policy CH-3 encourages the City to consider pedestrian and bicyclist safety and comfort in the design and development of streets.
p) Promote enhanced TSM and TDM strategies to reduce congestion and vehicle miles traveled.	Consistent. Policy MOB-1 contains an action item to identify TSM and TDM strategies to improve circulation system efficiency for all modes of travel.
q) Encourage improvements in travel connections across all modes to create an integrated, accessible, and seamless transportation network.	Consistent. Policy MOB-14 directs the City to identify opportunities for a multi-modal transit hub in the planning area.
r) Maximize the cost-effectiveness of transportation improvements.	Consistent. Policy MOB-28 directs the City to seek all available means of financing for circulation improvements.
s) Encourage investments that increase the system's resilience to extreme weather events, natural disasters, and pandemics.	Consistent. Policies CH-4 requires shade coverage along pedestrian and transit to bolster and encourage transit ridership during extreme events.
t) Preserve and maintain existing multimodal transportation assets in a state of good repair.	Not Applicable. The City of Fowler does not own any multimodal transportation assets, and no proposed policies seek to frustrate the intent of this policy.
u) Support local and regional economic development by leveraging planning and transportation funds that foster public and private investment.	Consistent. Policies MOB-23, MOB-24, MOB-25, MOB-26 directs the City to coordinate regional agencies to improve access.
v) Facilitate efficient, reliable, resilient, and sustainable goods movement.	Consistent. Policies MOB-19, MOB-20, and MOB-22 directs the City to designate heavy duty truck routes to allow for the efficient movement of goods.
w) Support innovative mobility solutions that are accessible, affordable, reduce greenhouse gas emissions, and improve air quality.	Consistent. The proposed Fowler General Plan seeks to employ a variety of policies revolving around land use and active transportation to affordably reduce greenhouse gas emissions and air pollutants.

RTP/SCS Policy	Project Consistency Analysis
x) Support efforts to expand broadband access throughout the region	Consistent. Policy PF-8 encourages the use of special districts to provide neighborhood improvements such as public works projects which could be used to extend broadband access.

Transit

Transit in the City consists of region-serving bus routes. Policies CH-4, MOB-1, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18 of the Community Health and Equity and Mobility Elements support transit in the planning area. These include supporting trip reduction strategies to reduce the number and length of vehicular trips, first/last mile connectivity to enhance the viability of and expand the utility of public transit, and transit access for residents and to job centers.

Policy CH-4	Require street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.
Action Item CH-4a	Establish street design standards for each land use zone and require street trees of “medium” size or larger in commercial, residential, and mixed-use zones.
Policy MOB-1	Design and construct a multimodal circulation system as shown on <i>Figure 9-1: Circulation Diagram</i> .
Action Item MOB-1a	Establish and implement a Roadways Master Plan that addresses the following: <ul style="list-style-type: none"> • Identification of design standards, and exceptions to those standards where deviations are appropriate, for the roadway network. Design standards should include pedestrian, bicycle, public transit, and vehicular accommodations to ensure the circulation network is designed for complete streets. • Identification of Transportation System Management (TSM) and Transportation Demand Management (TDM) strategies for improving efficiencies in the circulation system for all modes of travel. • Integration of a Vision Zero goal of reducing traffic fatalities and sever injuries to zero and adopting strategies to achieve this goal.
Policy MOB-14	Identify opportunities for a multi-modal transit hub within the City.
Policy MOB-15	Support the development of paratransit service programs.
Policy MOB-16	Support transit operator efforts to maximize return for short- and long-range transit needs.
Action Item MOB-16a	Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).
Policy MOB-17	Incorporate the potential for public transit service expansion throughout the City.
Action Item MOB-17a	Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.
Policy MOB-18	Improve route options and access for public transit City-wide, specifically west of SR 99.
Action Item MOB-18a	Coordinate with Fresno County Rural Transit Agency (FCRTA) and other public transit agencies to facilitate additional transit stops.
Action Item MOB-18b	Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity. (

Conclusion

The VMT Guidelines adopted by Fowler states general plans would have an impact if the VMT per capita or VMT per employee in the planning area for the horizon year increases compared to the existing VMT per capita in Fowler or VMT per employee in the region (Fresno County). The VMT per capita in the planning area during the horizon year is 12.3, while VMT per employee is 16.7. Under existing conditions in Fresno County, the VMT per capita is 16.1, while the VMT per employee is 25.6. Because the VMT per capita and VMT per employee in the planning area during the horizon year is less than the VMT per capita and VMT per employee for existing conditions in Fresno County, the Fowler GP would not result in a significant impact for subsequent residential and office projects consistent with the proposed Fowler General Plan. Additionally, implementation of the Fowler General Plan would increase demand for public transit, bicycle, and pedestrian facilities, which would require the improvement and expansion of the circulation system. A review of the Fowler General Plan revealed no potential policy inconsistencies or conflicts with policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or the performance or safety of those facilities. The Fowler General Plan incorporates future networks and policies related to supporting transit, bicycle, and pedestrians in the City. These networks are consistent with regional and local planning efforts supporting these modes of travel. Additionally, the Fowler General Plan has numerous policies supporting complete streets (providing accessibility for all users of all ages and abilities) and active transportation. Given the Fowler General Plan's consistency with regional efforts, and the lack of a significant impact resulting from VMT, impacts related to CEQA Guidelines Sections 15064.3(b) would be considered less than significant.

Threshold 3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact. The Fowler General Plan Mobility Element includes Goals MOB-1, MOB-2, and MOB-5 and Policies MOB-1, MOB-11, and MOB-12 to reduce hazards due to design, travel speed, or incompatible land uses and make the streets of Fowler safer for residents of all ages and abilities. The safety related policies of the Mobility Element are supported by complementary policies in other elements of the Fowler 2040 GP, such as CH-3 in the Community Health Element. The implementation of these policies and related actions would promote the design of improvements to the transportation network that improve safety for all modes of travel.

Since the proposed Fowler 2040 GP is a policy-level plan, all subsequent future public and private improvement projects and infrastructure facilities would be subject to additional review and approval to ensure safety. Through the Site Plan Review process, City staff evaluates development proposals and street improvements to ensure public health and safety by ensuring adequate and safe sidewalks or crosswalks, dedicated and protected bicycle facilities, realigning sharp curves, prohibiting certain movements, signaling intersections, and improving sight distance, among other measures. All new streets and redesign of existing streets are designed according to applicable federal, State, and local design standards, such as the California Manual on Uniform Traffic Control Devices and the California Highway Design Manual. Impacts would be less than significant.

Threshold 4: Would the project result in inadequate emergency access?

Less than Significant Impact. The Fowler 2040 GP would facilitate development that would need to ensure adequate emergency services access for new projects and not develop in a way to impede emergency access to existing development or through congested roads that could impede emergency response personnel. The Site Plan Review process for new projects includes review of project plans to ensure projects meet current standards for emergency access and require corrections if a project will

impact emergency access for adjacent facilities or not meet current standards. This review applies to the construction phase of a project as well. In addition, the Fowler 2040 GP includes a policy to address road congestion, listed below. This policy requires a minimum LOS of C for most roadways and LOS of B at intersections and rail crossings. At those levels, congestion would not interfere with emergency responders getting to their destination within Fowler.

Circulation Element

CIRC-2.2 Maintain Adequate LOS. Fowler shall plan the roadway system to maintain adequate roadway LOS to avoid congestion and reduce VMT. A level of service of C will be the desirable minimum service level in Fowler at which highway, arterial, and collector segments will operate. A level of service of B will be the desirable minimum service level in Fowler at which intersections and rail crossings will operate.

Additional Public Health and Safety policies ancillary to this issue address police response times, adequate staffing for fire protection, and implementation of a Hazard Mitigation Plan. Based on the development review process and the policy above, potential impacts to emergency access will be less than significant.

Table 4-48: Roadway Design Requirements and Designations

Street Type	Design Requirements	Street Designation a	ROW
Freeway	Not applicable. The design of SR 99 is within the jurisdiction of Caltrans.	SR 99	
Expressway	Expressways shall be developed with a minimum right of way of 100 feet, to include four to six travel lanes and access restricted to 2 -mile intervals.	Temperance Avenue	100
Arterial	Arterials shall be developed with a minimum right of way of 80 feet, to include four travel lanes, parking, and a center median (either raised or painted). Traffic signals should be placed at no closer than ¼-mile intervals unless conditions warrant additional signalization to improve traffic flow. (Circulation Element, Goal 5-2, Policy 17)	American Avenue	84
		Fowler Avenue (west/south of SR 99)	84
		Golden State Boulevard	150
		Manning Avenue	84
Collectors	Collectors are designed to have a 72 to 80 foot right of way width that allows four lanes undivided with parking, or two lanes with a two-way continuous left turn center lane. Some Collectors in areas of heavy pedestrian use may deviate from these standards or utilize a narrower right of way to accommodate existing development patterns. Traffic signals should be placed at no closer than ¼-mile intervals unless conditions warrant additional signalization to improve traffic flow. (Circulation Element, Goal 5-2, Policy 17)	5 th Street	80
		7 th Street	80
		8 th Street	80
		Armstrong Avenue	80
		Clayton Avenue	80
		Fowler Avenue (north of Adams)	80
		Fresno Street	80
		Lincoln Avenue	80
		Merced Street	80
		South Avenue	80
		Sumner Avenue	80
		Walter Avenue	80
		Adams Avenue	80
Temperance Avenue (south of SR 99)	80		
Local Streets	Local streets shall have a minimum 60 foot right of way with two travel lanes and parking. Local streets may be reduced in width when it can be demonstrated that projected traffic flows can be accommodated. Local public streets should not be reduced to less than 32 feet between curbs.	The alignments of future local streets are typically not specified by the General Plan Circulation Diagram, but existing local streets may be depicted for informational purposes.	

^a Limits of applicability for each listed segment shall be determined by

Policy MOB-1	Design and construct a multimodal circulation system as shown on <i>Figure 9-1: Circulation Diagram</i> .
Action Item MOB-1a	Establish and implement a Roadways Master Plan that addresses the following: <ul style="list-style-type: none">• Identification of design standards, and exceptions to those standards where deviations are appropriate, for the roadway network. Design standards should include pedestrian, bicycle, public transit, and vehicular accommodations to ensure the circulation network is designed for complete streets.• Identification of Transportation System Management (TSM) and Transportation Demand Management (TDM) strategies for improving efficiencies in the circulation system for all modes of travel.• Integration of a Vision Zero goal of reducing traffic fatalities and sever injuries to zero and adopting strategies to achieve this goal.
Policy MOB-2	Streets are designated and planned according to the functional classifications listed in <i>Table 9-2</i> .
Policy MOB-3	The right of way for arterials and collectors may be reduced to avoid disrupting existing development if the travel way generally meets the street classification design requirements listed in <i>Table 9-2</i> .
Policy MOB-4	Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.
Action Item MOB-4a	Prepare guidelines for the evaluation of vehicle miles travelled. The guidelines should include significance criteria for evaluating impacts, thresholds of applicability for discretionary projects, and guidance on analyzing transportation impacts.
Action Item MOB-4b	Identify a range of actions available for developments to mitigate transportation impacts, specifically targeted at reducing vehicle miles traveled.
Policy MOB-5	Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.
Policy MOB-6	Use Intelligent Transportation Systems (ITS) to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.
Policy MOB-7	Prioritize operational solutions over major structural improvements to existing roadways where feasible.
Policy MOB-8	Explore opportunities for management and maintenance of traffic control facilities to fall under the City's jurisdiction.
Policy MOB-9	New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
Policy MOB-10	Develop a multi-purpose recreational bikeway network and support facilities.
Action Item MOB-10a	Review and revise, as needed, the Zoning Ordinance to include provisions for short-term and long-term bicycle parking and storage facilities.

Policy MOB-11	Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
Action Item MOB-11a	Review and revise, as needed, public works standards to include pedestrian and bicycle safety features where appropriate.
Action Item MOB-11b	Establish design standards to ensure the bikeway network is easily identifiable and consistent with standard signs and markings, as designated by the State of California Traffic Control Devices Committee and the State Bikeway Committee.
Policy MOB-12	Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
Policy MOB-13	Coordinate with Caltrans, Fresno COG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
Policy MOB-14	Identify opportunities for a multi-modal transit hub within the City.
Policy MOB-15	Support the development of paratransit service programs.
Policy MOB-16	Support transit operator efforts to maximize return for short- and long-range transit needs.
Action Item MOB-16a	Actively participate in the development of short and long-range transit plans, including the Fresno County Long Range Transit Plan and transit plans prepared by the Fresno County Rural Transit Agency (FCRTA).
Policy MOB-17	Incorporate the potential for public transit service expansion throughout the City.
Action Item MOB-17a	Review and revise, as needed, public works standards to incorporate design features to accommodate future public transit stops.
Policy MOB-18	Improve route options and access for public transit City-wide, specifically west of SR 99.
Action Item MOB-18b	Ensure that pedestrian and bicycle facilities are provided along and/or near transit routes, whenever feasible, to improve access and connectivity.
Policy MOB-19	Designated truck routes for use by heavy commercial and industrial traffic shall include Golden State Boulevard, Manning Avenue, and Temperance Avenue, as shown in <i>Figure 9-2</i> .
Policy MOB-20	Encourage the efficient movement of goods.
Action Item MOB-20a	Identify economically feasible street and highway improvement and maintenance projects that will improve goods movement.
Action Item MOB-20b	Identify opportunities to support commercial and industrial access to existing rail facilities within the Planning Area.
Policy MOB-21	Facilitate goods movement and delivery through internal site design of commercial and industrial areas.
Policy MOB-22	Ensure truck access points and loading facilities are designed to reduce conflict with sensitive land uses.
Policy MOB-23	Coordinate with Caltrans in the design of capital improvement projects near SR 99.
Policy MOB-24	Continue to support Golden State Boulevard as a secondary route connecting the Kingsburg Selma Fowler corridor and providing access to the City of Fresno, Calwa, and Malaga.
Policy MOB-25	Coordinate local transportation planning with the Fresno COG Regional Transportation Plan (RTP), Fresno County Rural Transit Agency (FCRTA), and

	<p>other agencies on relevant transportation plans to ensure eligibility for state and federal funding.</p> <p>Collaborate with Fresno County to integrate right-of-way and improvement standards for roads that cross jurisdictional boundaries. For development outside the City’s boundaries, but within the SOI, City and County staff will cooperate and agree on reasonable design standards and negotiate logical transitions from City to County Standards. In general, for such development under County jurisdiction but within the Sphere of Influence, City Standards should apply if annexation would logically occur in the short to intermediate range.</p>
Policy MOB-26	
Policy MOB-27	<p>Provide for the logical, timely, and economically efficient extension of road infrastructure improvements.</p>
Action Item MOB-27a	<p>Annually review and revise the CIP to ensure roadway improvements are prioritized and scheduled for construction over at least a 5-year period.</p>
Policy MOB-28	<p>Seek all available means to finance improvements, including State and Federal grants.</p>
Policy MOB-29	<p>Use appropriate entitlement processes and financial tools to ensure new development contributes a fair share of the transportation improvements and/or costs to provide necessary improvements.</p>
Action Item MOB-29a	<p>Participate in the establishment of regional transportation mitigation fees and/or benefit districts to be assessed on new development. The fees shall cover a reasonable share of the costs of providing local and subregional transportation improvements needed for serving new development.</p>
Policy MOB-30	<p>Existing points of ingress and egress shall be consolidated whenever possible. Driveway consolidation for new development shall be consistent with City standards and implemented through access agreements along arterials.</p>
Action Item MOB-30a	<p>Review and revise, as necessary, City standards to establish criteria for site ingress and egress and driveway locations.</p>
Policy MOB-31	<p>Ingress and egress to shopping centers shall minimize left turn movements into and out of parking or loading areas.</p>
Policy MOB-32	<p>Review standards for traffic signalization and revise to reflect alternative ways, beyond the current warrant study, for the installation of traffic lights, stop signs, and alternative signalization methods.</p>
Policy MOB-33	<p>Require residential developments along arterials to back on to such streets with ornamental fencing, landscaping, and waiver of access, or to provide frontage roads with limited points of access to the street. “Open ended cul de sacs” to major streets are also required for pedestrian access.</p>
Policy MOB-34	<p>Limit access points and intersections of streets and highways based on the road’s General Plan classification and function. Access points must be located a sufficient distance away from major intersections to allow for safe, efficient operation.</p>
Action Item MOB-34a	<p>The distance between commercial driveways on arterial streets should be not less than 400 feet. Where practical and desirable, commercial driveways should be located on adjacent collector streets rather than on arterial streets.</p>
Action Item MOB-34b	<p>Driveway access to major activity centers, including multifamily development, should be located no closer than 200 feet to the intersection of a collector or arterial street.</p>

Policy CH-1	Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.
Action Item CH-1a	Identify gaps in the existing pedestrian and bicycle network to inform capital improvements programming and grant funding opportunities.
Action Item CH-1b	Prioritize pedestrian and bicycle improvement projects that close gaps in the mobility network and those which link the east and west sides of the city.
Action Item CH-1c	Amend road design standards, as necessary, to include complete street design principles.
Action Item CH-1d	Develop and implement an Active Transportation Plan.
Action Item CH-1e	Pursue funding for the adoption of a Safe Routes to School Master Plan to assist in the planning and funding of bicycle and pedestrian infrastructure improvements along school routes.
Policy CH-2	Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.
Action Item CH-2a	Review and revise the Zoning Ordinance, as needed, to include complementary land uses within zoning districts.
Policy CH-3	Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.
Action Item CH-3a	Conduct a visual quality assessment of bicycle and pedestrian facilities to determine the efficacy of existing active transportation improvements and to help prioritize future improvements.
Action Item CH-3b	Require street lighting within the rights-of-way of all public streets.

4.18.5 Mitigation Measures

Mitigation measures are not required.

4.18.6 Cumulative Impacts

The Fresno COG [Travel Demand] ABM was used to estimate existing and horizon year average VMT per capita and VMT per employee for the TAZs that comprise the Fowler General Plan. The number of dwelling units and employment for the planning area were calculated at buildout and provided to Fresno COG. Fresno COG used the buildout numbers to run a population synthesizer to generate land use input files for running the activity-based model. These land use input files were then run through the activity-based model to develop model horizon year (2042) forecasts with the buildout of the planning area. **Table 4-49** presents VMT per capita and VMT per employee findings for existing conditions in Fresno County and for the planning area at buildout in the horizon year. Based on the VMT Guidelines adopted by Fowler, a GP would have a significant impact if the VMT per capita and VMT per employee of the planning area exceeded the same metrics for existing conditions in all of Fresno County.

Table 4-49: VMT per Capita and VMT per Employee – Existing and Horizon Year

Trip Type	VMT per Capita	VMT per Employee
Fresno County (2019)	16.1	25.6
Fowler General Plan (2042)	12.3	16.7
Threshold	14.0	22.3
Significant Impact?	No	No

Source: Fresno COG Travel Demand Model, Kittelson & Associates, Inc. 2022.

As **Table 4-49** shows, the projected VMT per capita and VMT per employee in the Plan Area are lower than existing conditions. Under the Fowler General Plan, VMT per capita is 3.8 lower, or 23% lower, while VMT per employee is 8.9 lower, or 34% lower. The decrease in VMT is the result of the proposed land use mix within the Plan Area. The retail and employment opportunities keep the VMT per capita lower than the County average, while the large number of dwelling units near the jobs allows employees to live close to work resulting in a VMT per employee that is lower than the County average today.

Figure 4-23: Circulation Network

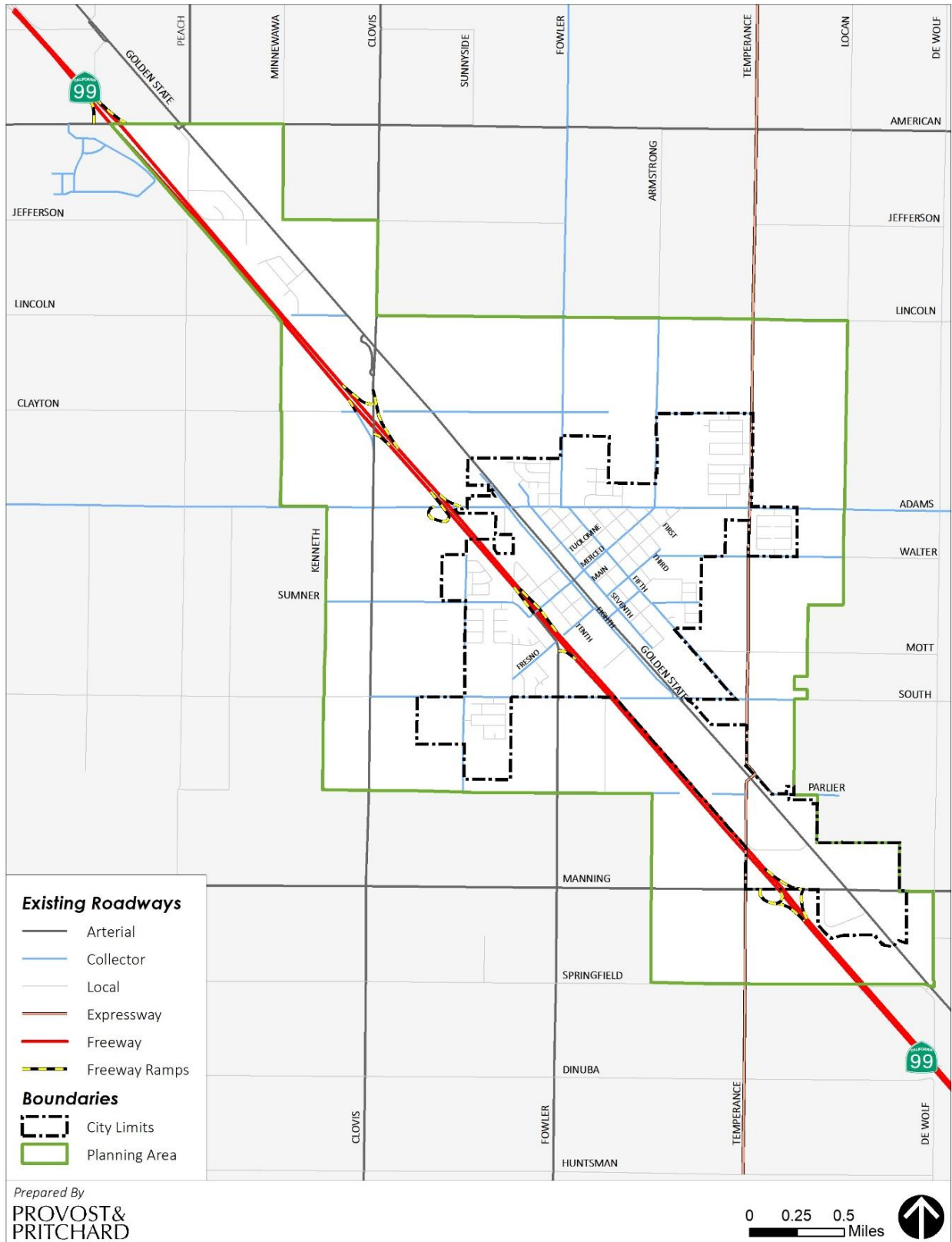
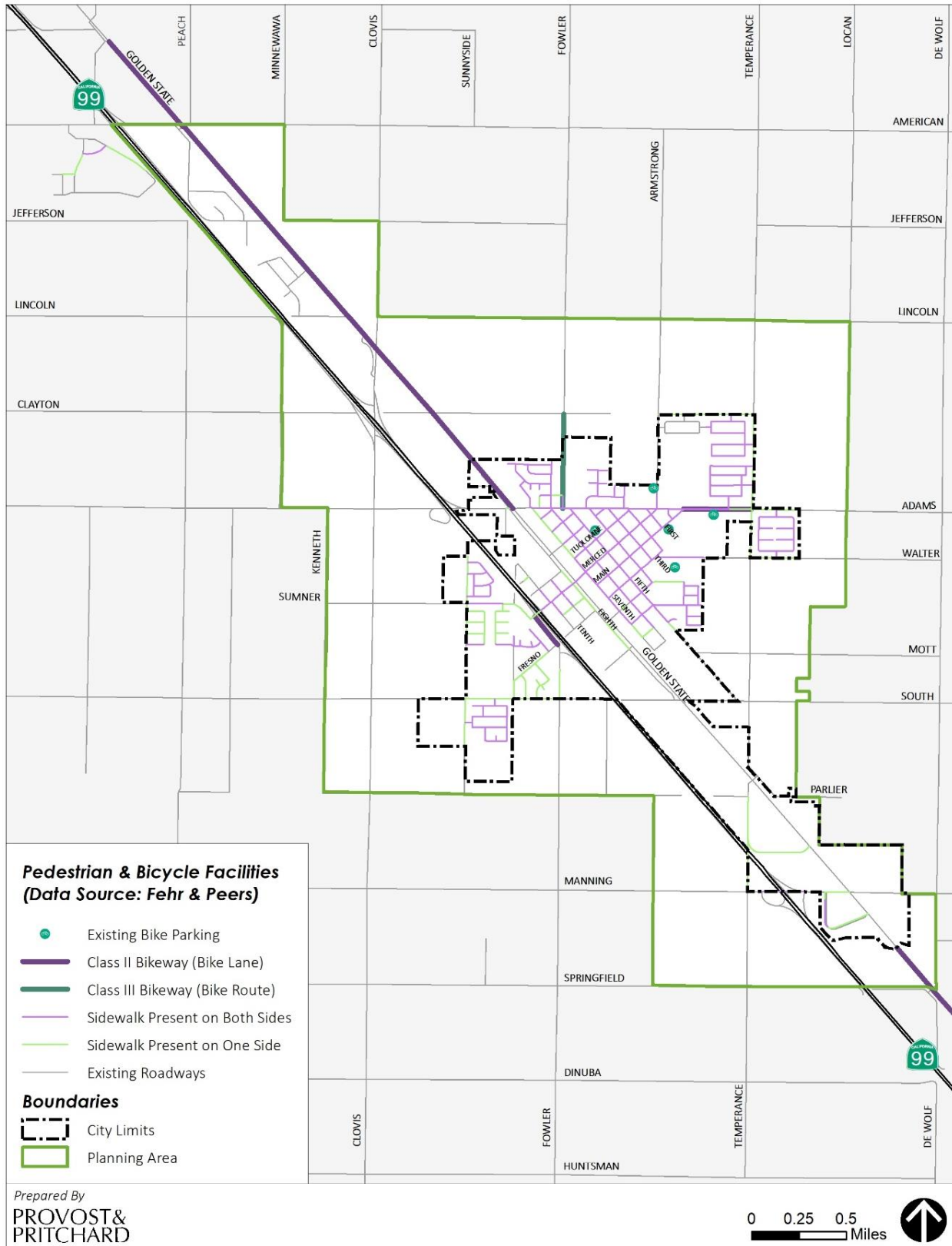


Figure 4-24: Existing Bicycle Facilities



4.19 Tribal Cultural Resources

This section evaluates impacts on tribal cultural resources, including evaluation of tribal cultural resources located within the planning area, as well as the procedures for the discovery of tribal cultural resources or human remains that may be of tribal descent, that could result from implementation of the Fowler 2040 GP.

4.19.1 Environmental Baseline

Ethnography

The San Joaquin Valley was historically occupied by the Penutian-speaking Yokuts.¹⁴⁰ The planning area is in a transitional zone between the Northern Valley and Southern Valley Yokuts.¹⁴¹ Adjacent native groups include the Salinan and Costanoan to the west, Foothill Yokuts and Sierra Miwok to the east, and Kitanemuk and Chumash to the south.¹⁴² The three geographical divisions of the Yokuts are the Northern Valley, Southern Valley, and Foothill Yokuts. The distinction between the three groups is primarily based on language dialect.¹⁴³

The Yokuts established permanent villages. Residential structures were most often of two types: single-family dwellings and larger communal residences that housed 10 families or more. Villages frequently included mat-covered granaries and a sweathouse.¹⁴⁴

Yokuts subsistence was based on a mixed economy focused on fishing, collecting, and hunting small game. Fishermen employed tule rafts and caught fish with nets, spears, basket traps, and bow and arrow. Yokuts often gathered mussels and hunted turtles in lakes, rivers, and streams. Wild seeds and roots contributed a large portion of the Yokuts diet. Tule roots were gathered, dried, and pounded into some flour to be prepared as a mush. Tule seeds and grass and flowering herb seeds were prepared in the same way. Leaves and stems of certain plants, such as clover and fiddleneck, were also collected. Acorns, a staple of most California Native Americans, were not readily available in the Yokuts ethnographic territory. Some Yokuts tribes journeyed to neighboring groups to trade for acorns. Waterfowl was frequently hunted with snares, nets, and bow and arrow. Land mammals and birds contributed a smaller part of the Yokuts diet.

Small game was occasionally taken in snares or traps or shot with bows and arrows.¹⁴⁵ The basic economic unit among the Yokuts was the nuclear family. Totemic lineages were based on patrilineal descent. Totem symbols were passed from father to offspring and families sharing the same totem formed an exogamous lineage. Totems were associated with one of two moieties, a division which played a role during ceremonies and other social events.¹⁴⁶

Yokuts were split into self-governing local groups, most often including several villages. Each group had a chief who directed ceremonies, mediated disputes, handled punishment of those doing wrong, hosted

¹⁴⁰ (Kroeber 1976); (Wallace 1978); (Latta 1949)

¹⁴¹ (Wallace 1978)

¹⁴² (Kroeber 1976)

¹⁴³ (Wallace 1978)

¹⁴⁴ *Ibid*

¹⁴⁵ *Ibid*

¹⁴⁶ *Ibid*

visitors, and provided aid to the impoverished. In certain cases, settlements had two chiefs, one for each moiety, or internal division. Other political positions included the chief's messenger and the spokesman.¹⁴⁷

Shamans were also an important part of Yokuts village life. The Yokuts' Shaman gained power through a dream or vision. If, after this vision, the man accepted the role as shaman, he would pray, fast, and acquire talismans to aid him in his future work. Shamans had the ability to heal the sick and served the primary role in religious life.¹⁴⁸

Yokuts technology depended primarily on tule. Stems of the plant served as the raw material for baskets, cradles, boats, housing, and many other items. Tools such as knives, projectile points, and scraping tools were made from imported lithic materials as stone was not readily available in the Central Valley. Marine shells secured through trade with coastal peoples were used in the manufacture of shell money and personal adornment items.¹⁴⁹

As with other Native American Tribes in California, the Yokuts population was drastically reduced following the influx of Spanish explorers, missionaries, miners, ranchers, and other European immigrants to the San Joaquin Valley after 1700. During the gold rush, miners began to settle along major waterways such as the San Joaquin River and Kings River. The momentum of the gold rush could not be sustained, and miners began to pursue vocations in ranching and farming. The successful development of irrigation systems led to the agricultural boom as more tracts of land became suitable for crops displacing the Yokut people. The Yokuts were part of the balance of nature for thousands of years until the settlement of California spurred by the Gold Rush deprived them of their ancestral hunting and fishing grounds. Not only were they displaced from their lands, but they were often killed when they resisted. On top of that, they proved especially susceptible to diseases carried by white people. By 1970, the number of Yokuts in San Joaquin County had dwindled down to 363. Today nationally there are about 2,000 Yokuts enrolled in the federally recognized tribe.

4.19.2 Regulatory Setting

Federal

National Historic Preservation Act

As discussed in [Section 4.6.2](#), the NHPA established guidelines to “preserve important historic, cultural, and natural aspects of our cultural heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice.”

State

California Register of Historical Resources

As discussed in [Section 4.6.2](#), the CRHR is an inventory of significant architectural, archaeological, and historical resources in the State of California. The criteria for eligibility requirements can be found in [Section 4.6.2](#).

California Environmental Quality Act

As discussed in [Section 4.6.2](#), CEQA requires that public agencies assess the effects on historical resources of public or private projects that the agencies finance or approve. Historical resources are defined as buildings, sites, structures, objects, areas, places, records, or manuscripts that the lead agency determines

¹⁴⁷ Ibid

¹⁴⁸ Ibid

¹⁴⁹ Ibid

to have historical significance, including architectural, archaeological, cultural, or scientific significance. CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered.

Significant Historical Resources under CEQA Guidelines

In completing an analysis of a project under CEQA, it must first be determined if the project site possesses a historical resource. A site may qualify as a historical resource if it falls within at least one of four categories. See details of each category and criteria for meeting such in [Section 4.6.2](#).

Health and Safety Code

The discovery of human remains is regulated according to HSC Section 7050.5. Discussion of HSC Section 7050.5 can be found in [Section 4.6.2](#) above.

Government Code 65352.3-5: Local Government-Tribal Consultation.

GC Sections 65092, 65351, 65352, 65352.3, and 65352.4, formally known as SB 18, regulate the consultation with California Native American tribes having traditional lands located within the jurisdiction of applicable cities and counties. The intent of the underlying legislation was to provide all California Native American tribes that are on the contact list maintained by the Native American Heritage Commission, an opportunity to consult with specific local governments for the purpose of preserving and protecting their sacred places. Such consultations apply to the preparation, adoption and amendment of general plans.

Assembly Bill 52: Native American Historic Resource Protection Act

AB 52, codified at PRC Section 21080.3.1, et seq., sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for a DEIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2015. AB 52 adds TCRs to the specific cultural resources protected under CEQA. Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the CRHR, or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

Native American Heritage Act

Also relevant to the evaluation and mitigation of impacts to cultural resources is the Native American Heritage Act of 1976 which established the NAHC and protects Native American religious values on state property (see PRC Section 5097.9).

Disposition of Human Remains

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native American groups or individuals as identified by the NAHC as provided in PRC Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials. Furthermore, HSC Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act of 2001

HSC Sections 8010-8011 establish a State repatriation policy intent that is consistent with and facilitates implementation of the California Native American Graves Protection and Repatriation Act (NAGPRA). NAGPRA strives to ensure that all California Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

4.19.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed project would have a significant impact related to recreation if it would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
 - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Native American Outreach

In accordance with AB 52, Fowler notified the Santa Rosa Rancheria Tachi Yokut Tribe and invited the Tribe to participate in consultation for the 2040 GP. The deadline for the Tribe to submit a request for consultation pursuant to AB 52 was September 23, 2022. Fowler did not receive any requests for consultation. No Tribal Cultural Resources have been identified within the planning area by a California Native American tribe.

4.19.4 Impacts

Threshold 1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

Less than Significant Impact. Effects on tribal cultural resources are only identifiable once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Generally, if an area is sensitive to tribal cultural resources, new development in that area could impact tribal cultural resources during project construction phases involving ground disturbance. However, policies CDES-10, CDES-12, and CDES-13, outlined above in [Section 4.6](#), would ensure that potential impacts related to historic resources are less than significant.

4.19.5 Mitigation Measures

Mitigation measures are not required.

4.19.6 Cumulative Impacts

Tribal Cultural Resources are regionally specific and determined by the local tribes. However, development in Fowler would increase under buildout of the Fowler 2040 GP by increasing mobility and growth. The increase in growth in previously undisturbed areas would contribute to regional impacts on tribal cultural resources. Tribal consultation, in accordance with AB 52 and/or SB 18 when applicable, would be required on a project-by-project basis to ensure protection of tribal cultural resources. However, tribal territory often crosses the boundaries of multiple jurisdictions within and outside of the region, and there could be individual less than significant impacts to tribal cultural resources that cumulatively would result in a significant impact. Therefore, the potential for cumulative impacts related to tribal cultural resources is potentially significant. However, implementation of the goals and policies listed under CDES-12 and CDES-13 above, would minimize potential impacts to tribal cultural resources as a result of development facilitated by the Fowler 2040 GP. Therefore, the Fowler 2040 GP would not result in a considerable contribution to cumulative impacts to tribal cultural resources.

4.20 Utilities and Service Systems

This section evaluates impacts to utilities and service systems, (1) water supply; (2) wastewater; (3) storm drain facilities; (4) solid waste, and (5) energy and natural gas, that could result from implementation of the Fowler 2040 GP.

Storm drain facilities are also analyzed in [Section 4.11](#), Hydrology and Water Quality. While the Project's baseline is 2019, information after 2019 was used in the analysis of this section. The use of more recent information allows for a better representation of existing conditions in regard to utilities and service systems within the City.

4.20.1 Environmental Baseline

Water Supply Facilities

Fowler is served by six groundwater wells for its domestic water supply. Fowler also currently has one offline well which is not producing water. Fowler is equipped with a network of mains, pipelines, and laterals that help to distribute water throughout the service area. In 2020, Fowler had a water supply and demand total of 2,430-acre feet (AF) in 2020.¹⁵⁰ According to the 2021 Fowler Water Model Report, the City has approximately 1,800 water service connections.¹⁵¹ [Figure 4-25](#) shows the existing water system facilities within the City.

Fowler is located within the Fresno Sole Source Aquifer, one of 64 sole source aquifers in the country. A sole source aquifer is defined by the USEPA as an aquifer that provides more than 50 percent of the drinking water for its service area, and there are no reasonably available drinking water sources should the aquifer be contaminated.¹⁵²

Fowler's location within the Fresno Sole Source Aquifer and the implementation of SGMA have spurred the City to participate in groundwater recharge efforts and to reduce the amount of groundwater pumped. CID provides water from the Kings River for groundwater recharge for recharge and irrigation to more than 6,000 growers within its 144,000-acre service area, which includes all land surrounding Fowler. In 2014, Fowler entered into an agreement with CID to fund groundwater recharge programs in order to sustain the Fresno Sole Source Aquifer. In 2019 a cooperative agreement for groundwater management between SKGSA and CID was signed, superseding the 2014 agreement between Fowler and CID. A portion of the CKGSA water is delivered to Fowler for use by the City. The remaining water used by the City is from groundwater pumping. As a result, supply and demand accounts for the same amount.

As is discussed under [Section 4.11](#), Hydrology and Water Quality, Fowler is located within the SKGSA. The SKGSA serves to regulate the use of groundwater in order to achieve balanced levels and prevent overdraft within the San Joaquin Valley. The SKGSA has developed a long-term sustainability plan for groundwater within its service area; the GSP was adopted in 2018 and its provisions are accommodated within the Fowler 2040 GP.

¹⁵⁰ Water data provided by correspondence with City staff.

¹⁵¹ (Ennis Consulting 2021)

¹⁵² (USEPA 2021)

Wastewater Facilities

Along with the Cities of Selma and Kingsburg, Fowler is a member of the SKFCSD, which was formed in 1971 in order to provide sewer and wastewater treatment services to each of the three cities. The SKFCSD operates a wastewater treatment facility to the west of Kingsburg, which is connected to each member city through a network of pipelines and trunks. While the SKFCSD owns the wastewater treatment plant, each member city owns the collection system infrastructure within its city limits. SKFCSD is in charge of maintaining and operating the system, including parts of the system that are located within the member cities.

The 2016 SKFCSD Collection System Master Plan contains the existing wastewater collection system as well as the projected growth of the system through 2035 (See [Table 4-51](#) and [Table 4-52](#)). The SKFCSD Master Plan assumes urban development would occur to the west of the existing city limits. In 2019 the wastewater treatment plant had a Peak Dry Weather Flow (PDWF) of 7.87 mgd and a Peak Wet Weather Flow (PWWF) of 15.91 mgd. PDWF and PWWF capacities at 2035 buildout of the planned improvements to the wastewater collection system are 38.85 mgd and 44.85 mgd, respectively.¹⁵³

The 2016 SKFCSD Collection System Master Plan plans for a 2035 population of 77,000 people between the three member cities, with a constant growth rate of three percent. In 2021,¹⁵⁴ the SKFCSD facility had an average influent flow of 4.3516 mgd. In 2021, the three cities had a total population of 44,221,¹⁵⁵ equating to a per capita wastewater generation of approximately 0.00009841 mgd. The current wastewater facility is rated for a capacity of 8 mgd and expansion of the facility is planned for when the average flow reaches 6 mgd.¹⁵⁶

Stormwater Facilities

Fowler does not currently have an adopted storm drainage master plan. Existing storm drainage facilities are shown on [Table 4-53](#). Fowler assesses storm drainage infrastructure and capacity as development occurs. Individual development projects are required to construct storm drainage facilities as required by the development. The existing storm drainage system consists of a network of trunk lines and other pipelines that connect to stormwater outlets and stormwater basins within Fowler. The SKFCSD accounts for stormwater entering the wastewater system during PWWF periods and provides for stormwater inflow and discharge to occur at the wastewater treatment facility. The wastewater system has been designed in such a way that allows for overflow from the storm drainage system to enter the wastewater system.

Solid Waste Facilities

Solid waste collection in Fowler is provided by Waste Management, Inc. Fowler's solid waste program includes waste disposal collection, a regular recyclables pickup program, and a green waste pickup program. After removing recyclable materials at a Waste Management transfer facility outside of the city limits, Fowler's solid waste is transferred to the Kettleman Hills Nonhazardous Co-disposal Site located at 35251 Old Skyline Road in Kettleman City, approximately 52 miles southwest of Fowler. According to CalRecycle, the Kettleman Hills Waste Management Facility has an overall capacity of 15,600,000 cubic

¹⁵³ (Selma-Kingsburg-Fowler County Sanitation District 2016)

¹⁵⁴ SKFCSD provided wastewater generation information as of 2021. To provide consistency when discussing wastewater generation estimates, this EIR uses the 2021 United States Census Bureau population estimate.

¹⁵⁵ (United States Census Bureau 2022)

¹⁵⁶ (Selma-Kingsburg-Fowler County Sanitation District 2022) 2021 data and projections provided via correspondence with SKFCSD staff.

yards. CalRecycle indicates that at the end of 2019, the facility had approximately 3,580,000 cubic yards of capacity remaining, or approximately 22.9 percent of the facilities planned capacity.¹⁵⁷

Energy and Natural Gas

PG&E is the electricity provider for the City, while SoCalGas is the natural gas provider for Fowler. Both entities are regulated by the California Public Utilities Commission, an agency responsible for ensuring Californians have safe and reliable utilities.

4.20.2 Regulatory Setting

Federal

Clean Water Act

The primary goals of the CWA, 33 USC Sections 1251, et seq., are to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. The CWA forms the basic national framework for the management of water quality and the control of pollutant discharges. The CWA sets forth a number of objectives in order to achieve the above-mentioned goals. The CWA objectives include regulating pollutant and toxic pollutant discharges; providing for water quality which protects and fosters the propagation of fish, shellfish and wildlife; developing waste treatment management plans; and developing and implementing programs for the control of non-point sources pollution. The NPDES permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the Waters of the United States. California has an approved state NPDES program. The USEPA has delegated authority for water permitting to the SWRCB, which has nine regional boards.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) establishes standards for contaminants in drinking water supplies. Contaminants regulated by the SDWA include metals, nitrates, asbestos, total dissolved solids, and microbes.

National Pollution Discharge Elimination System Permits

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface Waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant. In California, the Federal requirements are administered by the SWRCB, and individual NPDES permits are issued by the RWQCBs.

Disposal or use of Sewage Sludge

Title 40 of the CFR Part 503 and standards established by the RWQCB regulate the disposal and use of sewage sludge.

¹⁵⁷ (CalRecycle 2019)

Title 40 of the Code of Federal Regulations

Title 40 of the CFR, Part 258 (RCRA, Subtitle D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The Federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State

California Water Code

The California Water Code is the governing law for all aspects of water management in California.

Safe Drinking Water Act (1976)

California enacted its own Safe Drinking Water Act in 1976. The Division of Drinking Water, a branch of the SWRCB, has been granted primary enforcement responsibility for the SDWA. Title 22 of the California Code of Regulations establishes authority and stipulates drinking water quality and monitoring standards. These standards are equal to or more stringent than the federal standards.

Senate Bill 610

SB 610 (2002) amended the WC and GC to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain types of development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment for a project that is subject to CEQA and meets certain requirements, including residential developments of more than 500 dwelling units.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969, which became Division 7 of the California Water Code (WC), authorized the SWRCB to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of the CWA Section 303, which states that water quality standards must be established for certain waters through the adoption of water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans within the regions, identifying water quality objectives, and instituting waste discharge requirements. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. Beneficial uses consist of all the various ways that water can be used for the benefit of people and wildlife. The Porter-Cologne Act was later amended to provide the authority delegated from the USEPA to issue NPDES permits regulating discharges to Waters of the United States.

Recycled Water Regulations

Within California, recycled water is regulated by the USEPA, the SWRCB, and RWQCB. The SWRCB has adopted Resolution No. 77-1, "Policy with Respect to Water Reclamation in California." This policy states that the SWRCB and RWQCBs will encourage and consider or recommend for funding water reclamation projects that do not impair water rights or beneficial in-stream uses. The Division of Drinking Water, as a part of the SWRCB, establishes the recycled water uses allowed in California and designates the level of treatment (i.e., un-disinfected secondary, disinfected secondary, or disinfected tertiary) required for each of these designated uses (Title 22, CCR).

The RWQCBs implement the SWRCB Guidelines for Regulation of Water Reclamation and issue waste discharge permits that serve to regulate the quality of recycled water based on stringent water quality

requirements. The SWRCB develops policies protecting human health and comments and advises on RWQCB permits.

Title 22 of the California Code of Regulations

The WC requires the SWRCB to establish water reclamation criteria. In 1975, the former California Department of Health Services prepared Title 22 to fulfill this requirement. Title 22 regulates production and use of reclaimed water in California by establishing three categories of reclaimed water: primary effluent, which typically includes grit removal and initial sedimentation or settling tanks; adequately disinfected, oxidized effluent (secondary effluent) which typically involves aeration and additional settling basins; and adequately disinfected, oxidized, coagulated, clarified, filtered effluent (tertiary effluent) which typically involves filtration and chlorination. In addition to defining reclaimed water uses, Title 22 defines requirements for sampling and analysis of effluent and requires specific design requirements for facilities.

Urban Water Management Planning Act of 1983

The California Urban Water Management Planning Act requires all publicly or privately-owned utilities that provide water service to more than 3,000 service connections or over 3,000 acre-feet per year to prepare an Urban Water Management Plan (UWMP). The UWMP is intended to support long-term resource planning and ensure suppliers have adequate supplies for existing and future demand. SB X7-7, passed in 2009, requires a reduction in 20 percent per capita water use by the year 2020. These water savings targets must be quantified in updated UWMPs.

Senate Bill 7x7 Statewide Water Conservation

SB X7-7, which was enacted in 2009, requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita water by 20 percent by 2020, with an interim goal of a 10 percent reduction in per capita water use by 2015.

CALGreen Building Code

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (CCR Title 24) to apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in this code, throughout the State of California. CALGreen established planning and design standards for sustainable site development including water conservation and requires new buildings to reduce water consumption by 20 percent. The 2022 California Green Building Code Standards became effective January 1, 2022. The building efficiency standards are enforced through the local building permit process.

The California Plumbing Code

The 2022 California Plumbing Code (Part 5, Title 24, CCR) was adopted as part of the 2022 California Building Standards Code. The general purpose of the universal code is to prevent disorder in the industry as a result of widely divergent plumbing practices and the use of many different, often conflicting, plumbing codes by local jurisdictions. Among many topics covered in the code are water fixtures, potable and non-potable water systems, and recycled water systems. Water supply and distribution shall comply with all applicable provisions of the current edition of the California Plumbing Code.

California Department of Resources Recycling and Recovery

CalRecycle (formerly the California Integrated Waste Management Board) oversees, manages, and monitors waste generated in California. It provides limited grants and loans to help California cities, counties, businesses, and organizations meet the State waste reduction, reuse, and recycling goals. It also provides funds to clean up solid waste disposal sites and co-disposal sites, including facilities that accept

hazardous waste substances and non-hazardous waste. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016, both of which are described below.

The Integrated Waste Management Act – Assembly Bill 939

AB 939 (PRC 41780) requires cities and counties to prepare integrated waste management plans (IWMPs) and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements as part of the IWMP. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products.

California State Recycling Law – Assembly Bill 341

AB 341 is California’s Mandatory Recycling Law for commercial businesses, multifamily complexes, and public entities. AB 341 went into effect on July 1, 2012, and requires all businesses that generate four or more cubic yards of garbage per week and multifamily dwellings with five or more units to recycle. AB 341 also sets a statewide goal of 75 percent waste diversion.

California Mandatory Organics Recycling Law – Assembly Bill 1826

AB 1826 is California’s Mandatory Organics Recycling Law for commercial businesses and multifamily complexes. AB 1826 requires businesses to recycle organic waste on and after April 1, 2016. By January 1, 2016, local jurisdictions are required to implement an organic waste recycling program that diverts organic waste generated by businesses and multifamily residential dwellings consisting of five or more units. AB 1826 phases the mandatory recycling of commercial organic waste over time based on volume of waste generated by businesses. In April 2016, businesses generating over eight cubic yards of organic waste per week are required to arrange for organic waste recycling services; in January 2017, businesses generating over four cubic yards of organic waste per week will do the same. Additionally, jurisdictions are required to submit annual reports. In 2020, CalRecycle will conduct a formal review to determine if statewide organic waste disposal has been reduced by 50 percent of 2014 levels. If not, the mandate will expand to include businesses that generate over two cubic yards of organic waste per week.

Senate Bill 1016

SB 1016 requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality’s integrated waste management plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction’s diversion rate compliance in accordance with a specified schedule. Beginning January 1, 2018, the Board will be required to review a jurisdiction’s source reduction and recycling element and hazardous waste element once every two years.

2006 Universal Waste Law

Since February 8, 2006, residents and small businesses in California have been prohibited from disposing of the following items in the garbage: batteries, electronic devices, fluorescent lights, and mercury thermostats.

Local

Selma-Kingsburg-Fowler County Sanitation District 2016 Collection System Master Plan Update

The 2016 SKFCSD Collection System Master Plan serves as an update to the SKFCSD 2006 Master Plan. The update was needed as a result of the change in growth projections between the three member jurisdictions. The 2016 Master Plan Update provides updated flow projections and an updated Capital Improvement Plan. In addition, the 2016 Master Plan Update provides a risk and prioritization analysis associated with the Capital Improvement Plan.

4.20.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed Fowler 2040 GP would have a significant impact related to utilities and service systems if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have insufficient water supplies available during normal, dry and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals;
- Would not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.20.4 Impacts

Threshold 1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact. Buildout of the Fowler 2040 GP would result in the need for the construction of new and expanded water, wastewater, storm water drainage, electric power, natural gas, and telecommunication facilities to serve the increased population and non-residential development that would occur. While future development of such facilities could have a potential environmental impact, a lack of project-specific details at this time would result in analysis that is speculative in nature. Future development would be evaluated at the time it is proposed and would comply with CEQA as applicable to ensure that potential environmental impacts are evaluated. Any future projects would be subject to compliance with all applicable federal, State, and local requirements, including those that would minimize potential environmental impacts. Future development projects would also be required to use the most recent efficiency standards intended to reduce environmental impacts on a project specific level. Implementation of the newest efficiency standards would limit any future impacts to energy, air quality, and GHGs. In addition, during construction of such infrastructure, contractors would be required to adhere to industry BMPs, minimizing potential impacts to a less than significant level. Therefore, impacts would be less than significant.

Threshold 2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact. The City of Fowler had water usage of 2,430 AF in 2020 and a population of 6,706 people,¹⁵⁸ equating to a per capita water demand of approximately 0.36 AF. The City has planned for a two percent increase in water supplies through its water modeling effort, which aligns with

¹⁵⁸ (United States Census Bureau 2022)

historical growth trends within the City. **Table 4-50** shows the projected water supply and demand through 2040, increasing at a rate of two percent per year.

Table 4-50: Water Supply and Demand¹⁵⁹

Year	2020	2025	2030	2035	2040
Supplies (AF)	2,430	2,683	2,962	3,270	3,611
Demand (AF)	2,430	2,683	2,962	3,270	3,611
Difference	0	0	0	0	0

With a projected water supply of 3,611 AF, Fowler could accommodate a population of 10,030 people. At full buildout of the Fowler 2040 GP, Fowler would have a population of 48,131 people, which would require approximately 17,328 AF of water per year. The availability of water supplies would be a restricting factor on any future development. Fowler would be required to provide sufficient water supplies to serve any increase in population as the result of development. General Plan policies and federal and State regulations would ensure that water infrastructure is planned for to account for a growing population. Fowler 2040 GP policies as listed below include the development and implementation of a water system master plan, which would analyze future infrastructure needs and locations. This would include the location of facilities including wells, pipes, and storage facilities. In addition, the City would be required to complete an UWMP when it reaches 3,000 service connections or a yearly demand of 3,000 AF. The requirement to provide sufficient water supplies and related infrastructure that would accommodate development ensures that the City would have the quantity needed to serve the City’s future development during normal, dry, and multiple dry years. In addition, the implementation of SGMA policies and recharge programs help to minimize the impact that groundwater pumping has on groundwater resources within the area.

- Policy PF-16** Design and construct water system infrastructure as needed to meet current and future water demands and system requirements.
- Action Item PF-16a** Prepare and maintain a water systems master plan to estimate future water demands, identify an adequate supply of water to meet future demands, and identify potential new water supplies.
- Policy PF-17** Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City’s water, wastewater, and stormwater infrastructure.
- Policy PF-22** Support local efforts to implement the Sustainable Groundwater Management Act (SGMA). Coordinate with applicable Groundwater Sustainability Agencies (GSAs) to implement appropriate policies and programs identified in adopted Groundwater Sustainability Plans (GSPs).
- Policy PF-23** Where appropriate, integrate identified actions and projects from the GSP into the City’s Capital Improvement Program.

Compliance with State requirements, including development of an UWMP once applicable, and with implementation of Fowler 2040 GP policies PF-16, PF-17, PF-22, and PF-23, and action item PF-16a as outlined above, impacts to water supplies would be less than significant.

¹⁵⁹ Water data provided by correspondence with City staff.

Threshold 3: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact. Buildout of the Fowler 2040 GP would result in an increase in the amount of wastewater required to be treated by the SKFCSD wastewater treatment facility and may require expanded facilities. The SKFCSD Master Plan accounted for increased urbanized development occurring to the west of the City's existing city limits. In 2021, per capita wastewater generation within the SKFCSD service area was approximately 0.00009841 mgd, for a daily total of 4.3516 mgd.¹⁶⁰ Based on the Fowler's estimated 2021 population of 6,934 people and the full buildout projection under the Fowler 2040 GP resulting in a population of 48,131 people, the wastewater treatment facility would be required to accommodate 41,197 more residents of Fowler under full 2040 buildout of the GP.¹⁶¹ Multiplying this average generation number by a new population of 41,197, the wastewater treatment plant would be required to accommodate approximately an additional 4.05 mgd. This does not account for the population growth of the other two participating jurisdictions, whose growth would also contribute to increase wastewater generation through 2040. As is discussed more thoroughly in **Section 4.15, Population and Housing**, historical growth trends of Fowler would predict a population growth of between two and three percent. A constant three percent growth rate through 2040 would result in a population of 11,883 people and a required accommodation of approximately 0.487 mgd of additional wastewater service by the SKFCSD wastewater facility. SKFCSD is anticipating growth that would result in the expansion of the wastewater facility. The existing facility has a rated capacity of 8 mgd and is planned for expansion once an average flow of 6 mgd is reached. Implementation of the policies listed below would lessen any potential impacts. Any future development would be required to be able to provide sufficient wastewater treatment serving future projects. As such, buildout of the Fowler 2040 GP would be limited by the available capacity of the SKFCSD facility. This limitation would ensure that impacts would remain at a less than significant level.

Policy PF-17

Continue to establish development fees and user rates that are sufficient to operate, maintain, and upgrade (for current and future regulatory requirements) the City's water, wastewater, and stormwater infrastructure.

Policy PF-18

Continue to cooperate with the Selma-Kingsburg-Fowler (SKF) County Sanitation District to design and construct wastewater system infrastructure as needed to safely convey, treat and recycle, and dispose of current and future wastewater flows and achieve future regulatory and system requirements.

Policy PF-19

Actively participate in the Selma-Kingsburg-Fowler (SKF) County Sanitation District wastewater master plan update process to ensure it aligns with planned land uses and projected demands for the City of Fowler.

With implementation of 2040 Fowler GP policies PF-17, PF-18, and Policy PF-19, impacts to wastewater treatment would be less than significant.

¹⁶⁰ (Selma-Kingsburg-Fowler County Sanitation District 2022) SKFCSD provided wastewater generation information as of 2021. To provide consistency when discussing wastewater generation estimates, this EIR uses the 2021 United States Census Bureau population estimate.

¹⁶¹ (United States Census Bureau 2022)

Threshold 4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. Fowler is under contract with Waste Management to provide solid waste pickup and disposal. Waste generated by Fowler is sent to the Kettleman Hills Waste Management Facility, located approximately 52 miles southwest of Fowler. Solid waste is first sent to a Waste Management transfer facility to separate recyclable from the rest of the waste produced. The facility has a total capacity of 15,600,000 cubic yards with a remaining capacity of 3,580,000 cubic yards, or 22.9 percent. In 2019 Fowler generated 7,518.94 tons of solid waste, or 8,354.38 cubic yards.¹⁶² This generation accounts for approximately 0.23 percent of the remaining capacity of the facility. In 2019, the population of Fowler was 6,605. On average, each resident of Fowler generated approximately 1.26 cubic yards of solid waste. At full buildout of the Fowler 2040 GP the City would contribute approximately 60,879 cubic yards of solid waste, or 12.70 percent of the facilities remaining capacity in 2019. Fowler’s current contribution to the closure of the facility is not substantial, however, as buildout occurs and population increases, the impact the City has on the capacity of the facility would increase. In the event of the closure of the facility within the life of the Fowler 2040 GP, Waste Management would provide an alternative site to collect waste generated from Fowler. Fowler would be required to comply with all applicable solid waste reduction goals. In addition, policy PF-26 listed below would aid to reduce any potential impacts. Therefore, impacts would be less than significant.

Policy PF-26

Ensure solid waste pick-up and disposal facilities are sufficient to meet new development needs.

Threshold 5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact. The Project would be required to comply with federal, State, and local management and reduction statutes and regulations related to solid waste. During the buildout of the Fowler 2040 GP, solid waste reduction statutes and regulations may change. While the Fowler 2040 GP does not propose any specific development, each individual project as a result of the full buildout of the GP would be required to meet the applicable solid waste reduction statutes and regulations that are in place at the time of construction and operation. This is inclusive of solid waste reduction statutes and regulations at the federal, State, and local level. In addition, policy PF-25 listed below would aid to minimize any potential impacts. Therefore, impacts would be less than significant.

Policy PF-25

Facilitate activities that reduce waste production and/or encourage recycling or reuse of waste when possible to reduce the amount of solid waste sent to landfill in order to meet State targets.

4.20.5 Mitigation Measures

Mitigation measures are not required.

4.20.6 Cumulative Impacts

The full buildout and development under the Fowler 2040 GP would result in the construction, expansion, or use of utilities and service systems including water supply and storage infrastructure, wastewater

¹⁶² (USEPA) Data gathered through discussions with City Staff

infrastructure, storm water infrastructure, solid waste facilities, natural gas, and energy facilities. As individual development projects are proposed, each project would be required to provide adequate access to all of these services. As a result, the availability of each of the services discussed is a limiting factor that ensures that significant impacts would not result from a lack of utilities and service systems available to residents of the City. Therefore, cumulative impacts would be considered less than significant.

Figure 4-25: Existing Water Supply Facilities

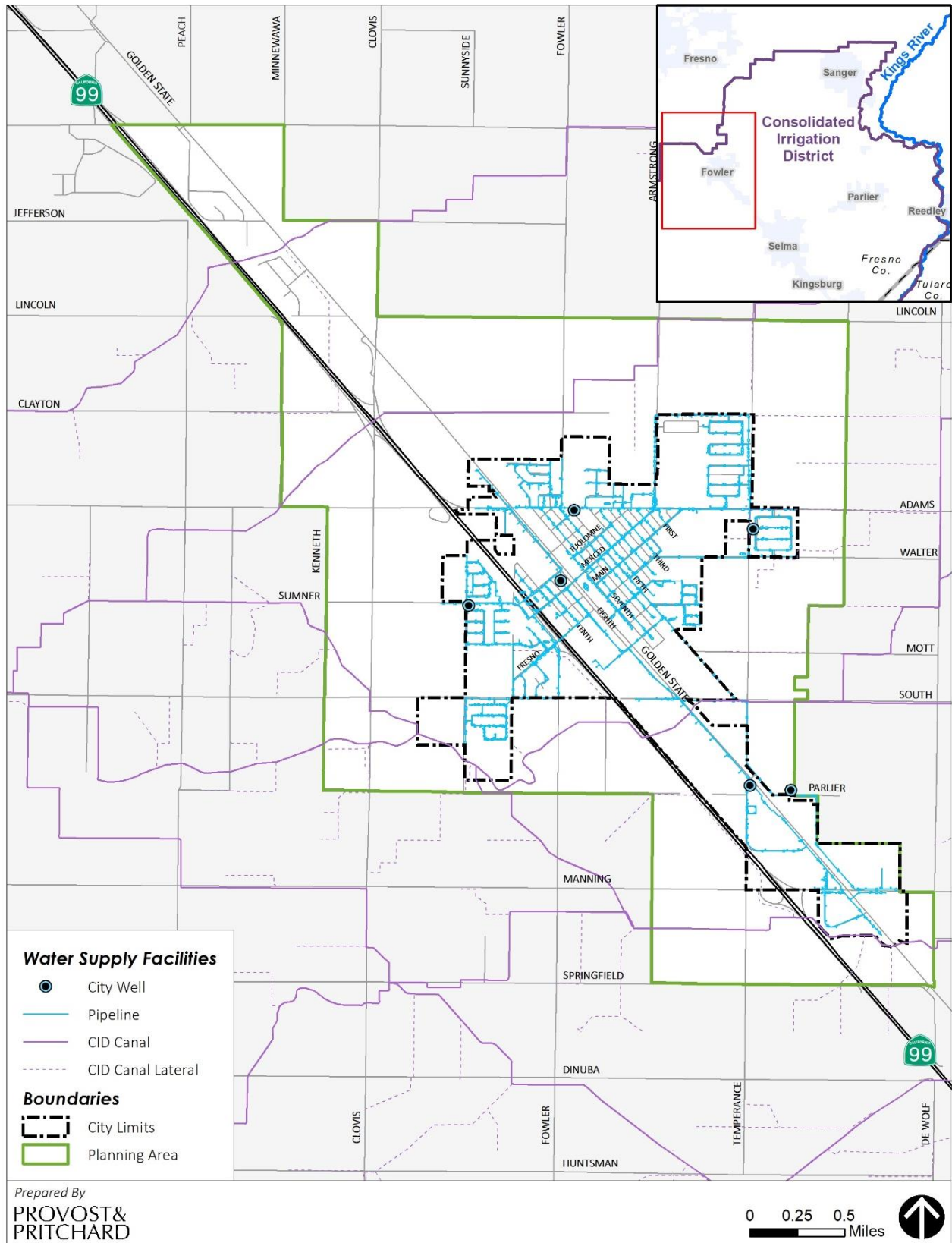


Table 4-51: Existing Wastewater System Infrastructure (SKFCSD 2016)

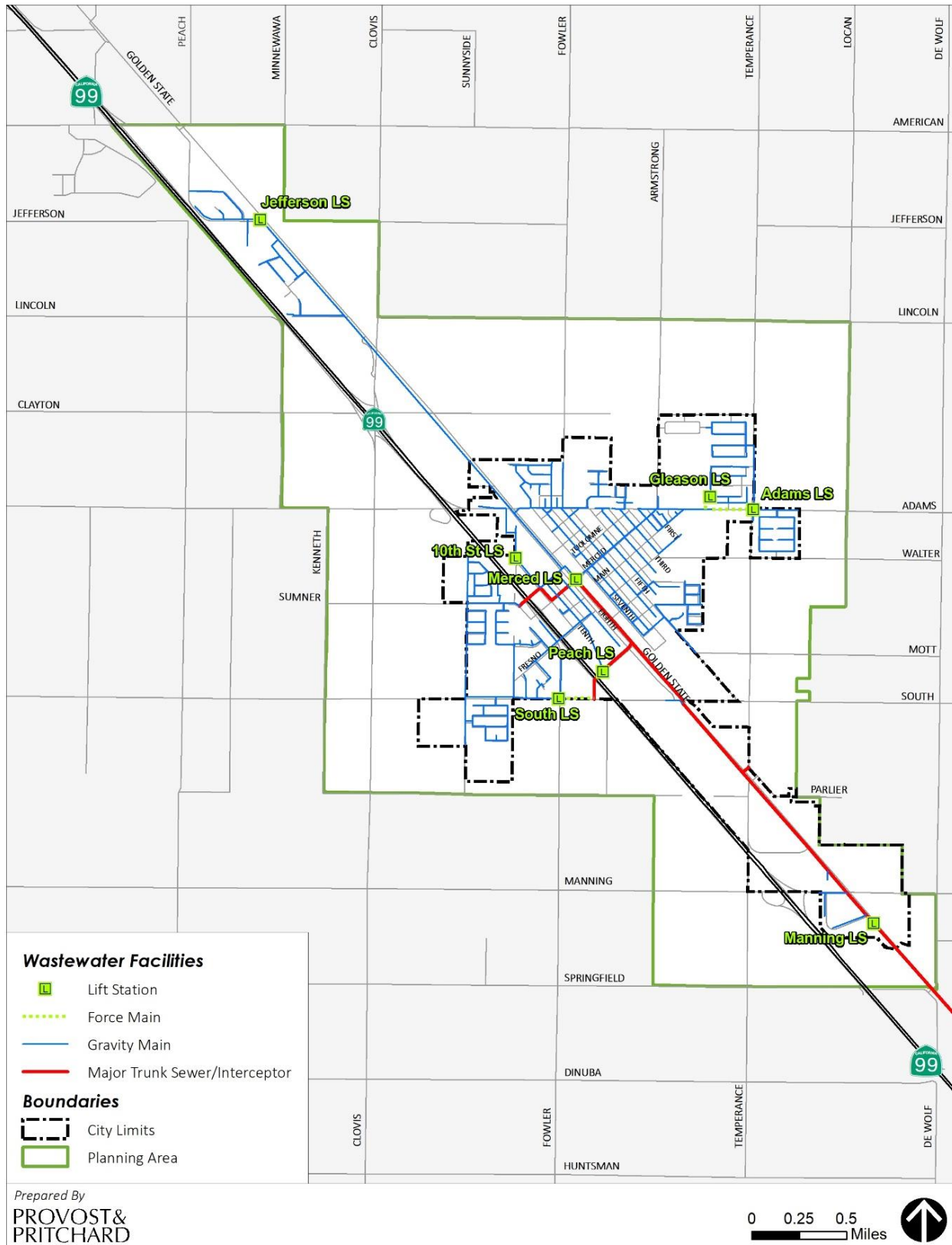


Table 4-52: Planned System Improvements (SKFCS 2016)

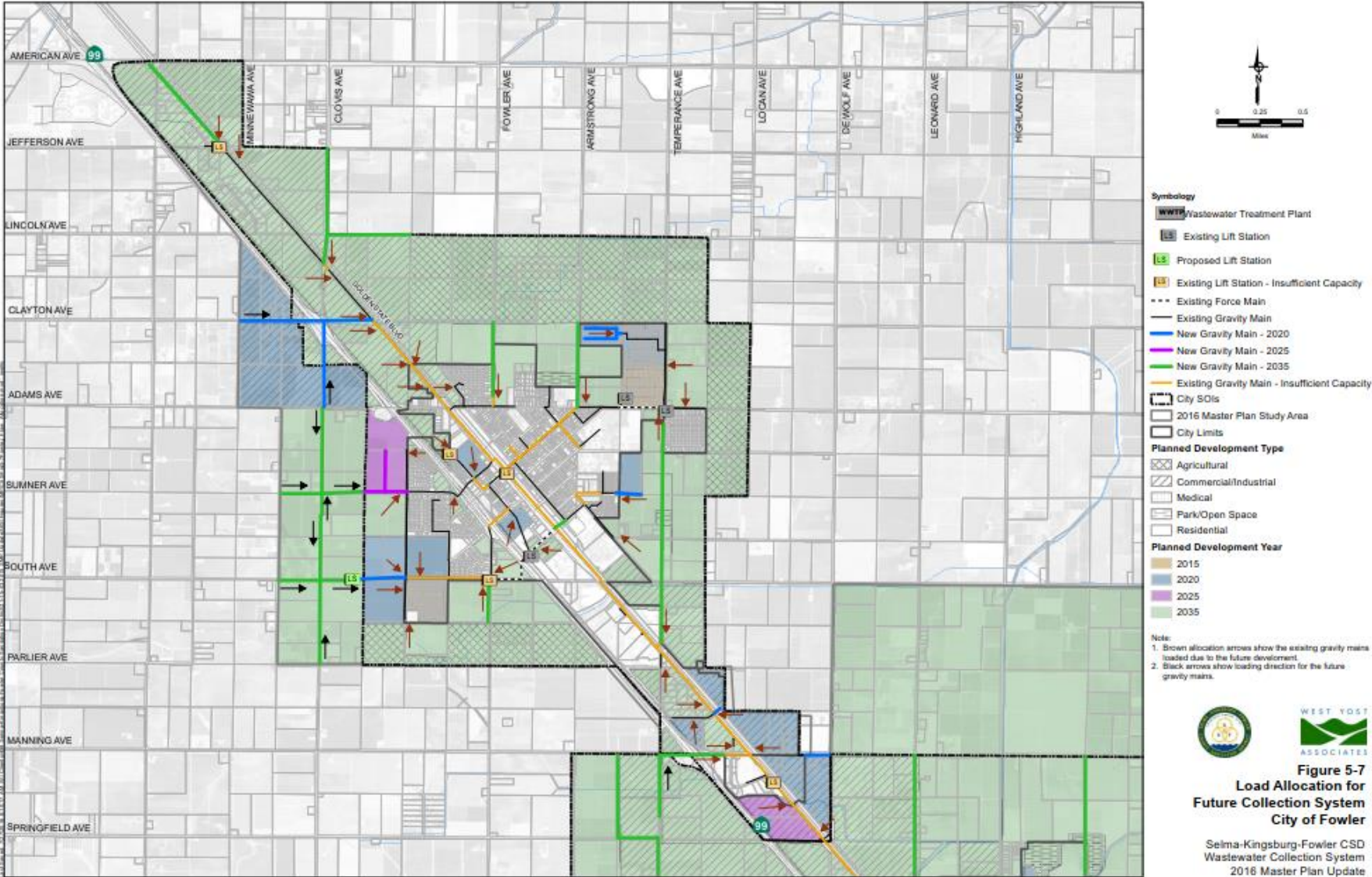
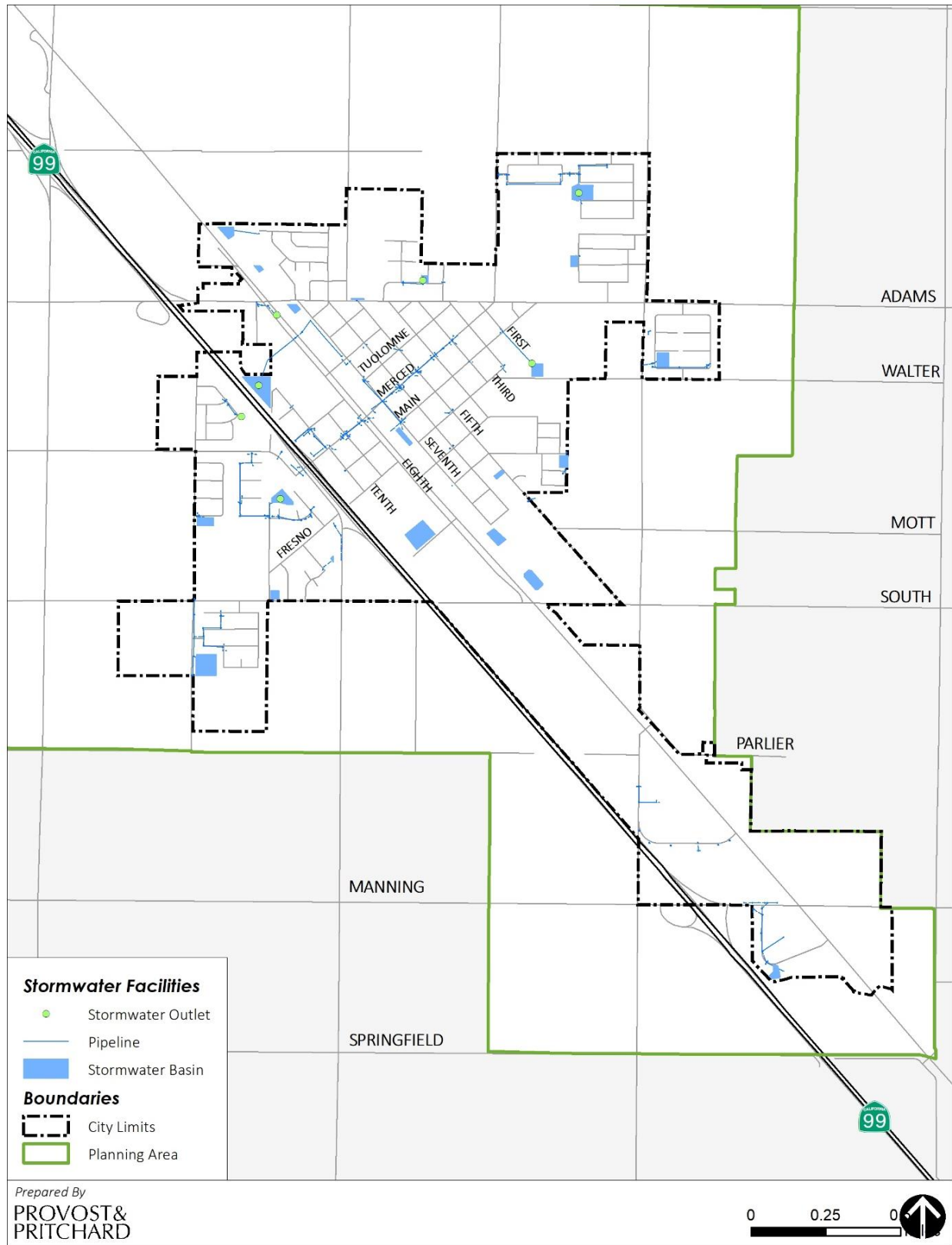


Table 4-53: Existing Stormwater System Infrastructure



4.21 Wildfire

This section evaluates the impacts related to wildfire, including the evaluation of emergency response plans, topography, future infrastructure, and ground instability resulting from runoff, that could result from implementation of the Fowler 2040 GP.

4.21.1 Environmental Baseline

Fire season in California usually begins in May and extends through November. Wildfires can be initiated by a natural occurrence (e.g., lightning) or by accident through human activity. Wildfire hazards are based on factors such as topography and climate conditions (e.g., winds, drought, extreme temperatures). Areas with a higher likelihood of wildfire occurrence are mapped and identified as fire hazard severity zones by the CAL FIRE in accordance with PRC Sections 4201-4204 and GC Section 51175-51189 (See [Figure 4-26](#)).¹⁶³ The nearest very high fire hazard severity zone to the planning area is approximately 26 miles to the northeast. Areas where the State has financial responsibility for wildland fire protection are known as State Responsibility Areas (SRA), while areas where local fire fighters are responsible for wildland fire protection are known as Local Responsibility Areas (LRA) (See [Figure 4-26](#)).¹⁶⁴ Fowler is designated as a LRA and is considered an area with a moderate risk for fire hazards. The nearest SRA to the City is located approximately 14 miles to the northeast. While the Project's environmental baseline is 2019, fire zone mapping and monitoring is subject to change year by year. As a result, the most recent data (2022) and regulations have been used, ensuring that the Project most accurately analyzes the fire risks associated with buildout of the Fowler 2040 GP.

The Fowler fire station is located at 220 E. Main Street across from City Hall and would ultimately house 11 personnel.¹⁶⁵ The Fresno County Fire Protection District considers Fowler and its population when evaluating its fleet size and equipment.¹⁶⁶ The entirety of the Fresno County Fire Protection District fleet and all resources are available to Fowler. This would include Type 1 engines, wildland engines, Type 3 engines, and Type 5 engines.

4.21.2 Regulatory Setting

Federal

Federal Emergency Management Agency

FEMA is an agency within the United States Department of Homeland Security, created via Executive Order 12127 on April 1, 1979 by President Carter. A second Executive Order 12148 signed on July 20, 1979 accorded the agency with the missions of emergency management and civil defense. In order to receive assistance through FEMA in the event of a disaster, a state's governor must declare a state of emergency and formally request a federal government response.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: "Standard;" and "Enhanced." States that develop an approved Enhanced State Plan, which includes California, can increase the amount of funding available

¹⁶³ (California Department of Forestry and Fire Protection 2022)

¹⁶⁴ Ibid.

¹⁶⁵ (City of Fowler 2021)

¹⁶⁶ (National Fire Protection Association 2022)

through the Hazard Mitigation Grant Program. The act has also established new requirements for local hazard mitigation plans.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a landmark wildland fire season. Its intent is to actively respond to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability

State

California Fire Plan

The Strategic California Fire Plan is the State's road map for reducing the risk of wildfire. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

Wildland-Urban Interface Building Standards

Title 24, Part 9 of the 2022 California Fire Code establishes standards and requirements for construction in relation to the prevention of wildfire. These codes include provisions for ignition-resistant construction standards in the wildland urban interface.

California Office of Emergency Service

Through the California Emergency Services Act of 1970, the California Office of Emergency Service provides the basis for local emergency preparedness. The Office of Emergency Services is responsible for preparing the California State Emergency Plan and for coordinating and supporting emergency services conducted by local governments. The responsibility for immediate response to an emergency, such as fires, landslides, earthquakes or riots, rests with local government agencies and segments of the private sector, with support services provided by other jurisdictions and/or State and federal agencies. In accordance with their normal operating procedures, the initial response to an emergency will be made by local Fire, Law Enforcement, Medical or Maintenance (Public Works) districts or departments.

California Fire and Building Code

The 2019 Fire and Building Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

Local

Fresno County Master Emergency Services Plan

The Fresno County Master Emergency Services Plan (2017) analyzes potential hazards and risks to the County of Fresno, while setting an operational hierarchy detailing the level of responsibility for departments within the County. The plan assesses resource management, preparedness, emergency operations, and communications in the event of an emergency situation.

Fresno County Multi-Hazard Mitigation Plan

The purpose of a Local Hazard Mitigation Plan is to reduce or eliminate long-term risk to human life and property resulting from hazards. A Local Hazard Mitigation Plan recognizes risks before they occur, as well as identifies resources, information, and strategies for emergency response. Fresno County, with participation from 17 jurisdictions, is the lead agency on the Multi-Hazard Mitigation Plan. In 2018, the Fresno County Board of Supervisors adopted the Multi Hazard Mitigation Plan, which includes information that pertains to the City in the areas of health, infrastructure, housing, government, environment, and land use.

4.21.3 Methodology and Thresholds of Significance

According to the CEQA Guidelines Appendix G, the proposed Fowler 2040 GP would have a significant impact related to utilities and service systems if it would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan;
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of wildfire;
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.21.4 Impacts

Threshold 1: Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The planning area is not located within or in the vicinity of a very high fire hazard severity zone, nor is it located within an SRA. While Fowler does not currently have an adopted emergency response plan or emergency evacuation plan, Fowler falls under the Fresno County Master Emergency Services Plan and the Fresno County Multi-Hazard Mitigation Plan. Future development as a result of the Fowler 2040 GP could result in roadwork and temporary road closures or impediments. Any work completed within an existing or future roadway would be required to be approved by the City Engineer prior to commencement of construction activities. As a result, evacuation routes would be properly maintained, and no conflict would occur with the Fresno County Master Emergency Services Plan and the Fresno County Multi-Hazard Mitigation Plan. Therefore, impacts would be less than significant.

Threshold 2: Would the Fowler 2040 GP, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant Impact. Fowler is not located within or in the vicinity of a very high fire hazard severity zone, nor is it located within an SRA. In addition, Fowler provides an urban and built-up setting that would present a low risk of wildfire due to environmental factors. Any vegetation within Fowler would be maintained to City standards. In addition, Fowler is surrounded by agricultural land that would be maintained to prevent unruly vegetation, helping to lower the wildfire risk in the vicinity. The

maintenance of vegetation both within Fowler and the land surrounding Fowler would slow the spread of any potential wildfire, allowing local firefighters to respond to prevent a widespread event. Due to the level of risk identified on **Figure 4-26**, wildfire is unlikely to occur. In addition, based on topography, should a wildfire occur, it is unlikely to be exacerbated by environmental factors.

Threshold 3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than Significant Impact. Fowler is not located within or in the vicinity of a very high fire hazard severity zone, nor is it located within an SRA. As Fowler develops, infrastructure would be required to be extended accordingly. Any future development would be required to be consistent with the current CBC during the time of development. Requirements within the CBC would ensure future development includes fire hydrants, fire sprinklers, fire extinguishers, and other fire safety measures within new development. Any future development would be reviewed by the Fire Department for approval. The development of future infrastructure within Fowler’s planning area would be located on land that is unlikely to experience wildfire due to its distance from very high fire hazard severity zones. Therefore, impacts would be less than significant.

Threshold 4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact. Fowler is not located within or in the vicinity of a very high fire hazard severity zone, nor is it located within an SRA. Further, the planning area is not located on land that includes substantial slope at risk of landslide which would put the public at increased risk of wildfire due to post-fire slope instability. Some areas within Fowler are within a 100-year flood zone. This includes a portion of Fowler to the northwest and a portion of the planning area to the southeast. While flooding could impact drainage and vegetation that would reduce the spread of wildfire, the planning area is not within an area at an increased risk of wildfire.

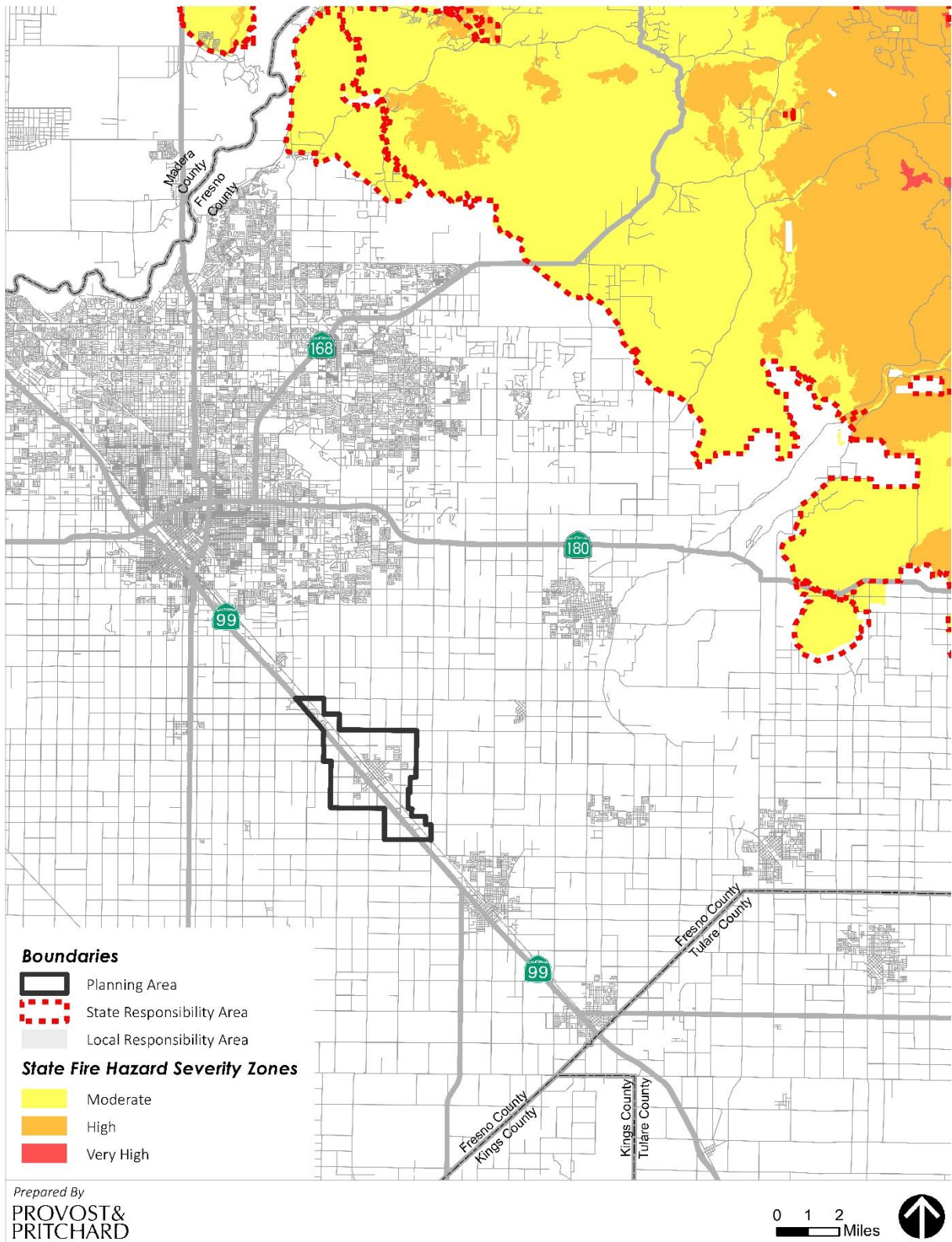
4.21.5 Mitigation Measures

Mitigation measures are not required.

4.21.6 Cumulative Impacts

As discussed above, Fowler is not in an area that is likely to experience wildfires. Each potential future project that would expand the urban boundary of Fowler would be required to meet all applicable standards and regulations governing wildfire prevention, including the use of the most up to date version of the CBC. In addition, future projects would be required to meet the requirements of Fowler’s municipal code, which regulate safety and design standards within Fowler. Fowler also uses landscape maintenance districts, ensuring that vegetation within Fowler is well-kept, helping to prevent the spread of wildfire. These requirements would assure that significant impacts would not occur, and there would be no significant cumulative impact in regard to wildfire.

Figure 4-26: Very High Fire Hazard Severity Zones and State Responsibility Areas Map



4.22 Impacts Found Not to be Significant

CEQA Guidelines Section 15128 requires a DEIR to briefly describe any possible significant effects that were determined not to be significant and, therefore, were not discussed in detail. Chapter 4 of this DEIR discusses all potential impacts, regardless of their magnitude in all issue areas. This section summarizes the potential environmental impacts of the Fowler 2040 GP that clearly would not be significant.

- Forestry: Forestry resources do not occur in the planning area and, therefore, would not be affected by the land use changes in the Proposed Plan.
- Mineral Resources: There are no mineral resources identified in the planning area and, therefore, no potential impacts on this type of resource. It does not appear that there are any active oil wells in the vicinity of proposed new development or redevelopment.

Chapter 5 Other CEQA Required Discussions

5.1 Growth Inducement

CEQA Guidelines Section 15126(d) requires a discussion of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population and Employment Growth

As is discussed in [Section 4.15](#), at full buildout of the Fowler 2040 GP, Fowler would have a projected population of 48,131 people and a projected dwelling unit count of 14,764 units. This reflects a population increase of 41,526 people and 12,703 dwelling units between 2019 and 2040. The Fowler 2040 GP plans for a mix of development types that may not actually occur within the planned period due to development and growth trends. For instance, Fowler has grown at a rate between two and three percent since the 2025 GP was adopted in 2004. If this trend continues and Fowler were to grow at a constant rate of three percent through 2040, Fowler would have a population of 11,833 people. The Fowler 2040 GP includes goals and policies that would encourage orderly development and infill development that would minimize the impacts of population and housing growth as a result of the Fowler 2040 GP. The purpose of the Fowler 2040 GP is to provide the framework for growth to occur in both a logical and orderly manner within the City. This framework would be used as a guide for future development through the life of the GP.

5.1.2 Removal of Obstacles to Growth

The largest potential growth inhibitor that Fowler faces now and into the future is the lack of infrastructure to provide roads and utilities for a larger population to utilize, and very little room for economic growth and development. Growth and city expansion would occur as infrastructure is built out. Without access to public utilities or roadways, growth cannot and would not occur. In addition, the supply of water within Fowler would be a determining factor in its future growth potential. Fowler would be required to show that it has ample water supplies to serve a future population that is proposed by future individual development projects. The necessity of public utilities, roads, opportunities for economic growth, and water supply are the determining factors that control the growth rate of Fowler.

The existing GP could be viewed as an obstacle to growth, given that Fowler is almost built out under existing land use designations. The very act of updating the GP could be viewed as removing an obstacle to growth. There is an existing demand for both residential and employment growth, which Fowler is trying to accommodate by revising some land use designations. Redevelopment of several sites within Fowler and implementation of numerous policies intended to reduce overall impacts will allow additional growth in a more compact and efficient manner.

5.2 Irreversible Environmental Effects

PRC Sections 21100(b) (2) and 21100.1(a) require that DEIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes resulting from Project implementation. CEQA Guidelines Section 15126.2(c) describes significant irreversible environmental changes that would be caused by a proposed project.

Use of nonrenewable resources during the initial and continued phases of a project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. Generally, a project would result in significant irreversible environmental changes if:

1. The primary and secondary impacts would generally commit future generations to similar uses;
2. The project would involve a large commitment of nonrenewable resources;
3. The project involves uses in which irreversible damage would result from any potential environmental accidents associated with the project; or
4. The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the Fowler 2040 GP would accommodate future development that would result in the conversion of presently undeveloped land to residential, commercial, industrial, office, public, and recreational uses. Development consistent with the GP would constitute a long-term commitment to these land uses. Additionally, irreversible changes would likely occur due to future excavation, grading, and construction activities associated with future land uses consistent with the GP. Although the environmental impacts of these changes can generally be minimized through application of mandatory polices and implementation of mitigation measures, the potential for disturbance would represent an irreversible change. Restoration of the region to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

Renewable, nonrenewable, and limited resources that would likely be consumed as part of future development consistent with the Fowler 2040 GP would include, but are not limited to oil, gasoline, lumber, construction aggregates, asphalt, surface water and groundwater, energy, steel, and similar materials. Development of land uses consistent with the GP would require the consumption of lumber, aggregates, asphalt, steel, and other construction materials. Both construction and operation of land uses would require the consumption of oil, gasoline, water, and energy. For example, construction equipment would require oil and gasoline for operation, and residents of new housing units would consume energy and water during daily activities.

In addition, development of the proposed project would result in increased demand on public services and utilities (see [Section 4.16](#), Public Services, and [Section 4.20](#), Utilities and Service Systems). This increased demand would require expansion of infrastructure that would result in irreversible conversion of land similar to other development types and would also result in the permanent commitment of resources such as water and energy by making these resources available to more consumers. Long-term impacts would also result from an increase in vehicular traffic, and associated noise emissions (see [Section 4.18](#), Transportation, and [Section 4.14](#), Noise). Additional development that would occur under the Project could

result in the loss of significant historical resources (see [Section 4.6](#) Cultural Resources) or important farmland (see [Section 4.3](#), Agriculture Resources) as land containing these resources is converted to other land uses.

CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the Project. As described in [Section 4.10](#), Hazards and Hazardous Materials, implementation of the GP would allow for the development of land uses, such as industrial buildings, that commonly store, use, and dispose of hazardous materials. Additionally, industries and businesses using hazardous materials may expand or increase to accommodate the projected population growth under implementation of the Fowler 2040 GP. Compliance with applicable federal, State and local hazardous materials regulations would ensure that the Project would not result in irreversible environmental damage related to the accidental release of hazardous materials.

Chapter 6 Alternatives

The alternatives analysis below meets the requirements of CEQA Guidelines Section 15126.6. This DEIR examines a range of reasonable alternatives to the Project that would feasibly attain similar objectives of the project while minimizing or eliminating impacts of the proposed Project. The CEQA Guidelines further direct that the range of alternatives be guided by a “rule of reason,” such that only those alternatives necessary to permit a reasoned choice are addressed.

Among the factors that may be considered when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, and jurisdictional boundaries.

Analysis of the following three alternatives to the Fowler 2040 GP are provided for informational purposes and to allow the decision makers to consider the Fowler 2040 GP in light of hypothetical alternative development scenarios, thereby promoting CEQA’s purpose as an information disclosure statute. This analysis is guided by the following considerations set forth under CEQA Guidelines Section 15126.6:

- A DEIR need not consider every conceivable alternative to a project;
- A DEIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
 - Failure to meet most of the basic project objectives;
 - Infeasibility; or
 - Inability to avoid significant environmental effects.

6.1 Project Objectives/Guiding Principles

Alternatives are compared to the GP based on an avoidance of environmental impacts and how closely they adhere to the vision statement is as follows:

The City of Fowler is a safe, affordable place to live with a small-town feel. Fowler’s community events and thriving schools create a place where you can raise your family and know your neighbors. Fowler fosters a dynamic business-friendly environment where shared goals and cooperation support local businesses and new economic investment. Thoughtful policies help conserve natural resources and provide well-maintained infrastructure to support responsible growth and development while preserving the unique, small-town identity that makes Fowler a great place to live, work, and play.

In accordance with CEQA Guidelines Section 15124, the following primary objectives were developed to support the project’s purpose, assist the lead agency in developing a reasonable range of alternatives to be evaluated in this DEIR, and ultimately aid decision-makers in preparing findings and overriding considerations, if necessary:

Protecting our Community’s Character. We celebrate Fowler’s unique small-town character and balance it with the need to foster growth both physically and economically. Our commitment to facilitating growth in a way that complements our character is reflected in core planning documents. Growth policies preserve our central commercial core, residential neighborhoods, and support local businesses that contribute to the fabric of our community.

Our Economy Thrives and Businesses Provide Local Amenities. We value and support businesses which bolster the community by providing jobs, services, goods, and recreational opportunities. Economic development focuses on supporting business expansion and diversification. Our small-town character is preserved while also providing jobs and increased local amenities, ensuring residents the opportunity to live, work, and recreate all in one place.

Growth Occurs Thoughtfully and is Shaped by our Community. A creative growth management strategy allows expansion to occur in a way that aligns economic needs, community vision, and regional goals. There is a strong system in place to guarantee that as the community accommodates new neighbors and new jobs, it continues to maintain and improve upon the lives of City residents, ensuring infrastructure and services successfully reach growth areas while continuing to serve established neighborhoods. New development is executed through land use decisions which involve careful research, coordination, and community outreach.

Our Community is Mobile and Connected. Our circulation system is complete, with amenities which make walking, biking, and transit use a safe, comfortable, and viable means of getting from place to place. Roadways are scaled appropriately for the types of land uses that surround them and provide access to jobs, services, goods, and recreational opportunities. The central commercial core is contiguous, with a well-maintained streetscape. Our circulation patterns are shaped by urban design principles which value street design as a method of community connection and placemaking.

Parks and Recreation are a Focal Point of our Community. Our parks and recreation facilities are safe, accessible, and connected to the community they serve. Passive and active recreation opportunities are abundant and coordinated across local facilities and organizations.

6.2 Development of Alternatives

Identifying land use alternatives began with research of existing plans, policies, and technical studies relevant to land use in Fowler. The research phase builds on previous deliverables, including the Fowler Background Report, policy papers on environmental justice and climate adaptation (located in [Appendix J](#)), and a policy review of the adopted GP.

The Project team, made up of City staff and consultants, then held stakeholder interviews (April 22, April 29, and April 30, 2019) which helped identify key issues, and hosted public workshops to share a new community vision, supporting principles, and identify planning priorities to be addressed during the updated process. Additional public workshops were held in 2019 (January 15, October 3, and November 5), in 2020 (August 18 and November 14), and 2021 (April 28 and July 1) to inform decision-makers of progress and key milestones in the process. Next steps included analyzing baseline conditions, establishing additional planning metrics and considerations, revising land use designations, and determining growth areas and areas of change. Once complete, these analyses facilitated the development of alternative land use plans.

The analysis of alternatives focuses on the various land use scenarios that incorporate different assumptions regarding the combinations of future land uses and associated infrastructure improvements. Alternatives provided are intended to reduce or avoid significant and unavoidable impacts. As discussed in [Chapter 4](#), the Project would have significant and unavoidable impacts related to Agriculture and Forestry Resources, Greenhouse Gas Emissions, and Air Quality. The following alternatives are evaluated in this DEIR:

- **Alternative 1:** No Project (2025 General Plan)
- **Alternative 2:** Existing Sphere of Influence

- **Alternative 3:** Primary Development Area Only
- **Alternative 4:** Full Buildout (Preferred Option)

Alternatives have been created to provide decision makers with a reasonable range of options to consider. Analyzing these options helps to demonstrate to decision makers and the general public the effects of revising components of the proposed Fowler 2040 GP. A summary description of the alternatives is provided below and summarized in [Table 6-1](#).

No Project Alternative

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative “to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” The No Project Alternative in this case consists of not adopting the Fowler 2040 GP while continuing to utilize the City’s existing General Plan. Under this alternative, all land use changes and boundary changes will not occur and development will continue to be governed by the existing General Plan.

Existing SOI Alternative

The SOI Alternative considers the SOI from the City’s existing 2025 General Plan while making changes to the land uses to match those proposed under the Project. Namely, it removes the agricultural land designation from within the SOI and replaces it with various residential, commercial, industrial, and public facility designations which are more appropriate. Some other land use changes within the existing SOI are also retained in this alternative, including the conversion of some residential land to commercial uses and the redesignation of some land to public facilities land uses to better represent the existing use. This alternative includes the policy changes included in the Project.

The Existing SOI Alternative includes approximately 3,833 acres, 1,137 fewer than the Project. As such, all land uses except for Heavy Industrial also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 2,012 acres of residential land uses support a build-out of 10,833 dwelling units (which also includes 370 units from mixed-use commercial areas), 4,697 fewer than the Project. The Existing SOI Alternative accounts for approximately 21,281,377 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 23,325 employees. This is approximately 4,442,201 fewer square feet and approximately 7,553 fewer employees than the Full Fowler 2040 GP Buildout.

PDA Only Alternative

The PDA Alternative considers the proposed land uses in the PDA from the Project. This alternative recognizes the City’s desire to prioritize infill development in the PDA by excluding other areas from the Plan as well as to encourage industrial development along the Golden State Corridor. This alternative includes the policy changes included in the Project.

The PDA Alternative includes approximately 3,468 acres, 1,502 fewer than the Project. As such, all land uses except for Heavy Industrial and Parks and Open Space also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 1,380 acres of residential land uses support a build-out of 7,504 dwelling units (which also includes 361 units from mixed-use commercial areas), 8,026 fewer than the Project. The PDA Alternative accounts for approximately 24,875,892 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 29,296 employees. This is approximately 847,686 fewer square feet and approximately 1,582 fewer employees than the Full Fowler 2040 GP Buildout.

Full Fowler 2040 GP Buildout Alternative – Preferred Alternative

The Full Fowler 2040 GP Buildout is the subject of this DEIR and has thoroughly been evaluated in **Chapter 4**. It is the selected Project that would fulfil the vision of Fowler and satisfy the requirements of a growing community. The Full Fowler 2040 GP Buildout Alternative consists of developing the existing SOI and a potential expansion area includes the approximately 671 acres located beyond the existing SOI for the City of Fowler. This area has been included in the Planning Area as it represents land outside the existing City limits and SOI boundaries which in the City’s judgement bears relation to its planning efforts. The expansion area is comprised of two sections of land, located along the western boundary of the existing SOI.

The northern expansion area would expand the City’s potential for expansion west to Minnewawa and Kenneth Avenues, respectively. This expansion area would capture the State Route (SR) 99 and Clovis Avenue interchange in a more effective way than the current SOI boundary does.

Table 6-1: Comparative Summary of Fowler 2040 GP Alternatives

Alternative	Population	Employment	Residential Development (Dwelling Units)	Non-Residential Development (Square Feet)	Vehicle Miles Traveled (VMT)
No Project Alternative	10,571	8,792	3,223	7,579,319	247,894
Existing SOI Alternative	35,533	23,325	10,833	21,281,377	953,359
PDA Only Alternative	24,612	29,296	7,504	24,875,892	1,021,796
Full Fowler 2040 GP Buildout Alternative	48,404	30,102	15,718	25,822,662	1,240,395

Land use, population, and employment data were provided by email correspondence (Provost & Pritchard 2022) and VMT was included in the traffic report (Kittelison & Associates 2022).

6.3 Alternatives Evaluated in the DEIR

6.3.1 Alternative 1: “No Project” Alternative

Description

CEQA Guidelines Section 15126.6(e) requires a DEIR to evaluate a “No Project” Alternative, which is defined as what would be reasonably expected to occur in the foreseeable future if the project were not approved. Under this alternative, the 2025 GP would remain as the comprehensive planning document. Development would occur as allowed under the 2025 GP.

The “No Project” alternative assumes Fowler’s existing GP remains unchanged. There would be no new policies or programs in place that provide direction for issues regarding energy sustainability and climate resiliency, conservation of biological and mineral resources, protection of cultural and tribal resources, mitigation for hazardous materials, and wildfire management. Therefore, Fowler would not have in place any overarching policy guidance for how those issues will be addressed over the long term. There would also be no guidance for Fowler to manage inevitable growth or need for new housing and development.

The “No Project” Alternative includes approximately 3,939 acres, which is 1,031 acres less than the Project. The Project proposes a new land use designation, Medium High Residential, which is not included in the No Project alternative. The “No Project” Alternative also retains a land use that is not included in the Project, with 876 acres being designated for agricultural uses. All land uses in the “No Project” Alternative have fewer acres than the Project except for Agriculture, which is not included in the Project, and Heavy Industrial, which has the same acreage in both alternatives. Acreages for each land use can be seen in **Table 6-2** below.

Table 6-2: Comparison of the Project vs. “No Project” Alternative

Land Use Category	Total Acreages		Population		Dwelling Units	
	"No Project" Alternative	Proposed GP	"No Project" Alternative	Proposed GP	"No Project" Alternative	Proposed GP
Low Residential	258	790	2,435	7,461	742	2,275
Medium Low Residential	638	937	9,205	13,506	2,806	4,118
Medium Residential	326	733	6,920	15,935	2,110	4,858
Medium High Residential	0	203	0	7,886	0	2,404
High Residential	44	83	2,542	4,753	775	1,449
Residential Subtotal	1,266	2,746	21,102	49,540	6,434	15,104
Neighborhood Commercial	10	28	0	0	0	0
Community Commercial	60	104	682	1,397	208	426
General Commercial	146	210	0	0	0	0
Commercial Subtotal	215	342	682	1,397	208	426
Light Industrial	336	598	0	0	0	0
Heavy Industrial	1,105	1,105	0	0	0	0
Industrial Subtotal	1,441	1,703	0	0	0	0
Agriculture	876	0	0	0	0	0
Parks/Open Space	25	55	0	0	0	0
Public Facilities	117	123	0	0	0	0
Open Space Subtotal	1,018	178	0	0	0	0

The 1,266 acres of residential land uses support a build-out of 6,641 dwelling units (which also includes 208 units from mixed-use commercial areas), or 8,889 fewer than the Project. The No Project alternative accounts for approximately 21,137,978 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 23,110 employees. This is approximately 4,585,600 fewer square feet and approximately 7,768 fewer employees than the Project.

Impact Analysis

Aesthetics

Implementation of the “No Project” Alternative would involve less development and retain agricultural lands within the planning area, maintaining its heritage as a small-town, farming based community. The Project would increase the acreage of land under urban development and reduce the area of open space, parks, and agricultural land (See [Table 6-2](#)). The conversion and development of all agricultural land within the planning area under the Project would hinder many residents’ scenic views of a key aesthetic resource and replace those views with sights of new development and commercial buildings, while also eliminating an important land use that defines the aesthetic character of Fowler.

The “No Project” Alternative would have fewer benefits with respect to promoting high quality, compatible design and ensure the preservation of existing aesthetic character of the downtown area with its unique historic buildings. The Fowler 2040 GP includes goals, policies, and implementation measures that promote good design with new development, emphasize the visual quality of the public realm, and protect historic and cultural buildings that enhance Fowler’s charm.

Development under the Fowler 2040 GP would result in the potential for increased daytime glare from additional windows and reflective surfaces of buildings, as well as nighttime light associated with a higher number of dwelling units (See [Table 6-2](#)). However, as described in [Section 4.2](#), this increase would not be a substantial change from existing conditions and would result in similar impacts compared to the “No Project” Alternative.

Although the Project would implement standards, goals, and policies to minimize or avoid impacts to scenic views or historic buildings that give Fowler its charm, it would also promote conversion of all agricultural land within the planning area, which could impact aesthetic resources for some residents. Therefore, the “No Project” Alternative would potentially result in less impact to aesthetic resources compared to the Project.

Agriculture and Forestry Resources

As described in [Section 4.3](#), full buildout of the Project would result in a potentially significant impact to agriculture and forestry resources, converting a combined total of 3,674.12 acres of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland to non-agricultural uses. The Project would also potentially cancel Williams Act contracts. There are no feasible mitigation measures that would minimize or avoid impacts and, at the same time, adhere to the circulation and development goals proposed by the Project.

Neither the “No Project” Alternative, nor the Project would conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. These zones are not found within the City or immediate vicinity.

Implementation of GP policies proposed by the Project would minimize the impact to an extent, but the conversion of agricultural land would have a significant and unavoidable impact to agricultural resources. The “No Project” Alternative would maintain existing land uses and result in lower impact to agricultural and forestry resources compared to the Project.

Air Quality

This alternative would result in the lowest amount of land use development and consequently the lowest amount of associated emissions. Implementation of the No Project Alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be no impact associated with this alternative.

In comparison to full Fowler 2040 GP buildout and the alternatives evaluated, this alternative would result in the lowest amount of land use development. As shown in [Table 6-3](#), it would also result in the lowest amount of associated emissions. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, full Fowler 2040 GP Buildout Alternative would result in increased adverse impacts related to emissions and air quality.

Table 6-3: Comparison of Operational Emissions Within Planning Area

Source	Emissions (tons/year) ¹				
	ROG	NO _x	CA	PM ₁₀	PM _{2.5}
No Project Alternative²					
Area ³	60.0	1.5	24.6	0.2	0.2
Energy ³	1.2	10.3	7.3	0.8	0.8
Mobile ⁴	24.0	68.4	200.8	3.7	1.9
Total:	85.2	80.2	232.7	4.7	2.9
Full Fowler 2040 GP Buildout Alternative					
Area ³	250.6	7.2	118.9	1.1	1.1
Energy ³	4.7	41.2	27.9	3.2	3.2
Mobile ⁴	43.1	114.7	359.5	14.6	5.5
Total:	298.4	163.1	506.3	18.9	9.8
Net Change Compared to No Project Alternative:	213.2	82.9	273.6	14.2	6.9
SJVAPCD Significance Thresholds⁵:	10	10	100	15	15
<p>1. Totals may not sum due to rounding.</p> <p>2. No Project Alternative based on existing Geral Plan land uses and year 2019 VMT provided.</p> <p>3. Emissions calculated using CalEEMod2020.4.0. Area source emissions are predominantly associated with the use of consumer products (e.g., cleaning supplies). Other area sources include landscape maintenance equipment, natural gas-fired appliances, and architectural coatings.</p> <p>4. Emissions calculated based on data derived from the VMT analysis prepared for this project and emission factors for Fresno County derived from EMFAC2021. Annual emissions of SOX associated with typical development are anticipated to be negligible and were not included.</p> <p>5. SJVAPCD Significance Thresholds apply to individual projects and are presented for informational purposes only. Refer to Appendix C for emissions modeling assumptions and results.</p>					

Biological Resources

As described in Section 4.5, the planning area and surrounding lands are highly disturbed residential and agricultural areas and provide few resources and an inhospitable environment for special status species. Any species that may occur in these areas are typically adapted to anthropogenic disturbance and/or are ornamental species. The Fowler 2040 GP would involve greater urban development and expansion than the “No Project” Alternative, as well as conversion of agricultural land for non-agricultural uses. Neither scenario provides specific policies to protect special status species or their natural habitat. However, if special status species or protected habitat is known or observed, development under either scenario would be subject to CDFW or USFWS regulations.

The Fowler 2040 GP proposes the development of vacant or underdeveloped land and encourages growth of residential, commercial, and industrial areas. Implementation of the “No Project” Alternative would involve less overall development and associated growth than would occur under the Project. However, both the “No Project” Alternative and the GP provide goals and policies aimed to preserve street trees and the urban forest. Therefore, development occurring under the Project and the “No Project” Alternative would be subject to regulations regarding preservation of urban biological resources, ensuring that impacts under both scenarios would be reduced to less than significant.

Riparian area and natural communities of special concern are absent from the planning area. Therefore, there would be no impact to these biological resources as a result of either the Project or the “No Project” Alternative.

Designated federally protected waters, as defined by Section 404 of the Clean Water Act, are currently not present in the planning area. However, as described in Section 4.5, National Wetland Inventory (NWI) indicates that potential wetlands are located within the planning area that may be categorized as waters of the United States or waters of the State. Activities involving impacts to state and/or federally protected waters are regulated by CDFW, USACE, and RWQCB. Therefore, activities would be regulated, and

mitigation measures would be provided by these agencies for activities under the Project and “No Project” Alternative that would avoid impacts of minimize them to a less than significant level.

As described in [Section 4.5](#), the planning area and surrounding lands are highly disturbed and provide few resources for special status species. Canals have the potential to facilitate movement, but are also highly disturbed and maintained within the planning area, making them inhospitable movement corridors. Therefore, it is unlikely that species would use the planning area for dispersal or migration. Development proposed under both the Project and “No Project” Alternative would therefore have a less than significant effect on wildlife movement.

There are no Habitat Conservation Plans or Natural Community Conservation Plans Applicable to the planning area. Therefore, both the “No Project” Alternative and Fowler 2040 GP would have no impact.

Cultural Resources

Implementation of “No Project” Alternative would involve less overall development and associated growth and would not include the expansion areas proposed under the Project. The “No Project” Alternative would involve infill development in vacant and underutilized parcels in already urbanized areas of Fowler, while the Project would expand into the surrounding agricultural areas, causing notably more ground disturbance. However, despite the greater level of potential ground disturbance under the Project, the enhanced goals and policies related to cultural and historic resources embedded within the Fowler 2040 GP ensure that overall impacts are less than significant. The “No Project” Alternative lacks any such protections. Therefore, Implementation of the “No Project” Alternative would potentially cause greater impacts to cultural and historical resources over the long term.

Similarly, the Project encourages renovation of the downtown area, and thus, may increase the desirability of redeveloping historic structures compared to the “No Project” Alternative. Compliance with the established regulatory framework proposed by the Project would ensure impacts are less than significant, compared to the “No Project” Alternative, which provides no such safeguards.

While development under the Project would be significantly greater than the “No Project” Alternative, activities under both scenarios would be required to adhere to existing State and federal regulations regarding the treatment of human remains. Therefore, impacts would be less than significant under the Project and the “No Project” Alternative.

Energy

Under the “No Project” Alternative overall predicted fuel and energy use associated would be lower than that generated by the other alternatives evaluated. However, when evaluated on a per capita basis, this alternative would result in higher fuel consumption than the other alternatives evaluated. Energy use on a per capita basis would be higher than that associated with the “Existing SOI” Alternative and the Project, yet slightly lower than that associated with the “PDA Alternative”. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be no impact associated with the “No Project” Alternative.

As shown in [Table 6-4](#) and [Table 6-5](#), overall predicted fuel and energy use associated with this alternative would be lower than that generated by the Full Fowler 2040 GP Buildout and the alternatives evaluated. However, when evaluated on a per capita basis, this alternative would result in higher fuel consumption than the other alternatives evaluated and the Full Fowler 2040 GP Buildout Alternative. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, fewer adverse impacts from energy use would result from this Alternative than Full Fowler 2040 GP Buildout.

Table 6-4: Comparison of Operational Fuel Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
No Project Alternative²		
On Road Vehicles (Diesel)	1,451,044	199,346
On Road Vehicles (Gasoline)	3,689,421	443,786
Total:		643,132
Estimated Population:		6,808
MMBTU/Capita:		94.5
Full Fowler 2040 GP Buildout Alternative		
On Road Vehicles (Diesel)	5,885,630	808,574
On Road Vehicles (Gasoline)	11,388,136	1,363,819
Total:		2,172,393
Estimated Population:		48,404
MMBTU/Capita:		44.9
<p><i>MMBTU = Million metric British thermal units</i></p> <p><i>1. Fuel use was calculated based, in part, on project trip generation rates derived from the traffic analysis prepared for this project (Kittelson & Associates 2022).</i></p> <p><i>2. No Project Alternative based on existing General Plan land uses and year 2019 VMT provided.</i></p> <p><i>3. Refer to Appendix C for modeling assumptions and results.</i></p>		

Table 6-5: Comparison of Operational Electricity and Natural Gas Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
No Project Alternative²		
Electricity Consumption	52,309,627 kWh/year	178,480
Water Use, Treatment, and Conveyance	7,296,595 kWh/Year	24,896
Natural Gas Use	213,620,578 kBTU/Year	213,621
Total:		416,997
Estimated Population:		6,808
MMBTU/Capita:		61.3
Full Fowler 2040 GP Buildout Alternative		
Electricity Consumption	336,659,330 kWh/Year	1,148,682
Water Use, Treatment, and Conveyance	26,572,392 kWh/Year	90,665
Natural Gas Use	862,651,820 kBTU/Year	862,652
Total:		2,101,998
Estimated Population:		48,404
MMBTU/Capita:		43.4
<p><i>MMBTU = Million metric British thermal units</i></p> <p><i>1. Fuel use was calculated based, in part, on default construction schedules, equipment use, and vehicle trips identified for the operation of similar land uses contained in the CalEEMod output files prepared for the air quality analysis conducted for this project.</i></p> <p><i>2. No Project Alternative based on operational year 2019. Refer to Appendix C for modeling assumptions and results.</i></p>		

Geology and Soils

Due to the lack of any Alquist-Priolo Fault Zones, active faults, or potentially active faults within the planning area, neither the “No Project” Alternative nor Project would produce any impacts due to fault rupture.

Although the potential for liquefaction and landslides in Fowler are low due to the flat, level topography, the Project would incorporate existing regulatory standards within the CBC as well as seismic and geologic safety goals and policies in future construction and development, ensuring that any potential impact relating to seismic related ground failure, including liquefaction and landslides, is less than significant. The “No Project” Alternative lacks specific policies regarding seismic safety and may potentially have greater impacts during future seismic events.

Development involving soil disturbance is anticipated under the “No Project” Alternative and the Project, although substantially more would be involved under the Project due to increased development. Both scenarios would be required to comply with applicable local, state, and federal regulations, and implementation of BMPs under the NPDES permit, which requires the preparation of a SWPPP. In addition, goals and policies presented in the GP would provide more protections by upgrading and retrofitting structures that don’t meet building code standards. Therefore, while ground disturbance would be greater under the Project, potential soil erosion impacts, or the potential loss of topsoil, would be less than significant through compliance with applicable regulations.

Future development in Fowler under the “No Project” Alternative and the Project would be required to comply with building design and engineering standards within the CBC, which can require site-specific geotechnical studies to identify geologic and soil conditions, or soil sampling and treatment procedures for expansive soils, as well as other soil-related issues. Regulations within the CBC would ensure that impacts involving unstable or expansive soils are less than significant.

Potential soil impacts associated with use of septic tanks or alternative wastewater disposal systems would not occur because these structures would not be installed. Therefore, there would be no impact under the Project or the “No Project” Alternative.

The “No Project” Alternative would involve significantly less development and fewer dwelling units than the Project (See [Table 6-2](#)), which could result in less impacts involving damage to homes, businesses, utilities, or public service facilities in the event of strong seismic ground shaking. However, implementation of the Project would incorporate not only the existing regulations within the CBC, but also the goals and policies enforcing seismic and geologic safety standards in future construction and development, ensuring that impacts are less than significant.

Construction activities such as grading, excavation, and ground-disturbing activities may result in the accidental destruction or disturbance of paleontological sites. However, development on public lands, including lands owned by or under the jurisdiction of Fowler and/or public agencies would be subject to the provisions of PRC Sections 5097-5097.6, which prohibit the unauthorized disturbance or removal of paleontological resources. Any highway projects associated with implementation of the “No Project” Alternative would be subject to paleontological studies conducted by Caltrans and local project sponsors, and Section 305 of the Federal Highway Act of 1956 gives Caltrans authority to use federal funds to salvage paleontological sites affected by highway projects. The “No Project” Alternative does not contain any policies that specifically address the protection of paleontological resources, while the Project includes policies intended to expand protections for paleontological resources. Therefore, while development under the “No Project” Alternative may be less than significant due to State regulations, impacts under the Project are likely to be less than those that could occur under the “No Project” Alternative.

Greenhouse Gas Emissions

This alternative would result in the lowest amount of land use development. Based on the population estimates and the estimated community wide GHG emissions, estimated GHG emissions for this alternative would total approximately 11.9 MTCO_{2e}/Capita. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be no impact associated with this alternative. However, it is important to note that this alternative, when compared to the other alternatives evaluated, would result in the highest GHG emissions when evaluated on a per capita basis.

In comparison to Full Fowler 2040 GP Buildout and the alternatives evaluated, this alternative would result in the lowest amount of land use development. Based on the population estimates and the estimated

community wide GHG emissions noted in [Table 6-6](#), estimated GHG emissions for this alternative would total approximately 11.9 MTCO₂e/Capita. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be no impact associated with this alternative. However, it is important to note that this alternative, when compared to the other alternatives evaluated, would result in the highest GHG emissions when evaluated on a per capita basis. While GHG emissions would increase significantly, energy use would be more efficient per person with the Full Project Buildout.

Table 6-6: Comparison of Annual Operational GHG Emissions at Buildout

Source	Emissions (MTCO ₂ e)	
	No Project Alternative ⁴	Full Fowler 2040 GP Buildout
Area ^{1, 2}	1,445	7,045
Energy Use ²	19,522	50,203
Mobile ³	50,847	173,818
Waste ¹	5,933	23,143
Water ¹	3,415	9,478
Total ⁵ :	81,162	263,687
Population:	6,808	48,404
MTCO ₂ e/Capita:	11.9	5.4
Significance Threshold (MTCO₂e/Capita):	N/A	3.6
Full Fowler 2040 GP Buildout Alternative		
<ol style="list-style-type: none"> 1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update. 2. Hearth emissions were removed in order to comply with SJVAPCD rules. 3. Trip-generation rates derived from the traffic analysis prepared for this project and emissions were calculated using EMFAC data. 4. No Project Alternative based on existing General Plan land uses and year 2019 VMT provided. 5. Totals may not sum due to rounding. Refer to Appendix C for emissions modeling assumptions and results. 		

Hazards and Hazardous Materials

For both the Project and “No Project” Alternative, compliance with the regulations, standards, and guidelines established by the USEPA, the State of California, Fresno County, and Fowler would ensure that any impacts related to the transportation, use, accidental spills, improper handling and storage, and disposal of hazardous materials and wastes are less than significant. While increased growth and development would significantly expand the sources of hazardous materials and risk of adverse impacts under the Project, additional goals and policies proposed under the GP would direct Fowler to identify hazardous waste transportation routes, work cooperatively with other public agencies in emergency response, and update the Emergency Response Plan. These added protections would not apply under the “No Project” Alternative; therefore, impacts under the Project are anticipated to be lower under the Project.

The policies contained in the Project would provide a more comprehensive suite of emergency protections, including ensuring that the siting of critical emergency response facilities and communications facilities have minimal exposure to flooding, seismic and geologic effects, fire, and explosions. Thus, implementation of the Project may provide greater protection for critical emergency response facilities in the event of an emergency as compared to the “No Project” Alternative.

Neither the Project, nor the “No Project” Alternative would expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Impacts from both scenarios would be the same. Further detail can be found in [Section 4.21](#).

Hydrology and Water Quality

Construction activities under the Project could result in the alteration of existing drainage patterns and soil erosion due to earth-moving and ground disturbance. The greater amount of acreage under development would increase the impacts compared to the “No Project” Alternative. However, conditions outlined within the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Order No. 2012-0006-DWQ) would ensure impacts relating to water quality are less than significant for any particular project.

Changes in ground surface permeability from new paving, and changes in topography due to grading and excavation would be much more significant under the Project, but impacts from these changes would also be regulated by the NPDES General Permit. While the Project may have greater overall disturbance, policies and goals would be implemented to regulate water quality and stormwater management, and promote water use efficiency and conservation, keeping impacts at a less than significant level. The added protections would be absent in the “No Project” Alternative, potentially resulting in greater long-term impacts under this alternative.

Flooding hazards would be increased under the Project compared to the “No Project” Alternative due to increased development. Implementation of the new proposed policies and goals of the Project, in conjunction with State and federal regulations, would ensure that impacts would be less than significant. Existing regulations would be the only protection applied to the “No Project” Alternative, and growth under this alternative may have greater long-term impacts to flood risk.

Fowler is located in Central California and is therefore not located in a tsunami or seiche zone. The Project and “No Project” Alternative would have no impact.

Land Use and Planning

Neither the “No Project” Alternative nor Project would divide an established community. However, the Project contains a more comprehensive suite of policies that would facilitate the development and use of the bicycle, sidewalk, trail, and road networks within the planning area. Implementation of these policies would make it easier for residents to travel throughout the community, as compared to the No Project Alternative.

Under the Proposed Plan, the majority of the proposed land use changes would be from agriculture to non-agricultural uses; no existing housing is projected to be removed or replaced due to implementation of the Proposed Plan.

Any future development within Fowler would be required to be consistent within the Fowler’s Municipal Code, which would regulate intensity of allowed use and compatibility with surrounding uses. Although implementation of the “No Project” Alternative would involve less overall development and associated growth than would occur under the Project, polices and goals proposed by the GP would provide more protections and efficient land use under the Project.

Mineral Resources

Fowler does not contain any known mineral resources or mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan. The Project and the “No Project” Alternative would have no impact.

Noise

The “No Project” Alternative would result in the lowest amount of land use development. This alternative would also result in the lowest amount of VMT. Based on this information, the “No Project” Alternative would be expected to result in lower construction and operational noise and vibration levels, in comparison

to the other alternatives evaluated. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be no impact associated with this alternative.

Of the alternatives evaluated, this alternative would result in the lowest amount of land use development. This alternative would also result in the lowest amount of VMT. Based on this information, the No Project Alternative would be expected to result in lower construction and operational noise and vibration levels, in comparison to the Full Fowler 2040 GP Buildout and alternatives evaluated. Implementation of this alternative would not result in development beyond what was evaluated in the currently adopted general plan. Therefore, there would be lower adverse impacts relating to noise that are associated with this alternative, compared to Full Project Buildout.

Population and Housing

Implementation of the “No Project” Alternative would involve less development and growth compared to the Project. Buildout of the “No Project” Alternative would accommodate 20,604 people and 6,282 dwelling units, compared to the Project, which would accommodate a population of 48,131 and 14,764 dwelling units. The Project would result in population growth within the planning area through the construction of new homes, businesses, and the extension of utilities and infrastructure, and would implement a land use plan that would accommodate for a larger population, compared to the “No Project” Alternative. Historical annual growth rate of Fowler between two and three percent makes it unlikely that the actual buildout of the Fowler 2040 GP would exceed the planned buildout; therefore, replacement housing elsewhere would not be necessary and impacts to housing would be less than significant. Growth and development under the “No Project” Alternative would also be unlikely to reach potential buildout and would be able to accommodate the two to three percent growth without the displacement of housing and people.

Public Services

The growth in population and new development under the Project would increase the existing demand for fire protection services, police protection services, school facilities, and library facilities. To maintain or achieve acceptable service standards, new or physically altered fire, police, school, and library facilities would be required. When compared to the Project, the “No Project” Alternative would accommodate a lower population (21,784 people compared to 48,131 under the Project) which would create a greater demand for facilities to be constructed or expanded.

Goals and policies included in the Fowler 2040 GP would ensure that demands from population growth are met through provision of adequate staffing, infrastructure, utilities, and funding opportunities. These provisions are not included in the “No Project” Alternative, and population growth over the long term may not be supported by this option. Compared to the “No Project” Alternative, the Project would put more demand on public services, but would also provide ways to accommodate that demand. Therefore, impacts could be greater under the “No Project” Alternative.

Recreation

As discussed in [Section 4.17](#), the Project would accommodate the addition of approximately 41,526 residents to the planning area for a full buildout population of 48,131 persons by 2040, while the “No Project” Alternative would support 21,784 people. However, based on historic growth trends between two and three percent, the population growth anticipated under the Project would likely only be 8,364 – 11,833 people. Assuming growth trends will remain stable, an increase in the number of persons that utilize recreational facilities is anticipated under both the “No Project” Alternative and the Project, which would result in accelerated deterioration of the facilities and create a need for new or expanded recreational facilities.

In compliance with the Quimby Act, the Project includes goals and policies that would set a target parkland-to-population ratio and facilitate the addition and funding of new parks, facilities, open space, and trail facilities to accommodate a growing population and ensure access to all members of the community. Environmental impacts associated with new recreational facilities under the Project would be guided by the construction and development goals within the Fowler 2040 GP. Under the “No Project” Alternative, no policies exist which would facilitate compliance with the Quimby Act and expand recreational facilities. Therefore, impacts to recreation under the Project would be less than significant, while impacts under the “No Project” Alternative would increase and continue to be compounded.

Transportation

Buildout under the “No Project” Alternative would involve significantly less development and growth than the Project and contain 1,018 acres of open space and public facilities compared to 125 acres under the Project. Despite less growth under the “No Project” Alternative, the Project proposes significant improvement in transportation and circulation, and would result in lower VMT per capita and per employee than that measured in the reference year 2019. These VMT reductions included in the Project indicate that the future buildout scenario and development would allow Fowler residents and employees to access jobs and services within the city and within shorter distances compared to existing conditions. Without the additional policies and goals provided for in the 2040 General Plan, the “No Project” Alternative would result in an increase in VMT, similar or greater than the 2040 General Plan.

The existing GP has a Jobs-Housing ratio of 2.73,¹⁶⁷ which means that the existing GP has 2.73 jobs for every dwelling unit. While this imbalance implies that Fowler is jobs-rich, it also means that employees may live elsewhere and must commute farther. As the proposed Fowler General Plan would possess a Jobs-Housing ratio of 1.99, implementation of the “No Project” alternative would likely result in higher VMT per employee, and greater adverse impacts to transportation than the Project.

Tribal Cultural Resources

As discussed in [Section 4.19](#), tribal cultural resources impacts are highly dependent on both individual project site conditions and the characteristics of the proposed activity. Under the “No Project” Alternative, the existing land use designations in the 2025 GP would continue to define the type of development that occurs throughout Fowler, and agricultural land and open space would remain. Expansion of development and associated growth involved in the Project would have more potential to unearth tribal cultural resources as agricultural lands are converted into residential and commercial land uses. Therefore, tribal cultural resources impacts under the “No Project” Alternative would be less than that potentially found with the Project.

Similar to the Project, development under the “No Project” Alternative would be subject to laws and regulations requiring Native American consultation, protection of human remains, and pre-historic artifacts. Impacts would be less than significant with adherence to applicable laws and regulations.

Under both the “No Project” Alternative and the Project, a project-level CEQA document would need to identify potential impacts on known or potential historic sites and structures. New development would also be required to comply with PRC Section 5097.98, which addresses the disposition of Native American burials, protects remains, and appoints the NAHC to resolve disputes.

Utilities and Service Systems

Growth and development under the Project would be able to support a population of 48,131, compared to 21,784 under the “No Project” Alternative. This growth would generate additional demand for water and

¹⁶⁷ (Provost & Pritchard Consulting Group 2021)

wastewater services and, therefore, a potential increased demand for water provision and wastewater collection, conveyance, and treatment services over currently established levels. Additionally, this growth would increase demand for expansion of other utilities including electric power, natural gas, and telecommunication facilities. While the Project and associated population growth would result in a greater level of impact than the “No Project” Alternative due to higher demand for utilities, Fowler would implement the newest efficiency standards to limit adverse environmental impacts relating to increased infrastructure development and construction to a less than significant level. The “No Project” Alternative would involve existing growth under the 2025 GP, and impacts would be anticipated to result in less impact than the Project due to the smaller population, which would put less of a demand on utilities.

Implementation of the Project would result in an increase in the amount of influent required to be treated by the SKFCSD wastewater treatment facility due to the increase in population and would likely require expansion of wastewater facilities. The “No Project” Alternative would involve some population growth, but not to the extent of the Project. As higher levels of population growth occur under the Project, the likelihood of demand for higher capacity of wastewater treatment facilities increases, resulting in greater impacts to wastewater and treatment facilities compared to the “No Project” Alternative. Although the GP includes policies to reduce the impacts to wastewater to a less than significant level, the “No Project” Alternative would result in less of a demand and less impact than the Project.

Greater population growth under the Project would create increased amounts of solid waste compared to low growth under the “No Project” Alternative. Goals and policies within the GP address the potential effects to solid waste management, ensuring the impacts are less than significant.

The “No Project” Alternative would generate less demands upon utility and service systems than the proposed Project, given that this alternative involves less overall development and would support a smaller population.

Future development under the Project and the “No Project” Alternative would be required to comply with federal, State, and local statutes and regulations related to solid waste. Therefore, impacts under both the Project and the “No Project” Alternative would be the same.

Wildfire

As described in [Section 4.21](#), Fowler is not in or near a very high fire hazard severity zone or a SRA. Fowler does not have an adopted emergency response plan or emergency evacuation plan, but instead, falls under the Fresno County Master Emergency Services Plan, which mitigates for fire risk and guides emergency preparedness planning. Neither the Project, nor the “No Project” Alternative, would conflict with the County plan, resulting in a less than significant impact.

The urban and built-up setting of Fowler presents a low risk of wildfire due to environmental factors, including existing vegetation maintenance within and around Fowler. The Project proposes an expansion of residential area to 2,781 acres, while residential development under the “No Project” Alternative would support 1,266 acres.

Despite the expansion of development under the Project, which would require new infrastructure to protect against wildfire, future development under the Project or the “No Project” Alternative would be required to comply with the regulations and requirements of the CBC to maintain adequate safety measures regarding wildfire safety and preparedness. Therefore, any additional infrastructure under the Project that could exacerbate fire risk would be reduced to a less than significant level, and potential impacts involving wildfire under the Project and the “No Project” Alternative would be similar.

Fowler is not located on land that includes substantial slopes at risk of landslide that would put the public at increased risk of wildfire due to post-fire slope instability. The Project proposes goals and policies that

would increase awareness of wildfire and emergency preparedness, but due to the existing low-risk setting, similar wildfire related impacts would be anticipated under both scenarios, and would be less than significant.

6.3.2 Alternative 2: Existing Sphere of Influence

Description

The Existing SOI alternative considers the SOI from Fowler’s existing 2025 GP while making changes to the land uses to match those proposed under the Project. Namely, it removes the agricultural land designation from within the SOI and replaces it with various residential, commercial, industrial, and public facility designations which are more appropriate. Some other land use changes within the existing SOI are also retained in this alternative, including the conversion of some residential land to commercial uses and the redesignation of some land to public facilities land uses to better represent the existing use. This alternative includes the policy changes included in the Project.

The Existing SOI alternative includes approximately 3,833 acres, 1,137 fewer than the Project. As such, all land uses except for Heavy Industrial also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 2,012 acres of residential land uses support a build-out of 10,833 dwelling units (which also includes 370 units from mixed-use commercial areas), 4,697 fewer than the Project. The Existing SOI alternative accounts for approximately 21,281,377 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 23,325 employees. This is approximately 4,442,201 fewer square feet and approximately 7,553 fewer employees than the Project.

Table 6-7: Comparison of Project and Existing SOI Alternative

Land Use Category	Total Acreages		Population		Dwelling Units	
	Existing SOI	Proposed GP	Existing SOI	Proposed GP	Existing SOI	Proposed GP
Low Residential	524	790	4,948	7,461	1,508	2,275
Medium Low Residential	822	936	11,856	13,506	3,615	4,118
Medium Residential	515	750	10,940	15,935	3,335	4,858
Medium High Residential	98	223	3,469	7,886	1,057	2,404
High Residential	54	83	3,106	4,753	947	1,449
Residential Subtotal	2,012	2,781	34,318	49,540	10,463	15,104
Neighborhood Commercial	19	28	0	0	0	0
Community Commercial	106	122	1,214	1,397	370	426
General Commercial	131	210	0	0	0	0
Commercial Subtotal	256	360	1,214	1,397	370	426
Light Industrial	323	598	0	0	0	0

Land Use Category	Total Acreages		Population		Dwelling Units	
	Existing SOI	Proposed GP	Existing SOI	Proposed GP	Existing SOI	Proposed GP
Heavy Industrial	1,105	1,105	0	0	0	0
Industrial Subtotal	1,428	1,703	0	0	0	0
Agriculture	0	0	0	0	0	0
Parks/Open Space	6	2	0	0	0	0
Public Facilities	131	123	0	0	0	0
Open Space Subtotal	137	125	0	0	0	0
Total	3,833	4,970	35,533	50,937	10,833	15,530

Impact Analysis

Aesthetics

The Project would result in less than significant impacts to aesthetic resources with implementation of the proposed goals and policies (See [Section 4.1](#)). Compared to the Project, the “Existing SOI” Alternative would similarly involve increased residential and commercial development (See [Table 6-7](#)), specifically on the east side of SR 99, by converting a significant amount of open space and agricultural land. Agricultural land conversion and urban development within the SOI under this alternative would hinder many residents’ views of the Sierra Nevada Mountains and surrounding orchards and farms. Increased development under both the “Existing SOI” Alternative and the Project would potentially increase light, glare, and nighttime view impacts. While the number of dwelling units and acreage of urban development may differ under the “Existing SOI” Alternative and the Project, the proposed policies and goals related to aesthetic resources would ensure that any impacts are reduced to a less than significant impact. Therefore, the “Existing SOI” Alternative would result in similar impacts to aesthetic resources as the Project, and impacts would be less than significant.

Agriculture and Forestry Resources

As described in [Section 4.3](#), buildout of the Project would result in a potentially significant impact to Agriculture resources due to land conversion from agriculture to residential and commercial land uses. The “Existing SOI” Alternative would similarly convert Prime Farmland, Farmland of Statewide Importance, and Unique Farmland to non-agricultural uses, and potentially convert a significant amount of Williamson Act land. There are currently no feasible mitigation measures which would minimize or avoid impacts to farmland or Williamson Act contracts, and at the same time, adhere to the circulation and development goals proposed by the Project.

Neither the “Existing SOI” Alternative, nor the Project would conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. These zones are not found within the City or immediate vicinity.

While the “Existing SOI” Alternative may not involve the level of proposed total residential development as the Project (2,012 acres versus 2,781 acres, respectively), or support as many dwelling units, both scenarios would result in potentially significant impacts to Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Williamson Act contracts. Under both scenarios, there would be zero acres of land dedicated to agricultural use. Implementation of GP policies, which would apply under the “Existing SOI” Alternative, would minimize the impact to an extent, but the conversion of agricultural land would have a

significant and unavoidable Impact to agricultural resources. Therefore, the “Existing SOI” Alternative and the Project would be similar in impact.

Air Quality

This Alternative would result in an increase in residential and non-residential development when compared to the No Project Alternative. In comparison to the Full Fowler 2040 GP Buildout Alternative, this alternative would result in a decrease in residential and non-residential development. In comparison to the Full Fowler 2040 GP Buildout Alternative, this decreased development would be expected to result in a proportionate decrease in construction and operational air quality emissions, as shown in **Table 6-8**. Proposed goals, policies, and mitigation measures identified in the air quality analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this Alternative, which would reduce emissions. However, similar to the Full Fowler 2040 GP Buildout Alternative, details of future development projects are unknown at this time. Therefore, while this alternative would result in less development than the proposed Full Fowler 2040 GP Buildout Alternative, it may not be possible to reduce potential impact below acceptable thresholds. As a result, to be conservative, this alternative would be considered significant and unavoidable.

Table 6-8: Comparison of Operational Emissions Within Planning Area

Source	Emissions (tons/year) ¹				
	ROG	NO _x	CA	PM ₁₀	PM _{2.5}
Existing SOI Alternative					
Area ²	186.0	5.0	82.0	0.8	0.8
Energy ²	3.6	32.7	24.3	2.5	2.5
Mobile ³	24.0	68.4	200.8	3.7	1.9
Total:	85.2	80.2	232.7	4.7	2.9
Full Fowler 2040 GP Buildout Alternative					
Area ²	250.6	7.2	118.9	1.1	1.1
Energy ²	4.7	41.2	27.9	3.2	3.2
Mobile ³	43.1	114.7	359.5	14.6	5.5
Total:	298.4	163.1	506.3	18.9	9.8
Net Change Compared to No Project Alternative:	213.2	82.9	273.6	14.2	6.9
SJVAPCD Significance Thresholds⁴:	10	10	100	15	15
<ol style="list-style-type: none"> 1. Totals may not sum due to rounding. 2. Emissions calculated using CalEEMod 2020.4.0. Area source emissions are predominantly associated with the use of consumer products (e.g., cleaning supplies). Other area sources include landscape maintenance equipment, natural gas-fired appliances, and architectural coatings. 3. Emissions calculated based on data derived from the VMT analysis prepared for this project and emission factors for Fresno County derived from EMFAC2021. Annual emissions of SOX associated with typical development are anticipated to be negligible and were not included. 4. SJVAPCD Significance Thresholds apply to individual projects and are presented for informational purposes only. 					

Biological Resources

As described in **Section 4.5**, the planning area and surrounding lands are highly disturbed residential and agricultural areas and provide few resources and an inhospitable environment for special status species. Any species that may occur in these areas are typically adapted to anthropogenic disturbance and/or are ornamental species. Both the Fowler 2040 GP and the “Existing SOI” Alternative would involve greater urban development and expansion, as well as conversion of agricultural land for non-agricultural uses. Impacts to special status species and habitat are not explicitly regulated under the goals and policies proposed in the Project. However, development under either scenario would be subject to regulation by CDFW or USFWS if State or federally protected biological resources had the potential to be impacted by Project-related activities. Therefore, the Project and the “Existing SOI” Alternative would be expected to result in less than significant impacts.

Both the Project and the “Existing SOI” Alternative proposes the development of vacant or underdeveloped land and encourages growth of residential, commercial, and industrial areas, which may involve impacts to urban biological resources including street trees. Both scenarios are subject to the same goals and policies aimed to preserve street trees and the urban forest, so impacts are expected to be similar and would be less than significant.

Riparian area and natural communities of special concern are absent from the planning area. Therefore, there would be no impact to these biological resources as a result of either the Project or the “Existing SOI” Alternative.

Designated federally protected waters, as defined by Section 404 of the Clean Water Act, are currently not present in the planning area. However, as described in [Section 4.5](#), NWI indicates that potential wetlands are located within the planning area that may be categorized as waters of the United States or waters of the State. Activities involving impacts to State and/or federally protected waters are regulated by CDFW, USACE and RWQCB. Therefore, activities under the Project and “Existing SOI” Alternative are required to comply with the mitigation measures provided by the applicable agencies, which would avoid impacts or ensure that they are less than significant.

As described in [Section 4.5](#), the Project would have less than significant impacts on wildlife movement corridors, which are nearly absent from the planning area. Land use conversion and development under the “Existing SOI” Alternative would be similar to that of the Project. Therefore, development proposed under both either scenario would have a less than significant effect on wildlife movement.

There are no Habitat Conservation Plans or Natural Community Conservation Plans Applicable to the planning area. Therefore, both the Project and “Existing SOI” Alternative would have no impact.

Cultural Resources

Implementation of the “Existing SOI” Alternative would involve a similar amount of expanded development and associated growth as full Project buildout. The “Existing SOI” Alternative and the Project would expand into the surrounding agricultural areas, causing significantly more ground disturbance and conversion of agricultural land into non-agricultural uses compared to the “No Project” Alternative. The enhanced goals and policies related to cultural and historic resources embedded within the GP would apply to both the Project and the “Existing SOI” Alternative and impacts would be less than significant.

Similarly, proposed goals and policies which would guide development under both the Project and the “Existing SOI” Alternative would encourage renovation of the downtown area, and thus, may increase the desirability of redeveloping historic structures. Compliance with the established regulatory framework would ensure that potential impacts from both scenarios are less than significant. Both scenarios would also be required to adhere to existing State and federal regulations regarding the treatment of human remains. Therefore, impacts would be less than significant under the Project and the “Existing SOI” Alternative.

Energy

The “Existing SOI” would result in lower overall fuel and energy use. However, when evaluated on a per capita basis, this alternative would result in lower fuel and energy use than the “PDA Alternative”, yet still higher than that associated with the Project. The proposed Fowler 2040 GP includes proposed goals and policies that would help to reduce energy impacts. The following of federal, State, and local standards would diminish any potential impacts. Therefore, it is expected that this alternative would similarly result in less than significant energy impacts.

This alternative would result in higher fuel and energy use than that associated with the Full Fowler 2040 GP Buildout Alternative. The proposed Fowler 2040 GP includes goals and policies that would help to reduce energy impacts. In addition, proposed mitigation measures identified in the energy analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would further reduce energy consumption such that future development would not be anticipated to result in a wasteful use of energy. Therefore, it is expected that this alternative would similarly result in less than significant energy impacts.

Table 6-9: Comparison of Operational Fuel Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
Existing SOI Alternative		
On Road Vehicles (Diesel)	4,523,654	621,464
On Road Vehicles (Gasoline)	8,714,413	1,048,222
Total:		1,669,686
Estimated Population:		35,533
MMBTU/Capita:		47.0
Full Fowler 2040 GP Buildout Alternative		
On Road Vehicles (Diesel)	5,885,630	808,574
On Road Vehicles (Gasoline)	11,388,136	1,363,819
Total:		2,172,393
Estimated Population:		48,404
MMBTU/Capita:		44.9
<i>MMBTU = Million metric British thermal units</i>		
<i>1. Fuel use was calculated based, in part, on project trip generation rates derived from the traffic analysis prepared for this project (Kittelson & Associates 2022).</i>		
<i>2. Refer to Appendix C for modeling assumptions and results.</i>		

Table 6-10: Comparison of Operational Electricity and Natural Gas Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
Existing SOI Alternative		
Electricity Consumption	259,028,650 kWh/Year	883,806
Water Use, Treatment, and Conveyance	20,992,300 kWh/Year	71,626
Natural Gas Use	660,499,740 kBTU/Year	660,500
Total:		1,615,931
Estimated Population:		35,533
MMBTU/Capita:		45.5
Full Fowler 2040 GP Buildout Alternative		
Electricity Consumption	336,659,330 kWh/Year	1,148,682
Water Use, Treatment, and Conveyance	26,572,392 kWh/Year	90,665
Natural Gas Use	862,651,820 kBTU/Year	862,652
Total:		2,101,998
Estimated Population:		48,404
MMBTU/Capita:		43.4
<i>MMBTU = Million metric British thermal units</i>		
<i>1. Fuel use was calculated based, in part, on default construction schedules, equipment use, and vehicle trips identified for the operation of similar land uses contained in the CalEEMod output files prepared for the air quality analysis conducted for this project.</i>		
<i>2. Refer to Appendix C for modeling assumptions and results.</i>		

Geology and Soils

Due to the lack of any Alquist-Priolo Fault Zones, active faults, or potentially active faults within the planning area, neither the “Existing SOI” Alternative nor Project would produce any impacts due to fault rupture.

Although the potential for liquefaction and landslides in Fowler are low due to the flat, level topography, the “Existing SOI” Alternative and the Project would incorporate existing regulatory standards within the CBC, as well as seismic and geologic safety goals and policies in future construction and development, ensuring that any potential impact relating to seismic related ground failure, including liquefaction and landslides, are less than significant.

A comparable amount of development involving soil disturbance is anticipated under the “Existing SOI” Alternative and the Project. Both scenarios would be required to comply with applicable local, state, and federal regulations, and implementation of BMPs under the NPDES permit, which requires the preparation of a SWPPP. In addition, goals and policies presented in the GP would provide more protections under both scenarios by upgrading and retrofitting structures that don’t meet building code standards. Therefore, impacts involving soil erosion or the potential loss of topsoil under the “Existing SOI” Alternative and the Project would be less than significant level through compliance with applicable regulations.

Future development in Fowler under the “Existing SOI” Alternative and the Project would be required to comply with building design and engineering standards within the CBC, which can require site-specific geotechnical studies to identify geologic and soil conditions, or soil sampling and treatment procedures for expansive soils, as well as other soil-related issues. Therefore, impacts involving expansive or unstable soil are anticipated to be similar under either scenario.

Potential soil impacts associated with use of septic tanks or alternative wastewater disposal systems would not occur because these structures would not be installed. Therefore, there would be no impact under the Project or the “Existing SOI” Alternative.

The “Existing SOI” Alternative would involve expansion of development and new dwelling units, like the Project (See [Table 6-7](#)), which would be anticipated to result in similar impacts as the Project. Existing regulations within the CBC and also the goals and policies enforcing seismic and geologic safety standards in future construction and development would ensure that impacts under both scenarios are less than significant.

Construction activities such as grading, excavation, and ground-disturbing activities may result in the accidental destruction or disturbance of paleontological sites. However, the provisions of California Resources Code Sections 5097-5097.6, which prohibit the unauthorized disturbance or removal of paleontological resources would reduce adverse impacts to a less than significant level. Any highway projects associated with implementation of the “Existing SOI” Alternative and the Project would be subject to paleontological studies conducted by Caltrans and local Project sponsors, and Section 305 of the Federal Highway Act of 1956 gives Caltrans authority to use federal funds to salvage paleontological sites affected by highway projects. While development under the “Existing SOI” Alternative may be less than that of the Project, the goals and policies within the Fowler 2040 GP would ensure that adverse impacts are less than significant.

Greenhouse Gas Emissions

This alternative would result in an increase in residential and non-residential development when compared to the No Project Alternative. In comparison to the Full Fowler 2040 GP Buildout Alternative, this alternative would result in a decrease in residential and non-residential development. In comparison to the Full Fowler 2040 GP Buildout Alternative, this decreased development would be expected to result in a proportionate decrease in construction and operational GHG emissions, as shown in [Table 6-11](#). However, when evaluated on a per capita basis, this alternative would result in slightly higher GHG emissions when compared to the Full Fowler 2040 GP Buildout Alternative. Based on the population estimates and the estimated community wide GHG emissions, estimated emissions would total approximately 5.7

MTCO₂e/capita under this Alternative. Estimated GHG emissions would exceed the significance threshold of 3.6 MTCO₂e/capita. As a result, implementation of this alternative could result in a significant impact on the environment and conflict with the State’s GHG-reduction planning efforts. Proposed goals, policies, and mitigation measures identified in the air quality and GHG analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would further reduce emissions. However, details of future development projects are unknown at this time. Therefore, it may not be possible to reduce potential impact below acceptable thresholds in all instances. As a result, to be conservative, GHG impacts would be considered significant and unavoidable.

Table 6-11: Comparison of Annual Operational GHG Emissions at Buildout

Source	Emissions (MTCO ₂ e)	
	Existing SOI Alternative	Full Fowler 2040 GP Buildout
Area ^{1, 2}	4,855	7,045
Energy Use ²	38,455	50,203
Mobile ³	133,595	173,818
Waste ¹	18,592	23,143
Water ¹	7,616	9,478
Total⁴:	203,113	263,687
Population:	35,533	48,404
MTCO ₂ e/Capita:	5.7	5.4
Significance Threshold (MTCO₂e/Capita):	3.6	3.6
<p><i>1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update.</i></p> <p><i>2. Hearth emissions were removed in order to comply with SJVAPCD rules.</i></p> <p><i>3. Trip-generation rates derived from the traffic analysis prepared for this project and emissions were calculated using EMFAC data.</i></p> <p><i>4. Totals may not sum due to rounding. Refer to Appendix C for emissions modeling assumptions and results.</i></p>		

Hazards and Hazardous Materials

For both the Project and “Existing SOI” Alternative, compliance with the regulations, standards, and guidelines established by the USEPA, the State of California, Fresno County, and Fowler would ensure that any impacts related to the transportation, use, accidental spills, improper handling and storage, and disposal of hazardous materials and wastes are less than significant. While increased growth and development would significantly expand the sources of hazardous materials and risk of adverse impacts under both Project and the “Existing SOI” Alternative, additional goals and policies proposed under the Fowler 2040 GP would direct Fowler to identify hazardous waste transportation routes, work cooperatively with other public agencies in emergency response, and update the Emergency Response Plan. These protections would apply to the Project and the “Existing SOI” Alternative, and therefore, impacts under both scenarios would be similar.

The policies contained in the Project would provide a more comprehensive suite of emergency protections, including ensuring that the siting of critical emergency response facilities and communications facilities have minimal exposure to flooding, seismic and geologic effects, fire, and explosions. Thus, implementation of the Project or the “Existing SOI” Alternative would have similar impacts for critical emergency response facilities in the event of an emergency.

Neither the Project, nor the “Existing SOI” Alternative would expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Impacts from both scenarios would be the same. Further detail can be found in [Section 4.21](#).

Hydrology and Water Quality

Construction activities under the Project and the “Existing SOI” Alternative could result in the alteration of existing drainage patterns and soil erosion due to earth-moving and ground disturbance. The greater amount of acreage under development would increase the impacts under both scenarios, although the “Existing SOI” Alternative would involve a lower level of increase than the full Project and the expansion areas would cover slightly less are. Conditions outlined within the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Order No. 2012-0006-DWQ) would ensure impacts relating to water quality are less than significant for any particular project. Impacts under the Project and the “Existing SOI” Alternative would be the same.

Changes in ground surface permeability from new paving, and changes in topography due to grading and excavation would occur under both the “Existing SOI” Alternative and the Project, but impacts from these changes would also be regulated by the NPDES General Permit. While the Project may have greater overall disturbance, policies and goals would be implemented to regulate water quality and stormwater management, and promote water use efficiency and conservation, and would ensure that impacts under the Project and “Existing SOI” Alternative are less than significant.

Flooding hazards would be increased under the Project and “Existing SOI” Alternative due to increased development. Implementation of the new proposed policies and goals, in conjunction with State and federal regulations, would ensure that impacts would be less than significant both options.

Fowler is located in Central California and is therefore not located in a tsunami or seiche zone. The Project and “No Project” Alternative would have no impact.

Land Use and Planning

Neither the “Existing SOI” Alternative nor Project would divide an established community. Implementation of policies that would facilitate the development and use of the bicycle, sidewalk, trail, and road networks within the planning area would make it easier for residents to travel throughout the community under both the Project and the “Existing SOI” Alternative. There would be similar impacts for both options.

Any future development within Fowler would be required to be consistent within Fowler’s Municipal Code, which would regulate intensity of allowed use and compatibility with surrounding uses. Although implementation of the “Existing SOI” Alternative would involve slightly less overall development and associated growth than would occur under the Project, polices and goals proposed by the GP would provide more protections and efficient land use which would ensure that impacts under both options are less than significant.

Mineral Resources

Fowler does not contain any known mineral resources or mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan. The Project and the “Existing SOI” Alternative would have no impact.

Noise

The “Existing SOI” Alternative would result in an increase in residential and non-residential development, as well as increases in VMT in comparison to the “No Project” Alternative. However, VMT associated with this alternative would be lower than that associated with the “PDA Only” Alternative and the Project. In comparison to the “PDA Only” Alternative and the Project this reduction in VMT would be anticipated to result in commensurable reductions in traffic noise levels on area roadways. As noted in the noise analysis prepared for the proposed Fowler 2040 GP, the proposed Fowler 2040 GP includes goals and policies that would reduce noise impacts. These same goals and policies, identified in the noise analysis prepared for the Project, would also be recommended for this alternative, which would further reduce noise exposure

to both non-transportation and transportation noise sources. Therefore, it is expected that this alternative would similarly result in less than significant noise impacts.

VMT associated with this alternative would be lower than that associated with the Full Fowler 2040 GP Buildout. In comparison to the Full Fowler 2040 GP Buildout Alternative, this reduction in VMT would be anticipated to result in commensurable reductions in traffic noise levels on area roadways. As noted in the noise analysis prepared for the proposed Fowler 2040 GP, the proposed Fowler 2040 GP includes goals and policies that would reduce noise impacts. These same goals and policies, as well as the proposed mitigation measures identified in the noise analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would further reduce noise exposure to both non-transportation and transportation noise sources. Therefore, with mitigation, it is expected that this alternative would similarly result in less than significant noise impacts.

Population and Housing

As described in [Section 4.15](#), the Fowler 2040 GP impacts related to population and housing would be less than significant with the implementation of applicable regulations including General Plan policies and programs.

Implementation of the “Existing SOI” Alternative would involve less development and growth compared to the Project. Buildout of the “Existing SOI” Alternative would accommodate 35,533 people and 10,833 dwelling units, compared to the Project, which would accommodate a population of 48,131 and 14,764 dwelling units. The GP would result in population growth within the planning area through the construction of new homes, businesses, and the extension of utilities and infrastructure, and would implement a land use plan that would accommodate for a larger population under both the Project and the “Existing SOI” Alternative. Historical annual growth rate of Fowler between two and three percent makes it unlikely that the actual buildout of the Fowler 2040 GP would exceed the planned buildout, and therefore, replacement housing elsewhere would not be necessary and impacts to housing would be less than significant. Growth and development under the “Existing SOI” Alternative would also be unlikely to reach full potential buildout, and would be able to accommodate the two to three percent growth without the displacement of housing and people. Therefore, although development and population growth would be larger under the Project, both scenarios would be able to handle full projected growth. Impacts would be similar.

Public Services

The growth in population and new development under the Project and the “Existing SOI” Alternative would increase the existing demand for fire protection services, police protection services, school facilities, and library facilities. To maintain or achieve acceptable service standards, new or physically altered fire, police, school, and library facilities and services would be required. When compared to the Project, the “Existing SOI” Alternative would accommodate a lower population (35,533 people compared to 48,131 under the Project), but would still create a greater demand for facilities to be constructed or expanded.

Goals and policies included in the Fowler 2040 GP would ensure that demands from population growth are met through provision of adequate staffing, infrastructure, utilities, and funding opportunities. Population growth under both the Project and the “Existing SOI” Alternative would create more demand on public services, but would also provide ways to meet and mitigate for that demand. Therefore, impacts under either option would be the same.

Recreation

As discussed in [Section 4.17](#), the Project would result in a less than significant impact to recreational facilities by implementing goals and policies that would set a target parkland-to-population ratio and facilitate the addition and funding of new parks, facilities, open space, and trail facilities to accommodate

a growing population and ensure access to all members of the community. The “Existing SOI” Alternative would implement these same goals and policies, ensuring that any impacts are less than significant.

The Project and the “Existing SOI” Alternative may include environmental impacts associated with new recreational facilities, would be guided by the construction and development goals within the GP. Therefore, impacts to recreation under both the Project and the “Existing SOI” would be less than significant.

Transportation

As described in [Section 4.18](#), implementation of policies and goals within the Fowler 2040 GP would reduce any impacts to transportation to a less than significant level. The “Existing SOI” Alternative would also implement these policies and goals to ensure potential impacts are less than significant. The “Existing SOI” Alternative would entail fewer acres, a lower population, and fewer dwelling units, and would be expected to result in a commensurable reduction in trip generation and overall total vehicle miles traveled. However, the vehicle miles traveled per service population would be expected to marginally increase under this alternative because residents would be expected to travel outside of the City for some commercial and employment activity. Therefore, while still less than significant, the “Existing SOI” Alternative would result in slightly increased impacts related to transportation as compared to the General Plan.

Tribal Cultural Resources

The “Existing SOI” Alternative would involve the same land use patterns and facilitate development within the similar boundaries of the planning area as would be facilitated by the Project. Therefore, development under this alternative would result in similar impacts to tribal cultural resources as the Project because the potential to encounter resources during ground disturbance and construction activities would be similar.

Development under both this alternative and the Project would include the additional policies of the Fowler 2040 GP to protect tribal cultural resources and would comply with current laws and regulations requiring Native American consultation, and protection of human remains and pre-historic artifacts, which would ensure that any potential impacts are less than significant.

Utilities and Service Systems

Impacts under the “Existing SOI” Alternative related to wastewater treatment requirements, new water or wastewater treatment facilities, sufficient stormwater drainage facilities, adequate water supplies, adequate wastewater facilities, sufficient landfill capacity, solid waste regulations, and energy would be similar to those discussed for the Project but to a lesser degree because of the overall decrease in development. The “Existing SOI” Alternative would accommodate a lower population than the Project, but development and growth under this alternative would still create higher demand for water and wastewater services and, therefore, a potential increased demand for water provision and wastewater collection, conveyance, and treatment services over currently established levels.

The newest efficiency standards, goals and policies proposed in the GP, and compliance with federal, State, and local statutes and regulations related to solid waste would ensure that impacts to utilities and service systems are less than significant under both the Project and the “Existing SOI” Alternative.

Wildfire

As described in [Section 4.21](#), Fowler is not in or near a very high fire hazard severity zone or a SRA. Fowler does not have an adopted emergency response plan or emergency evacuation plan, but instead falls under the Fresno County Master Emergency Services Plan, which mitigates for fire risk and guides emergency preparedness planning. Neither the Project nor the “Existing SOI” Alternative would conflict with the County plan, resulting in a less than significant impact.

The urban and built-up setting of Fowler presents a low risk of wildfire due to environmental factors, including existing vegetation maintenance within and around Fowler. The Project and the “Existing SOI” Alternative propose similar expansion of residential area (2,781 acres vs. 2012 acres, respectively). Like the Project, the alternative would ensure potential impacts are less than significant with the implementation of applicable regulations including GP policies and programs, and future development would comply with the regulations and requirements of the CBC to maintain adequate safety measures regarding wildfire safety and preparedness. Therefore, any potential impacts that could exacerbate fire risk would be less than significant under both the Project and the “Existing SOI” Alternative.

Fowler is not located on land that includes substantial slopes at risk of landslide that would put the public at increased risk of wildfire due to post-fire slope instability. Therefore, impacts involving wildfire are expected to be similar under both scenarios and would be reduced to a less than significant level.

6.3.3 Alternative 3: Priority Development Area Only

Description

The Priority Development Area (PDA) Only alternative considers the proposed land uses in the PDA from the Project. This alternative recognizes Fowler’s desire to prioritize infill development in the PDA by excluding other areas from the Plan as well as to encourage industrial development along the Golden State Corridor. This alternative includes the policy changes included in the Project.

The “PDA Only” alternative includes approximately 3,468 acres, 1,502 fewer than the Project. As such, all land uses except for Heavy Industrial and Parks and Open Space also have fewer acres than the Project. Acreages for each land use can be seen in the table below. The 1,380 acres of residential land uses support a build-out of 7,504 dwelling units (which also includes 361 units from mixed-use commercial areas), 8,026 fewer than the Project. The PDA Only alternative accounts for approximately 24,875,892 square feet of commercial, industrial, and public facilities uses at build-out, which is expected to support approximately 29,296 employees. This is approximately 847,686 fewer square feet and approximately 1,582 fewer employees than the Project.

It was determined that this alternative did not meet certain project objectives, namely the objectives to provide for long-term economic and residential growth in Fowler and to provide increased services on the west side of SR 99.

Table 6-12: Comparison of Project and PDA Only Alternative

Land Use Category	Total Acreages		Population		Dwelling Units	
	PDA	Proposed GP	PDA	Proposed GP	PDA	Proposed GP
Low Residential	292	790	2,762	7,461	842	2,275
Medium Low Residential	667	936	9,621	135,06	2,933	4,118
Medium Residential	358	750	7,600	15,935	2,317	4,858
Medium High Residential	10	223	338	7,886	103	2,404
High Residential	54	83	3,106	4,753	947	1,449
Residential Subtotal	1,380	2,781	23,427	49,540	7,142	15,104
Neighborhood Commercial	10	28	0	0	0	0
Community Commercial	104	122	1,185	1,397	361	426

Land Use Category	Total Acreages		Population		Dwelling Units	
	PDA	Proposed GP	PDA	Proposed GP	PDA	Proposed GP
General Commercial	146	210	0	0	0	0
Commercial Subtotal	259	360	1,185	1,397	361	426
Light Industrial	598	598	0	0	0	0
Heavy Industrial	1,105	1,105	0	0	0	0
Industrial Subtotal	1,703	1,703	0	0	0	0
Agriculture	0	0	0	0	0	0
Parks/Open Space	2	2	0	0	0	0
Public Facilities	123	123	0	0	0	0
Open Space Subtotal	125	125	0	0	0	0
Total	3,468	4,970	24,612	50,937	7,504	15,530

Impact Analysis

Aesthetics

The Project would result in less than significant impact to aesthetic resources with implementation of the proposed goals and policies. Compared to the Project, the “PDA Only” Alternative would similarly involve increased residential and commercial development (See [Table 6-12](#)) by converting a significant amount of open space and agricultural land. Agricultural land conversion and urban development within the SOI under this alternative would hinder many residents’ views of the Sierra Nevada Mountains and surrounding orchards and farms. Increased development under both the “PDA Only” Alternative and the Project would potentially increase light, glare, and nighttime view impacts. While the number of dwelling units and acreage of urban development may differ under the “PDA Only” Alternative and the Project, the proposed policies and goals related to aesthetic resources would ensure that any impacts are less than significant. Therefore, the “Existing SOI” Alternative would result in similar impacts to aesthetic resources as the Project, and impacts would be less than significant .

Agriculture and Forestry Resources

As described in [Section 4.3](#), buildout of the Project would result in a potentially significant impact to Agriculture resources due to land conversion from agriculture to residential and commercial land uses. The “PDA Only” Alternative would similarly convert Prime Farmland, Farmland of Statewide Importance, and Unique Farmland to non-agricultural uses, and potentially convert a significant amount of Williamson Act land. There are currently no feasible mitigation measures which would minimize or avoid impacts to farmland or Williamson Act contracts, and at the same time, adhere to the circulation and development goals proposed by the Project.

Neither the “PDA Only” Alternative, nor the Project would conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. These zones are not found within the City or immediate vicinity.

While the “PDA Only” Alternative may not involve the level of proposed total residential development as the Project (1,380 acres versus 2,781 acres, respectively), or support as many dwelling units, both scenarios would result in potentially significant impacts to Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Williamson Act contracts. Under both scenarios, there would be zero acres of land dedicated to agricultural use. Implementation of GP policies, which would also apply to the “PDA Only” Alternative, would minimize impacts to an extent, but the conversion of agricultural land would have a significant and unavoidable impact under both scenarios.

Air Quality

This Alternative would result in an increase in residential and non-residential development when compared to the No Project Alternative. In comparison to the Full Fowler 2040 GP Buildout Alternative, this alternative would result in a decrease in residential and non-residential development. In comparison to the Full Fowler 2040 GP Buildout Alternative, this decreased development would be expected to result in a proportionate decrease in construction and operational air quality emissions, as shown in [Table 6-13](#). Proposed goals, policies, and mitigation measures identified in the air quality analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would reduce emissions. However, similar to the Full Fowler 2040 GP Buildout Alternative, details of future development projects are unknown at this time. Therefore, while this alternative would result in less emissions than the proposed Full Fowler 2040 GP Buildout Alternative, it may not be possible to reduce potential impact below acceptable thresholds. As a result, to be conservative, this alternative would be considered significant and unavoidable.

Table 6-13: Comparison of Operational Emissions within Planning Area

Source	Emissions (tons/year) ¹				
	ROG	NO _x	CA	PM ₁₀	PM _{2.5}
PDA Only Alternative					
Area ²	205.8	3.4	56.9	0.5	0.5
Energy ²	3.6	32.7	24.3	2.5	2.5
Mobile ³	35.5	94.5	296.1	12.0	4.5
Total:	244.9	130.6	377.3	15	7.5
Full Fowler 2040 GP Buildout Alternative					
Area ²	250.6	7.2	118.9	1.1	1.1
Energy ²	4.7	41.2	27.9	3.2	3.2
Mobile ³	43.1	114.7	359.5	14.6	5.5
Total:	298.4	163.1	506.3	18.9	9.8
Net Change Compared to No Project Alternative:	159.7	50.4	144.6	10.3	4.6
SJVAPCD Significance Thresholds⁴:	10	10	100	15	15
<p>1. Totals may not sum due to rounding.</p> <p>2. Emissions calculated using CalEEMod2020.4.0. Area source emissions are predominantly associated with the use of consumer products (e.g., cleaning supplies). Other area sources include landscape maintenance equipment, natural gas-fired appliances, and architectural coatings.</p> <p>3. Emissions calculated based on data derived from the VMT analysis prepared for this project and emission factors for Fresno County derived from EMFAC2021. Annual emissions of SOX associated with typical development are anticipated to be negligible and were not included.</p> <p>4. SJVAPCD Significance Thresholds apply to individual projects and are presented for informational purposes only. Refer to Appendix C for emissions modeling assumptions and results.</p>					

Biological Resources

As described in [Section 4.5](#), the planning area and surrounding lands are highly disturbed residential and agricultural areas and provide few resources and an inhospitable environment for special status species. Any species that may occur in these areas are typically adapted to anthropogenic disturbance and/or are ornamental species. Both the Fowler 2040 GP and the “PDA Only” Alternative would involve conversion of agricultural land and open space to non-agriculture uses as well as greater urban development. Impacts to special status species and habitat are not explicitly regulated under the goals and policies proposed in the Project. However, development under either scenario would be subject to regulation by CDFW or USFWS if State or federally protected biological resources had the potential to be impacted by Project-related activities. Therefore, the Project and the “PDA Only” Alternative would be expected to result in less than significant impact with the applicable agency permits.

Both the Project and the “PDA Only” Alternative proposes the development of vacant or underdeveloped land and encourages growth of residential, commercial, and industrial areas, which may involve impacts to

urban biological resources including street trees. Both scenarios are subject to the same goals and policies aimed to preserve street trees and the urban forest, so impacts are expected to be similar and would be less than significant.

Riparian area and natural communities of special concern are absent from the planning area. Therefore, there would be no impact to these biological resources as a result of either the Project or the “PDA Only” Alternative.

Designated federally protected waters, as defined by Section 404 of the Clean Water Act, are currently not present in the planning area. However, as described in [Section 4.5](#), NWI indicates that potential wetlands are located within the planning area that may be categorized as waters of the United States or waters of the State. Activities involving impacts to State and/or federally protected waters are regulated by CDFW, USACE, and RWQCB. Therefore, activities under the Project and “PDA Only” Alternative are required to comply with the mitigation measures provided by the applicable agencies, which would minimize or avoid impacts to a less than significant level.

As described in [Section 4.5](#), the Project would have less than significant impacts on wildlife movement corridors, which are nearly absent from the planning area. Land use conversion and development would occur at a lower intensity under the “PDA Only” Alternative, so impacts to biological resources and movement corridors are expected to be similar, if not less. Therefore, development proposed under either scenario would have a less than significant effect on wildlife movement.

There are no Habitat Conservation Plans or Natural Community Conservation Plans Applicable to the planning area. Therefore, both the Project and “Existing SOI” Alternative would have no impact.

Cultural Resources

Implementation of the “PDA Only” Alternative would involve a smaller increase of development and associated growth than the “Existing SOI” Alternative. The Project would expand into the surrounding agricultural areas, causing significantly more ground disturbance and conversion of agricultural land into non-agricultural uses compared to the Project. The enhanced goals and policies related to cultural and historic resources embedded within the GP would apply to both the Project and the “PDA Only” Alternative and ensure that any adverse impacts are less than significant.

Similarly, proposed goals and policies that would guide development under both the Project and the “PDA Only” Alternative would encourage renovation of the downtown area, and thus may increase the desirability of redeveloping historic structures. Compliance with the established regulatory framework would ensure that the potential impacts from both scenarios are less than significant. Both scenarios would also be required to adhere to existing State and federal regulations regarding the treatment of human remains. Therefore, impacts would be less than significant under the Project and the “PDA Only” Alternative.

Energy

This alternative would result in higher overall fuel and energy use than the other alternatives evaluated. Overall fuel and energy use would be lower than that associated with the Full Fowler 2040 GP Buildout Alternative. However, when evaluated on a per capita basis, this alternative would result in higher fuel and energy use than that associated with the Full Fowler 2040 GP Buildout Alternative. The proposed Fowler 2040 GP includes proposed goals and policies that would help to reduce energy impacts. In addition, proposed mitigation measures identified in the energy analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would further reduce energy consumption such that future development would not be anticipated to result in a wasteful use of energy.

Therefore, it is expected that this alternative would similarly result in less than significant energy impacts than Full Fowler 2040 GP Buildout.

Table 6-14: Comparison of Operational Fuel Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
Existing SOI Alternative		
On Road Vehicles (Diesel)	4,848,385	666,076
On Road Vehicles (Gasoline)	9,339,978	1,123,469
Total:		1,789,545
Estimated Population:		24,612
MMBTU/Capita:		72.7
Full Fowler 2040 GP Buildout Alternative		
On Road Vehicles (Diesel)	5,885,630	808,574
On Road Vehicles (Gasoline)	11,388,136	1,363,819
Total:		2,172,393
Estimated Population:		48,404
MMBTU/Capita:		44.9
<i>MMBTU = Million metric British thermal units</i>		
<i>1. Fuel use was calculated based, in part, on project trip generation rates derived from the traffic analysis prepared for this project (Kittelson & Associates 2022).</i>		
<i>2. Refer to Appendix C for modeling assumptions and results.</i>		

Table 6-15: Comparison of Operational Electricity and Natural Gas Consumption

Source	Annual Fuel Use ¹ (gallons)	Annual MMBTU
PDA Only Alternative		
Electricity Consumption	275,249,080 kWh/Year	939,150
Water Use, Treatment, and Conveyance	23,719,371 kWh/Year	80,930
Natural Gas Use	676,278,540 kBTU/Year	676,279
Total:		1,696,359
Estimated Population:		24,612
MMBTU/Capita:		68.9
Full Fowler 2040 GP Buildout Alternative		
Electricity Consumption	336,659,330 kWh/Year	1,148,682
Water Use, Treatment, and Conveyance	26,572,392 kWh/Year	90,665
Natural Gas Use	862,651,820 kBTU/Year	862,652
Total:		2,101,998
Estimated Population:		48,404
MMBTU/Capita:		43.4
<i>MMBTU = Million metric British thermal units</i>		
<i>1. Fuel use was calculated based, in part, on default construction schedules, equipment use, and vehicle trips identified for the operation of similar land uses contained in the CalEEMod output files prepared for the air quality analysis conducted for this project.</i>		
<i>2. Refer to Appendix C for modeling assumptions and results.</i>		

Geology and Soils

Like the Project, the “PDA Only” Alternative would not produce any impacts due to fault rupture and would have a very low potential for impacts due to seismic related ground failure, including liquefaction and landslides. Existing regulatory standards within the CBC, as well as seismic and geologic safety goals and policies in future construction and development, would ensure that any potential impact are less than significant under both the Project and the “PDA Only” Alternative.

Soil disturbance is anticipated under the “PDA Only” Alternative and the Project, although to a considerably less extent under the alternative. Both scenarios would be required to comply with applicable local, State,

and federal regulations, and implementation of BMPs under the NPDES permit, which requires the preparation of a SWPPP. In addition, goals and policies presented in the GP would provide more protections under both scenarios by upgrading and retrofitting structures that don't meet building code standards. Therefore, impacts involving soil erosion or the potential loss of topsoil under the "PDA Only" Alternative and the Project would be less than significant through compliance with applicable regulations.

Future development in Fowler under the "PDA Only" Alternative and the Project would be required to comply with building design and engineering standards within the CBC. Impacts involving expansive or unstable soil are anticipated to be less than significant under either scenario.

Potential soil impacts associated with use of septic tanks or alternative wastewater disposal systems would not occur because these structures would not be installed. Therefore, there would be no impact under the Project or the "PDA Only" Alternative.

Construction activities such as grading, excavation, and ground-disturbing activities may result in the accidental destruction or disturbance of paleontological sites under both the Project and the "PDA Only" Alternative, although the area of disturbance is considerably less under the alternative. Nevertheless, compliance with the goals and policies of the GP as well as existing federal, State, and/or local regulations would ensure that adverse impacts are less than significant.

Greenhouse Gas Emissions

This alternative would result in an increase in residential and non-residential development when compared to the No Project Alternative. In comparison to the Full Fowler 2040 GP Buildout Alternative, this alternative would result in a decrease in residential and non-residential development. In comparison to the Full Fowler 2040 GP Buildout Alternative, this decreased development would be expected to result in a proportionate decrease in construction and operational air quality emissions, as shown in [Table 6-16](#). However, when evaluated on a per capita basis, this alternative would result in higher GHG emissions than those associated with the Full Fowler 2040 GP Buildout Alternative. Based on the population estimates and the estimated community wide GHG emissions noted in [Table 6-16](#), estimated emissions would total approximately 8.7 MTCO₂e/Capita under this alternative. Estimated GHG emissions associated with this alternative would exceed the significance threshold of 3.6 MTCO₂e/capita. As a result, implementation of this alternative could result in a significant impact on the environment and conflict with the State's GHG-reduction planning efforts. Proposed goals, policies, and mitigation measures identified in the air quality and GHG analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would reduce GHG emissions. However, details of future development projects are unknown at this time. Therefore, it may not be possible to reduce potential impact below acceptable thresholds in all instances. As a result, to be conservative, GHG impacts would be considered significant and unavoidable.

Table 6-16: Comparison of Annual Operational GHG Emissions at Buildout

Source	Emissions (MTCO ₂ e)	
	PDA Only Alternative	Full Fowler 2040 GP Buildout
Area ^{1, 2}	3,363	7,045
Energy Use ²	39,489	50,203
Mobile ³	143,185	173,818
Waste ¹	19,626	23,143
Water ¹	8,756	9,478
Total ⁴ :	214,419	263,687
Population:	24,612	48,404
MTCO ₂ e/Capita:	8.7	5.4
Significance Threshold (MTCO₂e/Capita):	3.6	3.6

Full Fowler 2040 GP Buildout Alternative

1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update.
2. Hearth emissions were removed in order to comply with SJVAPCD rules.
3. Trip-generation rates derived from the traffic analysis prepared for this project and emissions were calculated using EMFAC data.
4. Totals may not sum due to rounding.

Hazards and Hazardous Materials

For both the Project and “PDA Only” Alternative, compliance with the regulations, standards, and guidelines established by the USEPA, the State of California, Fresno County, and Fowler would ensure that any impacts related to the transportation, use, accidental spills, improper handling and storage, and disposal of hazardous materials and wastes are less than significant. While increased growth and development would significantly expand the sources of hazardous materials and risk of adverse impacts under the Project compared to the “PDA Only” Alternative, additional goals and policies proposed under the GP would apply to both scenarios and direct Fowler to identify hazardous waste transportation routes, work cooperatively with other public agencies in emergency response, and update the Emergency Response Plan. Therefore, impacts under both scenarios would be similar.

The policies contained in the Project would provide a more comprehensive suite of emergency protections, including ensuring that the siting of critical emergency response facilities and communications facilities have minimal exposure to flooding, seismic and geologic effects, fire, and explosions. Thus, implementation of the Project or the “PDA Only” Alternative would have similar impacts for critical emergency response facilities in the event of an emergency.

Neither the Project, nor the “PDA Only” Alternative would expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Impacts from both scenarios would be the same. Further detail can be found in [Section 4.21](#).

Hydrology and Water Quality

Construction activities under the Project and the “PDA Only” Alternative could result in the alteration of existing drainage patterns and soil erosion due to earth-moving and ground disturbance. The greater amount of acreage under development would increase the impacts under both scenarios, although the “PDA Only” Alternative would involve a lower level of increase than the full Project and the expansion areas would cover slightly less are. Conditions outlined within the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Construction General Permit (Order No. 2012-0006-DWQ) would ensure impacts relating to water quality are less than significant for any particular project. Impacts under the Project and the “PDA Only” Alternative would be the same.

Changes in ground surface permeability from new paving, and changes in topography due to grading and excavation would occur under both the “PDA Only” Alternative and the Project, but impacts from these changes would also be regulated by the NPDES General Permit. While the Project may have greater overall disturbance, policies and goals would be implemented to regulate water quality and stormwater management, and promote water use efficiency and conservation, and would ensure that impacts under the Project and “PDA Only” Alternative are less than significant.

Flooding hazards would be increased under the Project and “PDA Only” Alternative due to increased development. Implementation of the new proposed policies and goals, in conjunction with State and federal regulations, would ensure that impacts would be less than significant under both options.

Fowler is located in Central California and is therefore not located in a tsunami or seiche zone. The Project and “No Project” Alternative would have no impact

Land Use and Planning

Neither the “PDA Only” Alternative nor the Project would divide an established community. Implementation of policies that would facilitate the development and use of the bicycle, sidewalk, trail, and road networks within the planning area would make it easier for residents to travel throughout the community under both the Project and the “PDA Only” Alternative. There would be similar impacts for both options.

Any future development within Fowler would be required to be consistent within the Fowler’s Municipal Code, which would regulate intensity of allowed use and compatibility with surrounding uses. Although implementation of the “PDA Only” Alternative would involve less overall development and associated growth than would occur under the Project, policies and goals proposed by the GP would provide more protections and efficient land use which would ensure that impacts under both options are less than significant

Mineral Resources

Fowler does not contain any known mineral resources or mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan. The Project and the “PDA Only” Alternative would have no impact.

Noise

VMT associated with this alternative would be higher than that associated with the No Project Alternative, yet lower than that generated by the Full Fowler 2040 GP Buildout Alternative. In comparison to the No Project Alternative this increase in VMT would be anticipated to result in commensurable increases in traffic noise levels on area roadways. In comparison to the Full Fowler 2040 GP Buildout Alternative, this alternative would be anticipated to result in lower overall traffic noise levels. As noted in the noise analysis prepared for the proposed Fowler 2040 GP, the proposed Fowler 2040 GP includes goals and policies that would reduce noise impacts. These same goals and policies, as well as the proposed mitigation measures identified in the noise analysis prepared for the Full Fowler 2040 GP Buildout Alternative would also be recommended for this alternative, which would further reduce noise exposure to both non-transportation and transportation noise sources. Therefore, with mitigation, it is expected that this alternative would similarly result in less than significant noise impacts.

Population and Housing

As described in [Section 4.15](#), the Fowler 2040 GP’s impacts related to population and housing would be less than significant with the implementation of applicable regulations including GP policies and programs.

Implementation of the “PDA Only” Alternative would involve less development and growth compared to the Project. Buildout of the “PDA Only” Alternative would accommodate 24,612 people and 7,504 dwelling units, compared to the Project, which would accommodate a population of 48,131 and 14,764 dwelling units. The Fowler 2040 GP would result in population growth within the planning area through the construction of new homes, businesses, and the extension of utilities and infrastructure, and would implement a land use plan that would accommodate for a larger population under both the Project and the “PDA Only” Alternative. Historical annual growth rate of Fowler between two and three percent makes it unlikely that the actual buildout of the Fowler 2040 GP would exceed the planned buildout; therefore, replacement housing elsewhere would not be necessary and impacts to housing would be less than significant. Growth and development under the “PDA Only” Alternative would also be unlikely to reach full potential buildout, and would be able to accommodate the two to three percent growth without the displacement of housing and people. Therefore, although development and population growth would be larger under the Project, both scenarios would be able to handle full projected growth. Impacts would be similar.

Public Services

The growth in population and new development under the Project and the “PDA Only” Alternative would increase the existing demand for fire protection services, police protection services, school facilities, and library facilities. To maintain or achieve acceptable service standards, new or physically altered fire, police, school, and library facilities and services would be required. When compared to the Project, the “Existing PDA Only” Alternative would accommodate a lower population (24,612 people compared to 48,131 under the Project), but would still create a greater demand for facilities to be constructed or expanded.

Goals and policies included in the Fowler 2040 GP would ensure that demands from population growth are met through provision of adequate staffing, infrastructure, utilities, and funding opportunities. Population growth under both the Project and the “PDA Only” Alternative would create more demand on public services, but would also provide ways to accommodate that demand. Therefore, impacts under either option would be the same.

Recreation

As discussed in [Section 4.17](#), the Project would result in a less than significant impact to recreational facilities by implementing goals and policies that would set a target parkland-to-population ratio and facilitate the addition and funding of new parks, facilities, open space, and trail facilities to accommodate a growing population and ensure access to all members of the community. The “PDA Only” Alternative, following the same goals and policies, would likely accommodate a smaller population and require a lower area of parkland. However, potential impacts to recreation under either scenario would be less than significant, avoiding deterioration to existing facilities by ensuring space and funding for new development.

The Project and the “PDA Only” Alternative may include environmental impacts associated with development and construction of new recreational facilities, which would be guided by goals and policies within the GP. Compliance with the applicable mitigation measures in the Fowler 2040 GP would ensure that impacts to recreation under both the Project and the “PDA Only” are less than significant.

Transportation

The Fowler 2040 GP would result in a less than significant impact to transportation with the implementation of goals and policies to improve access and circulation, as well as other transportation related issues. The “PDA Only” Alternative would result in a jobs to housing ratio of 3.9. While this imbalance implies that Fowler would become even more jobs-rich, it also means that employees would drive even further distances to access employment and other services. As the proposed Fowler General Plan would possess a Jobs-Housing ratio of 1.99, implementation of this alternative would result in higher VMT per employee.

While the policies implemented in the Fowler 2040 GP would reduce any impact to less than significant, this alternative would have slightly higher adverse impacts to transportation compared to the Project.

Tribal Cultural Resources

The “PDA Only” Alternative would involve less development and expansion than the Project and would prioritize infill development rather than new ground disturbance. However, this alternative would follow the same land use patterns within similar boundaries of the planning area as would be facilitated by the Project. Therefore, while development under this alternative could potentially result in fewer impacts to tribal cultural resources than the Project, the potential to encounter resources during ground disturbance and construction activities would be similar, and the goals and policies proposed by the Project would ensure that any potential impacts are less than significant.

Development under both this alternative and the Project would also be required to comply with current laws and regulations requiring Native American consultation, and protection of human remains and pre-historic artifacts, which would reduce potential impacts to a less than significant level with mitigation incorporated. Thus, this alternative and the Project would have similar impact on tribal cultural resources, despite the difference in project size.

Utilities and Service Systems

Impacts under the “PDA Only” Alternative related to wastewater treatment requirements, new water or wastewater treatment facilities, sufficient stormwater drainage facilities, adequate water supplies, adequate wastewater facilities, sufficient landfill capacity, solid waste regulations, and energy would be similar to those discussed for the Project but to a lesser degree because of the overall decrease in development. The “PDA Only” Alternative would accommodate a lower population than the Project, but development and growth under this alternative would still create higher demand for water and wastewater services and, therefore, a potential increased demand for water provision and wastewater collection, conveyance, and treatment services over currently established levels.

The newest efficiency standards, goals and policies proposed in the GP, and compliance with federal, State, and local statutes and regulations related to solid waste would ensure that impacts to utilities and service systems are less than significant under both the Project and the “Existing SOI” Alternative.

Wildfire

As described in [Section 4.21](#), Fowler is not in or near a very high fire hazard severity zone or a SRA. Fowler does not have an adopted emergency response plan or emergency evacuation plan, but instead falls under the Fresno County Master Emergency Services Plan, which mitigates for fire risk and guides emergency preparedness planning. Neither the Project, nor the “PDA Only” Alternative, would conflict with the County plan, resulting in a less than significant impact.

Fowler provides an urban and built-up setting that would present a low risk of wildfire due to environmental factors, including existing vegetation maintenance within and around Fowler. Future development under the Project or the “PDA Only” Alternative would be required to comply with the regulations and requirements of the CBC to maintain adequate safety measures regarding wildfire safety and preparedness. Therefore, any potential impacts that could exacerbate fire risk would be less than significant under both the Project and the “No Project” Alternative.

Furthermore, Fowler is not located on land that includes substantial slopes at risk of landslide that would put the public at increased risk of wildfire due to post-fire slope instability. The Project proposes goals and policies that would increase awareness of wildfire and emergency preparedness, but due to the existing low-risk setting, similar wildfire related impacts would be anticipated under both scenarios, and would be less than significant under both scenarios.

6.4 Significant and Unavoidable Project Impacts

The Fowler 2040 GP was analyzed for potentially significant impacts related to each of the environmental topic areas discussed in [Chapter 4](#). The results of the analysis demonstrate that the General Plan would result in significant and unavoidable impacts to Greenhouse Gas Emissions, Agriculture and Forestry Resources, and Air Quality.

6.5 Alternatives Considered but Rejected

It was determined that the “No Project” alternative did not meet certain Fowler 2040 GP goals and objectives. The unchanged land use plan does not provide for the growth of Fowler to meet its long-term residential and commercial needs, nor does it account for the increase service needs on the west side of SR 99. Furthermore, the existing policies do not address new policy topics identified in the objectives, including vehicles miles traveled.

Notably absent from the selected alternatives is an alternative project site. CEQA Guidelines Section 15126.6(f)(2) specifically addresses the requirements for consideration of alternate locations. The CEQA Guidelines specifically note that there may be no feasible alternative locations for some types of projects, such as a project that is governed by the location of natural resources critical to the project. Due to the programmatic and citywide nature of the GP, it is not feasible to evaluate an alternative project site. The General Plan does not identify any site-specific projects; rather, it designates broad areas for certain types of residential, commercial, and other development via land use designations. By definition, the Fowler 2040 GP must govern development within Fowler, so alternative locations are not applicable.

6.6 Environmentally Superior Alternative

According to State CEQA Guidelines Section 15126.6(e), “if the environmentally superior alternative is the No Project Alternative, the DEIR shall also identify an environmentally superior alternative among the other alternatives.” [Table 6-17](#) summarizes the comparative analyses presented above (i.e., the alternatives compared to the proposed Project). As shown in [Table 6-17](#), the Priority Development Area Only Alternative is the environmentally superior alternative because it would reduce many of the Project’s impacts. Therefore, in compliance with CEQA requirements, this DEIR also identifies an environmentally superior alternative among the other alternatives.

Table 6-17: Comparison of Project Alternative Impacts

Resource Areas	Alternative 1: No Project	Alternative 2: Existing SOI	Alternative 3: PDA Only
Aesthetics	∨	=	=
Agriculture and Forestry Resources	∨	=	=
Air Quality	∨	∧	∧
Biological Resources	∨	=	=
Cultural Resources	∨	=	=
Energy	∨	=	=
Geology and Soils	∧	=	=
Greenhouse Gas Emissions	∨	∧	∧
Hazards and Hazardous Materials	∧	=	=
Hydrology and Water Quality	∧	=	∨
Land Use and Planning	∧	=	=
Mineral Resources	=	=	=
Noise	∨	=	=
Population and Housing	=	∧	∧

Resource Areas	Alternative 1: No Project	Alternative 2: Existing SOI	Alternative 3: PDA Only
Public Services	∨	=	=
Recreation	^	=	=
Transportation	^	=	^
Tribal Cultural Resources	∨	=	=
Utilities and Service Systems	∨	=	∨
Wildfire	=	=	=
^ Indicates an impact that is greater than the proposed project (environmentally inferior). ∨ Indicates an impact that is less than the proposed project (environmentally superior). = Indicates an impact that is equal to the proposed project (neither environmentally superior nor inferior)			

Chapter 7 References

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Appendix A: Notice of Preparation



**NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND
NOTICE OF PUBLIC SCOPING MEETING REGARDING THE
PROPOSED CITY OF FOWLER GENERAL PLAN UPDATE PROJECT**

The City of Fowler (City) will be the Lead Agency and will have an Environmental Impact Report (EIR) prepared for City of Fowler General Plan Update Project (Project), described below. The City of Fowler has hired a consultant to prepare the EIR for the Project in accordance with the California Environmental Quality Act (CEQA). The City will consider the EIR in its action on the Project at a later date to be determined and announced.

Your participation as a responsible/trustee agency/cooperating agency or interested person is requested in the preparation and review of the Draft EIR. We are seeking your views at the time regarding the scope and content of the environmental information that is relevant to you or to your agency's statutory responsibilities.

The Project may require actions or approvals by other agencies. Please inform us of any applicable permit and environmental requirements of your agency with respect to the Project. Your agency may need to use the EIR when considering your permit or other approval for the Project.

Project Title: City of Fowler General Plan Update

Project Applicant: City of Fowler
125 S. Fifth Street
Fowler, CA 93625

Project Location: The Project would encompass the entire City of Fowler and its planning area. Fowler is a part of Fresno County and is positioned 11 miles southeast of downtown Fresno. The Project area is located west of the Sierra Nevada Mountains, and Fresno County lies within the San Joaquin Valley. Fowler is part of the San Joaquin Valley Air Basin. There are several cities that are near Fowler in addition to Fresno. This includes Selma 5 miles to the southeast, Kingsburg 10 miles to the southeast, Reedley 13 miles to the southeast, Parlier 8 miles to the southeast, Sanger 8 miles to the northeast, and Kerman 22 miles to the northwest. Highway 99 bisects the City into eastern and western portions. The City shares a sphere of influence with the City of Selma to the southeast.

Project Description: The Project includes the General Plan Update for the City of Fowler. The General Plan Update presents a framework of goals and policies that respond to issues of relevance to the community, strive to meet its imagined future, and maintain a high quality of life for its residents in the face of ever-changing environmental, economic, and social circumstances.

Potential Environmental Effects: The scoping meeting will assist with determining the environmental impacts of the Project.

The Operational Statement and associated maps are available for review at the City of Fowler Planning and Community Development Department, 128 S 5th Street, Fowler, CA 93625, during normal business hours Monday through Friday, 8:00 A.M. to 5:00 P.M.

Written Comments: Comments in response to the Notice of Preparation will be accepted from November 1st 5:00 P.M., through December 1, 2021. Please send your written comments to:

Dawn E. Marple, Contract City Planner
City of Fowler Planning and Community Development Department
128 South 5th Street
Fowler, CA 93625
Phone: (559) 834-3113 ext.122
Fax: (559) 834-1284
Email: dmarple@ci.fowler.ca.us

All written comments should reference City of Fowler General Plan Update Project Environmental Impact Report. Please include your name, address, and phone number, and/or email so that we may contact you for clarification, if necessary.

Persons with questions or requests for information may call Dawn E. Marple at (559) 834-3113 or email at dmarple@ci.fowler.ca.us

Public Scoping Meeting: The CEQA process encourages comments and questions from the public throughout the planning process. Pursuant to Section 15083 of the CEQA Guidelines, a Public Scoping Meeting will be held to solicit public comments on the scope and content of the EIR. The Public Scoping Meeting will be held on:

Date: Thursday, November 18, 2021

Time: 5:30 P.M. to 7:00 P.M.

Place: City of Fowler, Council Chambers. Located at 128 S. 5th Street, Fowler, CA 93625

Newspaper Notice of Preparation Published: The Business Journal, November 1, 2021.

Appendix B: Comments



NOVEMBER 19, 2021

VIA EMAIL: DMARPLE@CI.FOWLER.CA.US

Dawn E. Marple, Contract City Planner
City of Fowler
Planning and Community Development Department
128 South 5th Street
Fowler, CA 93625

Dear Ms. Marple:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED
CITY OF FOWLER GENERAL PLAN UPDATE, SCH#2021110053

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation of an Environmental Impact Report for the Proposed City of Fowler General Plan Update (Project). The Division monitors farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. We offer the following comments and recommendations with respect to the project's potential impacts on agricultural land and resources.

Project Description

The Project includes the General Plan Update for the City of Fowler. The General Plan Update presents a framework of goals and policies that respond to issues of relevance to the community, strive to meet its imagined future, and maintain a high quality of life for its residents in the face of ever-changing environmental, economic, and social circumstances.

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. CEQA requires that all feasible and reasonable mitigation be reviewed and applied to projects. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project.

All mitigation measures that are potentially feasible should be included in the project's environmental review. A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

- Proposed mitigation measures for all impacted agricultural lands within the proposed project area.
- The Projects compatibility with, and/or, potential contract resolutions for lands within agricultural preserves and/or enrolled in a Williamson Act contract.
- If applicable, notification of Williamson Act contract non-renewal and/or cancellation.

Thank you for giving us the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Proposed City of Fowler General Plan Update Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber

Monique Wilber

Conservation Program Support Supervisor



NATIVE AMERICAN HERITAGE COMMISSION

RECEIVED
NOV 17 2021

BY:

November 12, 2021

Dawn E. Marple
City of Fowler
128 S Fifth Street
Fowler, CA 93625CHAIRPERSON
Laura Miranda
Luiseño

Re: 2021110053, City of Fowler General Plan EIR Project, Fresno County

VICE CHAIRPERSON
Reginald Pagaling
Chumash

Dear Ms. Marple:

PARLIAMENTARIAN
Russell Attebery
Karuk

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit. 14, § 15064.5 (b) (CEQA Guidelines § 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

COMMISSIONER
William Mungary
Paiute/White Mountain
ApacheCOMMISSIONER
Isaac Bojorquez
Ohlone-CostanoanCOMMISSIONER
Sara Dutschke
Miwok

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki,
NomlakiCOMMISSIONER
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Stanley Rodriguez
KumeyaayEXECUTIVE SECRETARY
Christina Snider
Pomo

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
 - a. A brief description of the project.
 - b. The lead agency contact information.
 - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
 - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
 - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
 - a. Alternatives to the project.
 - b. Recommended mitigation measures.
 - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:
 - a. Type of environmental review necessary.
 - b. Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.
 - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
 - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
 - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a. Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.
 - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i. Protecting the cultural character and integrity of the resource.
 - ii. Protecting the traditional use of the resource.
 - iii. Protecting the confidentiality of the resource.
 - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
 - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
 - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
 - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
 - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. **Tribal Consultation**: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation**. There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality**: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation**: Consultation should be concluded at the point in which:
 - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
 - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
 - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
 - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
 - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:
Andrew.Green@nahc.ca.gov.

Sincerely,



Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

Appendix C: Air Quality Impact Analysis

AIR QUALITY IMPACT ANALYSIS

FOR

CITY OF FOWLER GENERAL PLAN UPDATE

NOVEMBER 2022

PREPARED FOR:

PROVOST & PRITCHARD
CONSULTING GROUP
1800 30TH STREET, SUITE 280
BAKERSFIELD, CA 93301

PREPARED BY:



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LIST OF COMMON TERMS & ACRONYMS

AHERA	Asbestos Hazard Emergency Response Act
ATCM	Airborne Toxic Control Measure
CAAQS	California Ambient Air Quality Standards
ARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CH ₄	Methane
CO	Carbon Monoxide
DPM	Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	Diesel Risk Reduction Plan
FCAA	Federal Clean Air Act
HAP	Hazardous Air Pollutant
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of Service
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emission Standards for HAPs
NO _x	Oxides of Nitrogen
O ₃	Ozone
Pb	Lead
PM	Particulate Matter
PM ₁₀	Particulate Matter (less than 10 µm)
PM _{2.5}	Particulate Matter (less than 2.5 µm)
ppb	Parts per Billion
ppm	Parts per Million
ROG	Reactive Organic Gases
SCAQMD	South Coast Air Quality Management District
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO ₂	Sulfur Dioxide
SRTS	Safe Routes to School
TAC	Toxic Air Contaminant
TSCA	Toxic Substances Control Act
µg/m ³	Micrograms per cubic meter
U.S. EPA	United State Environmental Protection Agency

INTRODUCTION

This report provides a summary of important laws, regulations, and guidance documents relevant to air quality and land use planning in California and Fowler; an overview of existing air quality issues and conditions; a description of local and regional air quality issues and programs; and a summary of findings. The findings from this analysis will inform the development of goals and policies in the City's General Plan Update (GPU).

PROPOSED CITY OF FOWLER GENERAL PLAN UPDATE

The City of Fowler adopted its first General Plan in 1976. The currently adopted General Plan was adopted in June 2004 and runs through 2025. Since its adoption, the General Plan has been revised and amended but has not been comprehensively updated. The proposed GPU will include updates to represent changes in community conditions, new legislation, new regulatory requirements and planning practices, and updates regarding new social and environmental issues. The GPU will be updated to provide a planning horizon of year 2040. The City of Fowler's city limits, sphere of influence, and planning area are depicted in Figure 1.

AIR QUALITY BACKGROUND

Geography

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

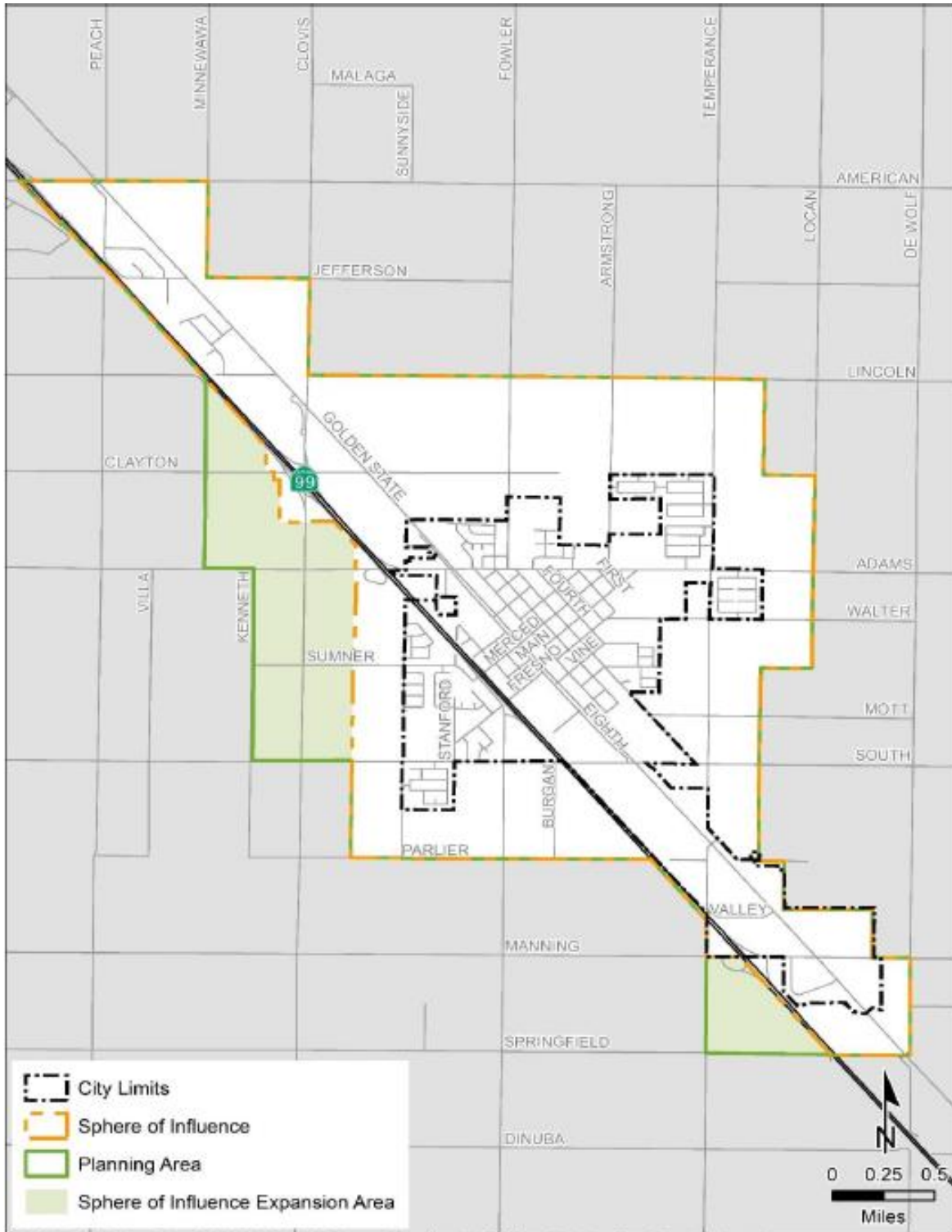
Climate Meteorology, Topography, and Pollutant Dispersion

The SJVAB, in which the City of Fowler is situated, has an inland Mediterranean climate characterized by warm, dry summers and cooler winters. Summer temperatures often exceed 100 degrees Fahrenheit (°F) and can vary as much as 30°F. Winters are for the most part mild and humid, with average high in the 50s, while the average daily low temperature is approximately 45°F.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Air temperature usually decreases as altitude increases. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Air above and below an inversion does not mix because of differences in air density thereby restricting air pollutant dispersal.

Wind speed and direction play an important role in the dispersion and transport of air pollutants. During summer periods, winds typically originate from the northern San Joaquin Valley and flow in a south-southeasterly direction through the Valley, down through the Tehachapi Pass and into the neighboring Southeast Desert Air Basin. During winter months, winds occasionally originate in the opposite direction, from the south end of the Valley and flow in a north-northwesterly direction. Also, during winter months,

Figure 1. Proposed General Plan Update Focus Areas



Source: City of Fowler Community Report 2021

the Valley experiences light, variable winds, less than 10 miles per hour. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of certain air pollutants.

The SJVAB is basically a flat area bordered on the east by the Sierra Nevada Mountains; on the west by the Coast Ranges; and to the south by the Tehachapi Mountains. Airflow in the SJVAB is primarily influenced by marine air that enters through the Carquinez Straits where the San Joaquin-Sacramento Delta empties into the San Francisco Bay. The region's topographic features restrict air movement through and out of the basin. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Frequent transport of pollutants into the SJVAB from upwind sources also contributes to poor air quality. The climate is semi-arid, with an annual normal precipitation of approximately 11 inches. Temperatures in the project area range from an average minimum of approximately 38°F, in January, to an average maximum of 98°F, in July (WRCC 2018).

Air Pollutants of Primary Concern

Criteria Air Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The following provides a summary discussion of the criteria air pollutants of primary concern.

Ozone (O₃) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Oxides of Nitrogen (NO_x) are a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles (PM₁₀)," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM_{2.5-10} is deposited in the thoracic region of the lungs.
- "Fine particles (PM_{2.5})," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossil fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of PM_{2.5}, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM₁₀, PM_{2.5}, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, PM_{2.5} and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been

reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (ARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM₁₀. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO₂) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_x, suspended sulfur oxides (SO_x) particles contribute to the poor visibility. These SO_x particles can also combine with other pollutants to form PM_{2.5}. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). Occupational Safety and Health Administration (OSHA) regulates workplace exposure to H₂S.

Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by Federal standards. The ARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates (SO₄²⁻) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO₂ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in

degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles: Are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride (C₂H₃Cl or VCM) is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Odors

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

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

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.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations (EPA 1991). Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California

Clean Air Act (CCAA), and are thus not subject to National or State AAQS. TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of National or State AAQS. Instead, the U.S. EPA and ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

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

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

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the South Coast Air Quality Management District (SCAQMD) are evaluated for TAC emissions. The SCAQMD limits emissions and public exposure to TACs through a number of programs. The SCAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SCAQMD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

Land Use Compatibility with TAC Emission Sources

The ARB published an informational guide entitled: *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. The ARB's Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined "buffer zones". It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies (ARB 2005). Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located within the distances identified. ARB-recommended separation distances for various sources of emissions are summarized in Table 1.

**Table 1. Recommendations on Siting New Sensitive Land Uses
Near Air Pollutant Sources**

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.
<p><i>Recommendations are advisory, are not site specific, and may not fully account for future reductions in emissions, including those resulting from compliance with existing/future regulatory requirements.</i></p> <p><i>Source: ARB 2005</i></p>	

Sensitive Receptors

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

Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in the SJVAB. The Fresno-Drummond Street monitoring station is the closest representative monitoring station with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Fresno-Drummond Street monitoring station monitors ambient concentrations of ozone, NO₂, and PM₁₀. The Fresno-Hamilton and Winery monitoring station is the closest station monitoring PM_{2.5}. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2019 through 2021) and are summarized in Table

2. As depicted, the state and federal ozone and PM_{2.5}, and PM₁₀ standards were exceeded on numerous occasions during the past 3 years.

Table 2. Summary of Ambient Air Quality Monitoring Data

Pollutant	Monitoring Year		
	2019	2020	2021
Ozone¹			
Maximum concentration (1-hour/8-hour average)	0.099/0.080	0.123/0.091	0.125/0.099
Number of days state/national 1-hour standard exceeded	1/0	11/0	9/1
Number of days 2008 national/2015 national 8-hour standard exceeded	2/10	14/27	16/39
Nitrogen Dioxide (NO₂)¹			
Maximum concentration (1-hour average)	42.3	66.8	64.5
Annual average	NA	NA	11
Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter (PM_{2.5})²			
Maximum concentration (national/state)	44.7/44.7	143.3/143.3	81.3/81.3
Annual Average (national/state)	11.2/NA	18.5/NA	13.7/NA
Number of days national standard exceeded (measured/calculated)	3/9.3	13/39.3	27/27.7
Suspended Particulate Matter (PM₁₀)¹			
Maximum concentration (national/state)	175.6/181.3	350.4/349.2	151.8/149.8
Number of days state standard exceeded (measured/calculated)	13/78.3	25/NA	20/NA
Number of days national standard exceeded (measured/calculated)	1/6.1	1/5.8	0/NA
<p><i>ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available</i></p> <p><i>1. Based on ambient concentrations obtained from the Fresno-Drummond Street Monitoring Station.</i></p> <p><i>2. Based on ambient concentrations obtained from the Fresno-Hamilton and Winery Monitoring Station</i></p> <p><i>2. Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.</i></p> <p><i>Source: ARB 2022a</i></p>			

REGULATORY SETTING

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

Federal

U.S. Environmental Protection Agency

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

Federal Clean Air Act

The FCAA was first signed into law in 1970. In 1977, Congress added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant

Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, State attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. The EPA is responsible for administering the FCAA. NAAQS are summarized in Table 3.

Toxic Substances Control Act

The Toxic Substances Control Act first authorized the U.S. EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies to inspect their schools for asbestos-containing building materials (ACBM) and to prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the NESHAPs. These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include ACBM. NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBM associated with the demolition and renovation of structures.

State

California Air Resources Board

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

Table 3. Summary of Ambient Air Quality Standards & Attainment Designations

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Non-Attainment	–	Non-Attainment
	8-hour	0.070 ppm		0.070 ppm	
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Non-Attainment	–	Attainment
	24-hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Non-Attainment	12 µg/m ³	Non-Attainment
	24-hour	No Standard		35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	Unclassified/Attainment	35 ppm	Unclassified/Attainment
	8-hour	9 ppm		9 ppm	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	0.053 ppm	Unclassified/Attainment
	1-hour	0.18 ppm		0.100 ppb ^b	
Sulfur Dioxide (SO ₂)	AAM	–	Attainment	0.03 ppm	Unclassified/Attainment
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m ³	Attainment	–	No Designation/Classification
	Calendar Quarter	–		1.5 µg/m ³	
	Rolling 3-Month Average	–		0.15 µg/m ³	
Sulfates	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

Source: SJVAPCD 2022

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO₂, and NO₂ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures

to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bill 170

Requires cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts.

Senate Bill 709

Gave the Air District more responsibility in terms of permitting, fee implementation, and agricultural assistance, but also gives the air district the authority to require the use of best available control technology (BACT) for existing sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing. It also allows the air district to adopt a surcharge on motor vehicle registration fees in counties within the air district.

Senate Bill 656 (Chapter 738, Statutes of 2003)

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM₁₀ and PM_{2.5}. SB 656 required ARB, in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by ARB and the air districts to reduce PM₁₀ and PM_{2.5} (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for PM_{2.5} and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal PM_{2.5} attainment plans, as well as for State ozone plans. This ensures continuing focus on PM reduction and progress towards attaining California's more health protective standards. This list of air district control measures was adopted by ARB on November 18, 2004. ARB also developed a list of State PM control measures for mobile and stationary sources, including measures planned for adoption as part of ARB's Diesel Risk Reduction Plan.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

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

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not

apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation, establishes emissions performance requirements, establishes reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

Advanced Clean Cars II

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2022b).

Small Off-Road Engines

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2021).

Regional

San Joaquin Valley Air Pollution Control District

The SJVAPCD is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective, and entrepreneurial air quality-management strategies. SJVAPCD's ten core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the Valley; continuous improvement; effective and efficient use of public funds; and respect for the opinions and interests of all Valley residents. To achieve these core values the SJVAPCD has adopted air quality plans pursuant to the CCAA and a comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the proposed Project are listed and described further below.

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the SJVAB. Relevant SJVAPCD air quality plans, rules and regulations are summarized below:

SJVAPCD Air Quality Plans

- **2016 Ozone Plan.** The SJVAB is designated nonattainment of state and federal health-based air quality standards for ozone. EPA established 8-hour ozone standards in 1997 (84 parts per billion [ppb]), 2008 (75 ppb), and 2015 (70 ppb). The San Joaquin Valley is currently classified as in

nonattainment for each of these increasingly stringent standards. The district has adopted plans for the 1997 and 2008 ozone standards, and is on track to meet the attainment deadlines for both.

This plan included an in-depth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by EPA in 2008) for all areas of the SJVAB no later than 2031. This plan went above and beyond minimum legal requirements by including a “Fast Track” control strategy. Through Fast Track, new strategies produce real reductions (even though they cannot be legally counted in the plan at this time) and will clean the air before the deadline.

Currently the air district is drafting their 2022 Ozone Plan with goal of attaining the 70 ppb standard by the 2037 deadline. “Given that over 85% of remaining NOx emissions in the Valley come from mobile sources under state and federal jurisdiction, it will be particularly important that continued efforts to reduce emissions from passenger vehicles, heavy duty trucks, locomotives, and other mobile sources be pursued.”

- **2007 PM₁₀ Plan.** The Air District’s 2007 PM₁₀ Maintenance Plan and Request for Redesignation, approved on September 21, 2007, assures that the Valley will continue to meet the PM₁₀ standard and requests that EPA formally redesignate, or label, the Valley to attainment status. On April 5, 2008, EPA stated their intent to approve the PM₁₀ Maintenance Plan.
- **PM_{2.5} Attainment Plan.** Throughout the years the SJVAPCD has implemented several plans to reduce PM_{2.5} and its effects on residence in the Valley. The most recent plan 2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards (Plan) builds on existing plans and measure adopted by the district and ARB to address federal air quality standards. This Plan integrates a comprehensive strategy that contains new stationary source measures that will be applied Valley wide and measures focused on reducing emissions in areas with the most difficult attainment challenges. Through the implementation of this comprehensive strategy, the Valley will experience air quality improvements as the region attains the federal PM_{2.5} standards as expeditiously as practicable. The 2018 PM_{2.5} Plan estimates that the SJVAB will reach the 2012 PM_{2.5} standard in 2025.

SJVAPCD Rules & Regulations

- **Regulation VIII. Fugitive PM₁₀ Prohibitions.** The purpose of this regulation is to reduce ambient concentrations of PM₁₀ by prohibiting, reducing, or mitigating anthropogenic emissions of fugitive dust, including emissions associated with various construction and operational activities.
- **Rule 4002. National Emissions Standards for Hazardous Air Pollutants.** This rule may apply to projects in which portions of an existing building would be renovated, partially demolished or removed. With regard to asbestos, the NESHAP specifies work practices to be followed during renovation, demolition or other abatement activities when friable asbestos is involved. Prior to demolition activity, an asbestos survey of the existing structure may be required to identify the presence of any ACBM. Removal of identified ACBM must be removed by a certified asbestos contractor in accordance with California Division of Occupational Safety and Health (CAL-OSHA) requirements.
- **Rule 4102. Nuisance.** Applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 4103. Open Burning.** This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.1 of this rule prohibits the burning of trees and

other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes.

- **Rule 4601, Architectural Coatings.** This rule sets VOC limits on architectural coatings used in or on buildings, and on streets and parking lots.
- **Rule 4901, Woodburning Fireplaces.** Woodburning fireplaces and heaters, emitters of particulate matter, are regulated by the SJVAPCD. As of 2020, woodburning fireplaces and heaters are not allowed in new construction unless it cannot be serviced by natural gas.
- **Rule 4641. Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- **Rule 4905, Natural Gas-fired Central Furnaces.** The purpose of this rule is to limit NO_x emission from natural gas-fired furnaces.
- **Rule 9510, Indirect Source Review (ISR).** The purpose of this rule is to reduce construction and operational emissions associated with the use of development projects through implementation of design features, on-site emission-reduction measures, or off-site measures or the payment of an off-site emissions reduction fee to the SJVAPCD. For projects subject to this rule, the ISR rule requires developers to mitigate and/or offset emissions sufficient to achieve: (1) 20-percent reduction of construction equipment exhaust NO_x; (2) 45-percent reduction of construction equipment exhaust PM₁₀; (3) 33-percent reduction of operational NO_x over 10 years; and (4) 50-percent reduction of operational PM₁₀ over 10 years. SJVAPCD ISR applications must be filed “no later than applying for a final discretionary approval with a public agency.”

Fresno Council of Governments

The Fresno Council of Governments (FCOG) is a voluntary association of local governments, one of California’s 38 regional planning agencies, and one of 500+ nationwide. FCOG undertakes comprehensive regional planning with an emphasis on transportation. FCOG is responsible for regional transportation planning in Fresno County and participates in developing mobile source emissions inventories used in air quality attainment plans.

Fresno County Regional Transportation Plan

The Fresno Council of Governments (FCOGs) 2022 Regional Transportation Plan (RTP) comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2042. FCOG’s first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-range transportation plans extend at least 20 years into the future. As the federally designated MPO and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region’s 15 cities, the County of Fresno, staff from related local public agencies, the San Joaquin Valley Air Pollution Control District (SJVAPCD), Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, and each element is augmented by additional documentation. The RTP also contains a chapter that establishes the SCS to show how integrated land use and transportation planning can lead to more efficient use of autos and light trucks, as well as improve the overall quality of life in the region.

Local

City of Fowler General Plan

The current Fowler General Plan (2004) includes various goals and policies that are intended to help improve local and regional air quality. These policies include efforts to reduce emissions associated with vehicle use, energy use, and operational emissions associated with stationary sources. Policies are also included to manage the growth and development of the City of Fowler.

Rule 4901

On June 20, 2019, the SJVAPCD adopted amendments to Rule 4901 to reduce the public's exposure to harmful particulates from wood smoke. Residential wood burning is one of the largest sources of PM^{2.5} in the San Joaquin Valley during the winter season. Under the rule installation of new wood burning fireplaces and heaters is restricted at elevations below 3,000 ft. The rule also requires any modifications made to an existing fireplace or chimney must install an EPA certified, gas fueled or electric device (SJVAPCD 2021).

REGULATORY ATTAINMENT DESIGNATIONS

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

The U.S. EPA designates areas for ozone, CO, and NO₂ as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO₂, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM₁₀ based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated "unclassified."

The state and national attainment status designations for the SJVAB are summarized in Table 3. The SJVAB is currently designated as a nonattainment area with respect to the state ozone, PM₁₀, and PM_{2.5} standards, as well as the national 8-hour ozone and PM_{2.5} standards.

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

- AQ-1: Conflict with or obstruct implementation of the applicable air quality plan.
- AQ-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.
- AQ-3: Expose sensitive receptors to substantial pollutant concentrations.
- AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

San Joaquin Valley Air Pollution Control District Thresholds

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

- Short-term Emissions—At the project level, construction impacts associated with proposed development projects would be considered potentially significant if project-generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or NO_x, 27 TPY of SO_x, or 15 TPY of PM₁₀ or PM_{2.5}. SJVAPCD-recommended significance thresholds are summarized in Table 4.
- Long-term Emissions—Operational impacts associated with the proposed project would be considered potentially significant if project generated emissions would exceed 100 TPY of CO, 10 TPY of ROG or NO_x, 27 TPY of SO_x, or 15 TPY of PM₁₀ or PM_{2.5}. SJVAPCD-recommended significance thresholds are summarized in Table 4.
- Conflict with or Obstruct Implementation of Applicable Air Quality Plan—Due to the region's non-attainment status for ozone, PM_{2.5}, and PM₁₀, if project-generated emissions of ozone precursor pollutants (i.e., ROG and NO_x) or PM would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans.
- Local Mobile-Source CO Concentrations—Local mobile source impacts associated with the proposed project would be considered potentially significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).
- Exposure to TACs would be considered potentially significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 20 in 1 million or would result in a Hazard Index greater than 1.
- Odor impacts associated with the proposed project would be considered potentially significant if the project has the potential to frequently expose members of the public to objectionable odors. Individual projects that would result in the creation of a new major odor source near existing

sensitive receptor(s), or the location of a new sensitive receptor(s) near an existing major source of odor may result in a potentially significant impact that requires further analysis. Major sources of potential odors and SJVAPCD-recommended screening distances are summarized in Table 5.

Table 4. SJVAPCD-Recommended CEQA Significance Thresholds

Pollutant	Construction Emissions (tons/year)	Operational Emissions (tons/year)
CO	100	100
NO _x	10	10
ROG	10	10
SO _x	27	27
PM ₁₀	15	15
PM _{2.5}	15	15

Source: SJVAPCD 2015

Table 5. SJVAPCD Screening Distances for Major Potential Odor Sources

Type of Facility	Screening Distance
Wastewater Treatment Facilities	2 Miles
Sanitary Landfill	1 Mile
Transfer Station	1 Mile
Composting 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 Processing Facility	1 Mile
Rendering Plant	1 Mile

Source: SJVAPCD 2015

In addition to the above thresholds, the SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of individual project impacts on localized ambient air quality conditions. Accordingly, individual projects would also be considered to result in a significant contribution to localized ambient air quality if on-site emissions or ROG, NO_x, PM₁₀, PM_{2.5}, CO, or SO₂ associated with either short-term construction or long-term operational activities would exceed a daily average of 100 pounds per day (lbs/day) for each of the pollutants evaluated (SJVAPCD 2015).

Methodology

Short-term emissions associated with construction activities are largely dependent on the type of development proposed, area of ground disturbance, number of buildings to be demolished, equipment required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

Long-term operational increases in emissions of criteria air pollutants associated with energy use and area sources (e.g., landscaping activities, use of consumer products) using the California Emissions Estimator Model (CalEEMod), version 2020.4.0 (CAPCOA 2020). Emissions associated with energy use and area sources were calculated based on default usage rates contained in the model for Fresno County. Mobile-source emissions were calculated based on projected increases in vehicle miles traveled (VMT) and emission factors for Fresno County derived from the Emission Factor 2021 (EMFAC2021) computer

program (ARB 2022c). Increases in vehicle miles traveled were derived from the traffic analysis prepared for the proposed GPU (Kittelsohn & Associates, 2022). Emissions modeling files are provided in Appendix A. Increased exposure of sensitive land uses to localized pollutant concentrations were qualitatively assessed.

Relevant Proposed GPU Goals and Policies

The 2042 General Plan includes a number of goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include the following:

Goals

- LU-1** Growth occurs logically and efficiently.
- LU-2** A wide range of housing types are available to accommodate all housing needs in the community.
- LU-3** Thriving commercial centers are located throughout the City.
- CH-1** Opportunities for physical activity, such as walking and biking, are integrated into the built environment.
- CH-2** Impacts from pollution are minimized through thoughtful and deliberate land use planning.
- MOB-1** Fowler's streets are a safe and enjoyable environment for pedestrians, cyclists, motorists, and people of all ages and abilities.
- MOB-2** The circulation system is safe, connected, and well-integrated with public transit and neighboring jurisdictions.
- MOB-3** Goods movement throughout the planning area is efficient and safe.
- MOB-4** The circulation system is adequately maintained.
- MOB-5** Safe, well-designed, multi-modal connections exist across SR 99, Golden State Boulevard, and the Union Pacific Railroad.

Policies

- LU-13** Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses. (Land Use Element, Policy 4.3.4)
Action Item LU-13a. Review and revise the Zoning Ordinance, as necessary, to reflect increased density allowances for planned unit developments at the City's discretion. Granting of additional density (not to exceed 25%) will depend on the developer's demonstration of the quality of design in such areas as access, circulation, building placement, parking, provision of open space, and architectural design and compatibility with the surrounding area. (Land Use Element, Policy 4.3.3)
- LU-18** Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development. (Land Use Element, Policy 4.3.7)
- LU-19** Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.
- LU-21** Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips. (Land Use Element, Policy 4.6.5)
- CDES-16** Locate parking areas within commercial projects in a manner that promotes pedestrian activity.
- CDES-18** New commercial projects are designed in such a way that they enhance Fowler's character.

Action Item CDES-18a includes adoption of commercial standards in consideration of design principles that support the design of commercial sites with human scale and pedestrian amenities.

- CDES-31** Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.
- CH-1** Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.
- CH-2** Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.
- CH-3** Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.
- CH-4** Require Street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.
- CH-6** Evaluate land use decisions for consistency with siting recommendations as outlined in ARB's Land Use Compatibility Handbook.
- CH-7** Consider the use of solid and vegetative barriers as a means for reducing near-roadway air pollution concentrations along SR 99 and local expressways.
- OS-10** The City shall implement the community trail network.
- OS-11** Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.
- OS-12** Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.
- MOB-4** Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.
- MOB-5** Encourage a Level of Service (LOS) "C" throughout the local circulation network. LOS "D" may be allowed during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS "D" may also be allowed along streets with the potential for a high level of pedestrian and bicyclist activity. LOS "E" may be permitted during peak hour use of certain road intersections and segments where pedestrian and bicycle activity is prioritized.
- MOB-6** Use Intelligent Transportation Systems (ITS) to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.
- MOB-9** New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
- MOB-10** Develop a multi-purpose recreational bikeway network and support facilities.
- MOB-11** Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
- MOB-12** Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
- MOB-13** Coordinate with Caltrans, FCOG, Fresno County Rural Transit Agency (FCRTA), and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
- MOB-14** Identify opportunities for a multi-modal transit hub within the City.
- MOB-15** Support the development of paratransit service programs.
- MOB-16** Support transit operator efforts to maximize return for short- and long-range transit needs.

- MOB-17** Incorporate the potential for public transit service expansion throughout the City.
- MOB-18** Improve route options and access for public transit City-wide, specifically west of SR 99.
- MOB-19** Designated truck routes for use by heavy commercial and industrial traffic shall include Golden State Boulevard, Manning Avenue, and Temperance Avenue.
- MOB-20** Encourage the efficient movement of goods.
- MOB-21** Facilitate goods movement and delivery through internal site design of commercial and industrial areas.
- MOB-22** Ensure truck access points and loading facilities are designed to reduce conflict with sensitive land uses.

IMPACTS AND MITIGATION MEASURES

Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Long-term emissions under the proposed GPU would be associated with mobile sources (e.g., vehicle trips) and stationary sources (e.g., electricity and natural gas). Emissions associated with individual projects, depending on project type and size, could exceed project-specific thresholds established by the SJVAPCD. However, such projects will be required to undergo independent, project-level CEQA review and determine whether a project is consistent with all applicable air quality plans.

The most recently adopted air quality attainment plans in the San Joaquin Valley Air Basin are the SJVAPCD 2016 Ozone Plan, the 2018 PM_{2.5} Plan, the 2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-hour Ozone Standard, and the 2004 Revisions to the Carbon Monoxide Maintenance Plan. These SJVAPCD Air Quality Attainment Plans contain measures to promote air quality elements in county and city general plans as one of the primary indirect source programs.

Included in the proposed 2042 General Plan are a list of policies and actions that are aimed at improving air quality. These policies and actions help reduce the VMT per capita and support sustainable development by helping to maintaining a balanced ratio of jobs to housing units, placing an emphasis on connectivity with the community, multi-modal connectivity, and improved public transit throughout Fowler. This mitigates the air quality issues targeted by applicable air quality plans.

If the General Plan would conflict or obstruct the implementation of any air quality plan control measure, it would be inconsistent with the applicable air quality plans. However, the proposed General Plan does not conflict or obstruct the implementation of any quality plan control measure and therefore, is consistent with the applicable air quality plans. All future development and infrastructure projects within the Planning Area would be subject to the General Plan goals, policies, and actions, which were adopted to reduce emissions and air quality impacts.

VMT for the Planning Area under existing (year 2019) conditions and future year 2042 conditions is summarized in Table 6. As shown, VMT for the City of Fowler under existing conditions is 247,894 miles. Under future year 2042 GPU build out, the projected VMT would be 1,240,395. In comparison to existing conditions, VMT would increase by approximately 457,846 miles traveled.

Table 6. Projected VMT Increase

Existing VMT	247,894
Future VMT	1,240,395
VMT Increase Compared to Existing:	992,501
Percent increase in VMT:	400%
<i>Source: Kittelson & Associates, 2022</i>	

Population for the Planning Area under existing (year 2019) conditions and future year 2042 conditions is summarized in Table 7. As shown, the City of Fowler has an existing estimated population of approximately 6,808. At full buildout of the GPU the City’s population is estimated to total of 48,404, an increase in population of approximately 41,596 new residents.

Table 7. Projected Population Growth

Existing Population	6,808
Future Population	48,404
Population Increase Compared to Existing:	41,596
Percent increase in Population:	611%
<i>Source: Kittelson & Associates, 2022</i>	

Implementation of the proposed GPU would result in an increase in the population of approximately 611 percent, whereas, VMT would increase by approximately 336 percent. The estimated increase in VMT associated with the proposed GPU would be lower than the estimated increase in population growth. As a result, proposed GPU would not be anticipated to result in overall VMT increases on a per capita basis.

Although implementation of the proposed 2042 GPU would not be anticipated to result in a substantial increase in mobile-source emissions, when evaluated on a per capita basis, future development would be projected to result in significant increases in emissions. In addition to increases in mobile-source emissions, additional sources of emissions would include area sources, and energy use. As discussed in Impact AQ-2, emissions associated with area sources would be predominantly associated with the use of consumer products (e.g., cleaning supplies) for which the City and SJVAPCD have little to no control over. Future development would be required to comply with SJVAPCD and state requirements, including (but not limited to) SJVAPCD Rule 9510 and Title 24 energy-efficiency regulations, which would help to reduce overall emissions associated with individual development projects. However, given the regions current nonattainment status and uncertainty regarding the effectiveness of future mitigation for individual development projects, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The proposed GPU includes a number of goals and policies that would reduce air contaminant emissions, primarily by promoting alternatives to personal vehicle use. Some of the more relevant goals include GPU goals: LU-1, LU-2, LU-3, CH-1, CH-2, MOB-1, MOB-2, MOB-3, MOB-4, MOB-5. Some of the more relevant GPU policies include LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, OS-10, OS-11, OS-12, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18. These goals and policies would promote the implementation of the Transportation Control Measures identified in the SJVAPCD 2016 Ozone Plan and 2018 PM_{2.5} Plan and would help to reduce project-generated emissions.

Mitigation Measures

- Implement Mitigation Measure AQ-1 (refer to Impact AQ-2).

Implementation of Mitigation Measure AQ-1 would reduce emissions associated with future development projects. However, given the regions current nonattainment status and uncertainty regarding the effectiveness of future mitigation for individual development projects, this impact would be considered **significant and unavoidable**.

Impact AQ-2: Would the project 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 proposed 2042 GPU consists of developing parcels that are currently vacant, or under-developed and have the potential for enhanced or further development. Future residential and non-residential development within the City of Fowler’s sphere of Influence, and associated increases in daily VMT are summarized in Table 8 and Table 9, respectively. As noted in Table 8, future development within the planning area would result in approximately 12,494 additional dwelling units. Daily VMT associated with future residential development would total approximately 457,846 miles. As noted in Table 9, future non-residential development would result in an increase of approximately 18,243,344 square feet and 383,368 miles traveled per day.

Table 8. Summary of Residential Land Uses within Planning Area

Land Use	Dwelling Units 2019	Daily VMT 2019	Dwelling Units 2042	Daily VMT 2042
Residential Low Density	391		2,275	
Residential Medium Low Density	636		4,122	
Residential Medium Density	1,214		4,752	
Residential Medium High Density	0		2,193	
Residential High Density	775		1,449	
Mixed- Community Commercial	208		927	
Total Residential:	3,224	136,275 VMT	15,718	594,121
Increase Compared to Existing:			12,494	457,846
<i>Kittelson & Associates, Fowler Land Use Assumptions 2022</i>				
<i>Kittelson & Associates, Fowler VMT Impact Assessment 2022</i>				

Table 9. Summary of Non-Residential Land Uses within Planning Area

Land Use	Acres 2019	Daily VMT 2019	Acres 2042	Daily VMT 2042
Commercial Neighborhood	1.91		5.68	
Commercial Community	9.54		21.26	
Commercial General	19.96		41.92	
Industrial Light	33.01		178.70	
Industrial Heavy	100.42		331.54	
Public Park	15.80		55.03	
Public Facility	8.77		12.33	
Total Non-Residential	189.41	118,857	646.46	502,225
Increase Compared to Existing:			457.05	383,368
<i>Kittelson & Associates, Fowler Land Use Assumptions 2022</i>				
<i>Kittelson & Associates, Fowler VMT Impact Assessment 2022</i>				

Short-Term Air Quality Impacts

Construction activity associated with the proposed 2042 GPU would cause temporary emissions of various air pollutants from demolition, grading, construction worker travel, hauling of construction supplies, fuel combustion by equipment, and architectural coating would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The extent of daily emissions, particularly ROG and NO_x emissions, generated by construction equipment, would depend on the equipment used and the hours of operation for each project. The extent of PM_{2.5} and PM₁₀ emissions would depend upon the amount of disturbed soils, the length of disturbance time, whether existing structures are demolished, whether excavation is involved, and whether transporting excavated materials offsite is necessary. Dust emissions can lead to both nuisance and health impacts.

The SJVAPCD has not established plan-level significance thresholds for construction air pollutant emissions. At this time, most projects facilitated by the proposed 2042 GPU do not have sufficient detail to allow project-level analysis. As a result, short-term air quality impacts would be considered **potentially significant**.

Long-Term Air Quality Impacts

Long-term operational emissions associated with future development were quantified using the CalEEMod2020.4.0 based on the estimated increases in residential and non-residential development (refer to Table 8 and Table 9, respectively). Estimated annual emissions associated with the proposed 2042 GPU are summarized in Table 10. Emissions modeling was conducted for annual operational conditions under existing year 2019 and future GPU buildout year 2042 conditions. As noted in Table 10, annual emissions under existing conditions would total approximately 85.2 tons/year of ROG, 80.2 tons/year of NO_x, 232.7 tons/year of CO, 4.7 tons/year of PM₁₀, and 2.9 tons/year of PM_{2.5}. While emissions under the General Plan buildout in 2042 would total approximately 298.4 tons/year of ROG, 163.1 tons/year of NO_x, 506.3 tons/year of CO, 18.9 tons/year of PM₁₀, and 9.8 tons/year of PM_{2.5}.

As noted in Table 10, overall increases in emissions associated with future development would be largely associated with area and mobile sources. Under the newly adopted Advanced Clean Car II rule, mobile emissions will likely be reduced as adoption of EVs increases. Emissions associated with area sources would be predominantly associated with the use of consumer products (e.g., cleaning supplies). To a lesser extent, other area source emissions would be associated with the use of natural gas-fired appliances, landscape maintenance equipment, and architectural coatings. The recently adopted Small Off-Road Engine regulation will likely decrease emissions from landscape maintenance equipment under the GPU, however its effects could not be quantified for modeling. As discussed previously, the SJVAPCD has not established quantitative plan-level significance thresholds for operational emissions. At this time, there is insufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts. For this reason, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to reduce criteria pollutant emissions, energy demands, and vehicle miles traveled. Some of the more relevant GPU policies include LU-21, CDS-31, CH1, CH-6, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18.

Table 10. Summary of Operational Emissions Within Planning Area					
Source	Emissions (tons/year) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Existing Year 2019 Conditions					
Area ²	60.0	1.5	24.6	0.2	0.2
Energy ²	1.2	10.3	7.3	0.8	0.8
Mobile ³	24.0	68.4	200.8	3.7	1.9
Total:	85.2	80.2	232.7	4.7	2.9
Proposed Year 2042 GPU Buildout					
Area ²	250.6	7.2	118.9	1.1	1.1
Energy ²	4.7	41.2	27.9	3.2	3.2
Mobile ³	43.1	114.7	359.5	14.6	5.5
Total:	298.4	163.1	506.3	18.9	9.8
Net Increase Compared to Existing Conditions:	213.3	82.9	273.6	14.2	6.9
SJVAPCD Significance Thresholds ⁴ :	10	10	100	15	15
<p>1. Totals may not sum due to rounding.</p> <p>2. Emissions calculated using CalEEMod2020.4.0. Area source emissions are predominantly associated with the use of consumer products (e.g., cleaning supplies). Other area sources include landscape maintenance equipment, natural gas-fired appliances, natural gas hearths, and architectural coatings.</p> <p>3. Emissions calculated based on data derived from the VMT analysis prepared for this project and emission factors for Fresno County derived from EMFAC2021. Annual emissions of SO_x associated with typical development are anticipated to be negligible and were not included.</p> <p>4. SJVAPCD Significance Thresholds apply to individual projects and are presented for informational purposes only. Refer to Appendix A for emissions modeling assumptions and results.</p>					

Mitigation Measures

In addition to Greenhouse Gas Mitigation Measures GHG-1 and GHG-2, the following measures shall be implemented to reduce project-generated emissions of air pollutants:

MM AQ-1: Consider impacts on regional air quality when reviewing proposals for new development. Short-term construction and long-term operational quality impacts shall be evaluated in accordance with SJVAPCD-recommended guidance.

Significance After Mitigation

As noted above, the General Plan Update includes various measures to reduce energy demand and vehicle miles traveled, including the promotion of alternative means of transportation. The promotion of alternatives to automotive transportation can help to reduce local and regional mobile-source emissions and energy consumption. Mitigation Measure AQ-1 would require individual projects to evaluate regional air quality impacts resulting from construction and operational emissions. Potentially significant impacts would require implementation of additional project-specific mitigation measures to further reduce project-generated emissions and associated air quality impacts. However, given the regions current nonattainment status and uncertainty regarding the effectiveness of future mitigation for individual development projects, short-term and long-term air quality impacts would be considered **significant and unavoidable**.

Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors as defined by the SJVAPCD include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The 2042 General Plan would include the development of land uses considered to be sensitive receptors, as well as new development near existing sensitive receptors. Activities associated with implementation of the proposed General Plan could potentially include short-term, construction sources of TACs and long-term, operational sources of TACs, including stationary and mobile sources. TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health and PM_{2.5} can cause a wide range of health effects.

Short-Term Construction Emissions

Construction projects can result in short-term increases of TACs, as well as emissions of airborne fugitive dust. Emissions of DPM emitted from construction vehicles is of particular concern. Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest tightness, wheezing, and bronchitis. However, various other TACs from diesel exhaust also contribute to both cancer and non-cancer health risks. Construction-generated emissions of PM_{2.5} can also contribute to significant health impacts, particularly among the more sensitive population groups (i.e., children, elderly, etc.).

The amount of TACs generated during construction of individual projects would vary depending on numerous factors, including the size of the development, the type, age and number of pieces of equipment required, and hours of use. Furthermore, it is anticipated that multiple construction projects could occur simultaneously within a given year and within a given area. Without detailed construction information (i.e., construction schedules, demolition, grading, excavation, and construction requirements), construction-generated emissions of TACs for individual projects cannot be quantified at this time. As a result, this impact would be considered **potentially significant**.

Proposed Mitigation Measures

- Implement Mitigation Measure AQ-1 (refer to Impact AQ-2)

Significance After Mitigation

Mitigation Measure AQ-1 would require future development projects to be evaluated in accordance with SJVAPCD's recommended guidance. In accordance with SJVAPCD's guidance, construction projects would be required to incorporate economically feasible construction best management practices as conditions of approval. However, even with adoption of MM AQ-1, it is conceivable that some development projects may be large enough or close enough to a sensitive receptor that the project-level significance thresholds would be exceeded. In the event that a significant impact is identified for an individual project, SJVAPCD-recommended mitigation measures would be required to reduce project-related impacts. However, even with mitigation, it may not be possible to reduce potential emissions of TACS and all health-related risks to nearby receptors to levels below the SJVAPCD thresholds. As a result, this impact would be considered **significant and unavoidable**.

Long-Term Exposure

Toxic Air Contaminants

Development of future land uses may include potential stationary sources of TACs, such as diesel-powered emergency-use power generators. The type and level of TAC emissions emitted would depend upon the nature of the land use and the specific methods and operations that involve toxic air emissions. Pursuant to SJVAPCD rules and regulations, including SJVAPCD Rule 2201 (New Source Review Rule), new and modified stationary sources of emissions are required to mitigate emissions using best available control technology and to offset emissions when above thresholds

In addition to the long-term exposure to stationary emission sources, new land uses may also be exposed to emissions from mobile sources. Major roadways of potential concern with regard to mobile-source TACs typically include roadways with average-daily traffic (ADT) volumes of 100,000 or more. Within the planning area, State Route 99 (SR-99) is considered the primary source of mobile-source TAC emissions. Average-daily traffic volumes along SR-99 located within the city range from approximately 94,000 to approximately 99,000 (Peters Engineering Group 2022).

The proposed General Plan would include opportunities for new development and redevelopment near SR-99. In addition, depending on the type of future development, some projects contribute substantially to existing vehicle traffic on area roadways, particularly diesel-fueled heavy-duty trucks associated with industrial development. Such development could result in the exposure of sensitive receptors to mobile-sources of TACs. Given that future development could potentially result in increased exposure of sensitive land uses to TACs, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

Proposed 2042 GPU Policy CH 6 would require that future land uses be evaluated for consistency with siting recommendations as outlined in ARB's Land Use Compatibility Handbook (refer to Table 1). In addition, solid or vegetative barriers would be considered for reducing near-road air pollutant concentrations for development located along SR-99 and major local expressways.

Proposed Mitigation Measure

MM AQ-2a: Consider the localized air quality impacts on surrounding land uses, including emissions of toxic air contaminants and odors, when reviewing proposals for new development.

Significance After Mitigation

With implementation of proposed GPU policies proposed mitigation measure and compliance with applicable ARB and SJVAPCD rules and regulations would reduce the potential exposure of sensitive receptors to TACs. However, even with mitigation, it may not be possible to reduce potential emissions of TACS and all cumulative health-related risks to nearby receptors to levels below the SJVAPCD thresholds. As a result, this impact would be considered **significant and unavoidable**.

Mobile-Source Carbon Monoxide

Buildout of the 2042 General Plan would result in new development or redevelopment that would generate additional vehicle trips on area roadways. Areas with high vehicle density, such as congested

intersections, have the potential to create concentrations of CO (“CO hotspots”) and could potentially expose sensitive receptors to harmful levels of pollution.

Localized CO concentrations are the result of the volume of cars along a road and the level of emissions generated by vehicles, rather than the flow of traffic. Vehicle CO emissions have declined over time due to stringent State standards for vehicle emissions and would continue to decline as more stringent standards are put in place. However, CO hotspots can occur if large numbers of vehicles are concentrated on a roadway. This becomes a concern when the LOS of a given roadway is negatively affected by a project enough to be classified as LOS E or F. According to the traffic analysis, 3 roadway segments are expected to operate at LOS E or F under 2042 General Plan buildout conditions. Therefore, this impact would be considered **potentially significant**.

General Plan Policies that Provide Mitigation

Proposed 2042 GPU Policy MOB 5 would require future development to assess impacts to the local circulation network and to encourage achievement of LOS C, where possible. Proposed 2042 GPU Policy MOB 6 would also require use of ITS to improve the safety and performance of the circulation network, consistent with the Fresno County ITS Strategic Plan.

Proposed Mitigation Measure

MM AQ-2b: The City shall require new development projects to demonstrate LOS reductions for any project-associated intersection to an LOS E or F, or worsen an existing LOS F. If this requirement is not met, a project-specific CO Hotspot analysis shall be conducted. If the CO analysis shows levels above current applicable ambient air quality standards, the project proponent shall be required to make intersection improvements to reduce CO emissions at the intersection, alter the project to reduce the impact, or implement other measures sufficient to demonstrate a reduction in predicted localized CO concentrations to below applicable ambient air quality standards.

Significance After Mitigation

Implementation of the above recommended mitigation measure would require the review of proposed development projects to ensure that future development projects would not result in an increase in localized CO concentrations that would adversely impact nearby sensitive receptors. With implementation of proposed General Plan Update policies, the proposed mitigation measure, this impact would be considered **less than significant**.

Impact AQ-4: Would the General Plan result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Project-specific analysis would be assessed for new development planned for in the 2042 GPU.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. As shown in Table 5, the SJVAPCD has a Screening Levels for Potential Odor Sources depending on the distance to a sensitive receiver. Land uses that typically produce objectionable odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities (ARB 2005; SJVAPCD 2015).

The residential uses in the 2042 General Plan are not considered odor-generating land uses. At this time, the projects facilitated by the 2042 General Plan do not have sufficient detail to allow project-level analysis and thus it would be speculative to determine adverse odor affects from the 2042 General Plan. Therefore, odor impacts as a result of the proposed general plan would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

No proposed 2042 GPU policies have been identified that would reduce this impact.

Mitigation Measures

Implement Mitigation Measure AQ-2a (refer to Impact AQ-3).

Significance After Mitigation

Implementation of proposed Mitigation Measure AQ-2a and compliance with applicable SJVAPCD rules and regulations would reduce the potential exposure of sensitive receptors to odors. However, even with mitigation, it may not be possible to reduce potential emissions of odors and related impacts to a less-than-significant level in all instances. As a result, this impact would be considered **significant and unavoidable**.

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APPENDIX A

Emissions Modeling

Emissions - Year 2019

LAND USE	Total Annual VMT *Per Day*
Fowler GP Per Capita 2019	247,894
Fowler GP Per Employee 2019	
Total	247,894

	VMT	Gallons/Mile*	Gallons	BTU/gallon**	BTU	MMBTU	Emissions (Tons/Day/Vehicle Type)								
							ROG	TOG	CO	Nox	PM 10	PM 2.5	CO2	CH4	N2O
Diesel	28305	0.14045320	3975.46364365	137381	546153171	546	0.0058666	0.0066786	0.0277245	0.1366769	0.0057296	0.0034836	44.5433711	0.0000000	0.0009848
Gasoline	216396	0.04654314	10071.75245011	120286	1211490815	1211	0.0599337	0.0648003	0.5216062	0.0506681	0.0043522	0.0015845	94.0741932	0.0000000	0.0001798
Plug-in Hybrid	2056	0.01763230	36.25124929	120286	4360518	4	0.0000803	0.0000849	0.0007959	0.0000299	0.0000287	0.0000097	0.3434475	0.0000000	0.0000001
Electric	1137	0.00000000	0.00000000	0	0	0	0	0	0	0	0.0000155	0.0000044	0	0	0
Total Emissions (lbs per Day)							131.7611628	143.1276731	1100.2531916	374.7496196	20.2520181	10.1643799	277922.0236703	0.0000051	2.3294299
Total Emissions (Tons per Day)							0.0658806	0.0715638	0.5501266	0.1873748	0.0101260	0.0050822	138.9610118	0.0000000	0.0011647
Total Emissions (lbs per Year)							48092.82442	52241.60068	401592.4149	136783.6112	7391.986622	3709.998662	101441538.6	0.001877882	850.2419185
Total Emissions (Tons per Year)							24.04641221	26.12080034	200.7962075	68.39180558	3.695993311	1.854999331	50720.76932	9.38941E-07	0.425120959

*Gallons per mile based on year 2019 conditions for Fresno County. Derived from Emfac2021 (v1.0.2) Emissions Inventory.

**Energy coefficient derived from US EIA.

https://www.eia.gov/energyexplained/index.php?page=about_energy_units

MTCO2e			
GHG	Tons/year	GWP	MTCO2e
CO2	50720.77	1	50720.7693
CH4	9.39E-07	25	2.3474E-05
N2O	0.425121	298	126.686046
Total			50847.4554

Emissions - Year 2042

LAND USE	Total Annual VMT *Per Day*
Fowler GP Per Capita 2042	1,240,395
Fowler GP Per Employee 2042	
Total	1,240,395

	VMT	Gallons/Mile*	Gallons	BTU/gallon**	BTU	MMBTU	Emissions (Tons/Day/Vehicle Type)								
							ROG	TOG	CO	Nox	PM 10	PM 2.5	CO2	CH4	N2O
Diesel	130628	0.12344265	16125.01240872	137381	2215270330	2215	0.0082866	0.0094336	0.0936796	0.2603830	0.0190400	0.0083505	180.5114062	0.0000000	0.0035107
Gasoline	954456	0.03204408	30584.67220509	120286	3678907881	3679	0.1077523	0.1122208	0.8787340	0.0533963	0.0169174	0.0054642	290.0430024	0.0000000	0.0002433
Plug-in Hybrid	35304	0.01355968	478.71346452	120286	57582528	58	0.0021133	0.0021988	0.0124261	0.0005756	0.0004703	0.0001401	4.5397737	0.0000000	0.0000013
Electric	120007	0.00000000	0.00000000	0	0	0	0	0	0	0	0.0035298	0.0010843	0	0	0
Total Emissions (lbs per Day)							236.3044104	247.7064094	1969.6793920	628.7098193	79.9153079	30.0782044	950188.3646237	0.0000013	7.5105822
Total Emissions (Tons per Day)							0.1181522	0.1238532	0.9848397	0.3143549	0.0399577	0.0150391	475.0941823	0.0000000	0.0037553
Total Emissions (lbs per Year)							86251.10979	90412.83944	718932.9781	229479.084	29169.08739	10978.54459	346818753.1	0.000488043	2741.362513
Total Emissions (Tons per Year)							43.12555489	45.20641972	359.466489	114.739542	14.58454369	5.489272295	173409.3765	2.44022E-07	1.370681256

*Gallons per mile based on year 2042 conditions for Fresno County. Derived from Emfac2021 (v1.0.2) Emissions Inventory.

**Energy coefficient derived from US EIA.

https://www.eia.gov/energyexplained/index.php?page=about_energy_units

MTCO2e			
GHG	Tons/year	GWP	MTCO2e
CO2	173409.3765	1	173409.3765
CH4	2.44022E-07	25	6.10054E-06
N2O	1.370681256	298	408.4630144
Total			173817.8396

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

**Fowler 2019
Fresno County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	869.37	1000sqft	19.96	869,370.00	0
Elementary School	381.98	1000sqft	8.77	381,978.00	0
General Heavy Industry	4,374.12	1000sqft	100.42	4,374,121.00	0
General Light Industry	1,438.00	1000sqft	33.01	1,438,003.00	0
City Park	15.80	Acre	15.80	688,248.00	0
Apartments Low Rise	983.00	Dwelling Unit	61.44	983,000.00	2811
Single Family Housing	2,241.00	Dwelling Unit	727.60	4,033,800.00	6409
Regional Shopping Center	415.53	1000sqft	9.54	415,528.00	0
Strip Mall	83.11	1000sqft	1.91	83,112.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2019
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MW hr)	203.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - ..
 Construction Phase - No Construction
 Grading - No Construction

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

Architectural Coating - No construction

Vehicle Trips - Mobile calculated separately

Woodstoves -

Area Coating -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	3,781,056.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	11,343,168.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,386,340.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,159,020.00	0.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	1,100.00	0.00
tblConstructionPhase	NumDays	15,500.00	0.00
tblConstructionPhase	NumDays	1,000.00	0.00
tblConstructionPhase	NumDays	1,550.00	0.00
tblConstructionPhase	NumDays	1,100.00	0.00
tblConstructionPhase	NumDays	600.00	0.00
tblLandUse	LandUseSquareFeet	381,980.00	381,978.00
tblLandUse	LandUseSquareFeet	4,374,120.00	4,374,121.00
tblLandUse	LandUseSquareFeet	1,438,000.00	1,438,003.00
tblLandUse	LandUseSquareFeet	415,530.00	415,528.00
tblLandUse	LandUseSquareFeet	83,110.00	83,112.00
tblSolidWaste	SolidWasteGenerationRate	1.36	1.48
tblTripsAndVMT	VendorTripNumber	1,697.00	1,479.00
tblTripsAndVMT	WorkerTripNumber	4,843.00	4,285.00
tblTripsAndVMT	WorkerTripNumber	969.00	857.00

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tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	46.12	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	21.10	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	37.75	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00

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tblWater	OutdoorWaterUseRate	18,825,405.32	20,505,394.03
tblWoodstoves	NumberCatalytic	61.44	0.00
tblWoodstoves	NumberCatalytic	727.60	0.00
tblWoodstoves	NumberNoncatalytic	61.44	0.00
tblWoodstoves	NumberNoncatalytic	727.60	0.00

2.0 Emissions Summary

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

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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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)

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

		Highest	
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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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Energy	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	19,375.5958	19,375.5958	1.5089	0.3654	19,522.2063
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	2,394.6012	0.0000	2,394.6012	141.5169	0.0000	5,932.5230
Water						0.0000	0.0000		0.0000	0.0000	563.0716	988.9195	1,551.9911	57.9928	1.3850	3,414.5278
Total	61.1358	11.7590	31.9856	0.0718	0.0000	1.0254	1.0254	0.0000	1.0254	1.0254	2,957.6728	21,800.4146	24,758.0873	201.0841	1.7760	30,314.4248

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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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Energy	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	19,375.5958	19,375.5958	1.5089	0.3654	19,522.2063
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	2,394.6012	0.0000	2,394.6012	141.5169	0.0000	5,932.5230
Water						0.0000	0.0000		0.0000	0.0000	563.0716	988.9195	1,551.9911	57.9928	1.3850	3,414.5278
Total	61.1358	11.7590	31.9856	0.0718	0.0000	1.0254	1.0254	0.0000	1.0254	1.0254	2,957.6728	21,800.4146	24,758.0873	201.0841	1.7760	30,314.4248

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	8/22/2022	8/21/2022	5	0	
2	Site Preparation	Site Preparation	8/23/2022	8/22/2022	5	0	
3	Grading	Grading	8/24/2022	8/23/2022	5	0	

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

4	Building Construction	Building Construction	8/25/2022	8/24/2022	5	0
5	Paving	Paving	8/26/2022	8/25/2022	5	0
6	Architectural Coating	Architectural Coating	8/27/2022	8/26/2022	5	0

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
General Heavy Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Low Rise	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

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

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
City Park	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Elementary School	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
General Heavy Industry	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
General Light Industry	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Government Office Building	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Regional Shopping Center	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Single Family Housing	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Strip Mall	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,975.9881	7,975.9881	1.2904	0.1564	8,054.8565
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,975.9881	7,975.9881	1.2904	0.1564	8,054.8565
NaturalGas Mitigated	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499
NaturalGas Unmitigated	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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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					
Apartments Low Rise	1.3415e+007	0.0723	0.6181	0.2630	3.9500e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.8766	715.8766	0.0137	0.0131	720.1307
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	9.50361e+006	0.0512	0.4659	0.3913	2.8000e-003		0.0354	0.0354		0.0354	0.0354	0.0000	507.1490	507.1490	9.7200e-003	9.3000e-003	510.1627
General Heavy Industry	9.05443e+007	0.4882	4.4385	3.7283	0.0266		0.3373	0.3373		0.3373	0.3373	0.0000	4,831.7889	4,831.7889	0.0926	0.0886	4,860.5018
General Light Industry	2.97667e+007	0.1605	1.4592	1.2257	8.7500e-003		0.1109	0.1109		0.1109	0.1109	0.0000	1,588.4625	1,588.4625	0.0305	0.0291	1,597.9019
Government Office Building	1.12323e+007	0.0606	0.5506	0.4625	3.3000e-003		0.0419	0.0419		0.0419	0.0419	0.0000	599.3962	599.3962	0.0115	0.0110	602.9581
Regional Shopping Center	4.40875e+006	0.0238	0.2161	0.1815	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2678	235.2678	4.5100e-003	4.3100e-003	236.6659
Single Family Housing	5.38681e+007	0.2905	2.4822	1.0562	0.0158		0.2007	0.2007		0.2007	0.2007	0.0000	2,874.6096	2,874.6096	0.0551	0.0527	2,891.6920
Strip Mall	881818	4.7500e-003	0.0432	0.0363	2.6000e-004		3.2900e-003	3.2900e-003		3.2900e-003	3.2900e-003	0.0000	47.0572	47.0572	9.0000e-004	8.6000e-004	47.3368
Total		1.1519	10.2737	7.3449	0.0628		0.7959	0.7959		0.7959	0.7959	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.3415e+007	0.0723	0.6181	0.2630	3.9500e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.8766	715.8766	0.0137	0.0131	720.1307
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	9.50361e+006	0.0512	0.4659	0.3913	2.8000e-003		0.0354	0.0354		0.0354	0.0354	0.0000	507.1490	507.1490	9.7200e-003	9.3000e-003	510.1627
General Heavy Industry	9.05443e+007	0.4882	4.4385	3.7283	0.0266		0.3373	0.3373		0.3373	0.3373	0.0000	4,831.7889	4,831.7889	0.0926	0.0886	4,860.5018
General Light Industry	2.97667e+007	0.1605	1.4592	1.2257	8.7500e-003		0.1109	0.1109		0.1109	0.1109	0.0000	1,588.4625	1,588.4625	0.0305	0.0291	1,597.9019
Government Office Building	1.12323e+007	0.0606	0.5506	0.4625	3.3000e-003		0.0419	0.0419		0.0419	0.0419	0.0000	599.3962	599.3962	0.0115	0.0110	602.9581
Regional Shopping Center	4.40875e+006	0.0238	0.2161	0.1815	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2678	235.2678	4.5100e-003	4.3100e-003	236.6659
Single Family Housing	5.38681e+007	0.2905	2.4822	1.0562	0.0158		0.2007	0.2007		0.2007	0.2007	0.0000	2,874.6096	2,874.6096	0.0551	0.0527	2,891.6920
Strip Mall	881818	4.7500e-003	0.0432	0.0363	2.6000e-004		3.2900e-003	3.2900e-003		3.2900e-003	3.2900e-003	0.0000	47.0572	47.0572	9.0000e-004	8.6000e-004	47.3368
Total		1.1519	10.2737	7.3449	0.0628		0.7959	0.7959		0.7959	0.7959	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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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			
Apartments Low Rise	4.0608e+006	375.7208	0.0608	7.3700e-003	379.4360
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	2.59745e+006	240.3259	0.0389	4.7100e-003	242.7023
General Heavy Industry	3.76612e+007	3,484.5546	0.5637	0.0683	3,519.0106
General Light Industry	1.23812e+007	1,145.5559	0.1853	0.0225	1,156.8834
Government Office Building	7.68523e+006	711.0665	0.1150	0.0139	718.0977
Regional Shopping Center	3.29098e+006	304.4940	0.0493	5.9700e-003	307.5050
Single Family Housing	1.78696e+007	1,653.3669	0.2675	0.0324	1,669.7158
Strip Mall	658247	60.9035	9.8500e-003	1.1900e-003	61.5057
Total		7,975.9881	1.2904	0.1564	8,054.8564

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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

Mitigated

Land Use	Electricity Use kWh/yr	Total CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Apartments Low Rise	4.0608e+006	375.7208	0.0608	7.3700e-003	379.4360
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	2.59745e+006	240.3259	0.0389	4.7100e-003	242.7023
General Heavy Industry	3.76612e+007	3,484.5546	0.5637	0.0683	3,519.0106
General Light Industry	1.23812e+007	1,145.5559	0.1853	0.0225	1,156.8834
Government Office Building	7.68523e+006	711.0665	0.1150	0.0139	718.0977
Regional Shopping Center	3.29098e+006	304.4940	0.0493	5.9700e-003	307.5050
Single Family Housing	1.78696e+007	1,653.3669	0.2675	0.0324	1,669.7158
Strip Mall	658247	60.9035	9.8500e-003	1.1900e-003	61.5057
Total		7,975.9881	1.2904	0.1564	8,054.8564

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

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

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Unmitigated	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

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

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	9.9663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.1334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1411	1.2060	0.5132	7.7000e-003		0.0975	0.0975		0.0975	0.0975	0.0000	1,396.6606	1,396.6606	0.0268	0.0256	1,404.9603
Landscaping	0.7431	0.2793	24.1274	1.2700e-003		0.1321	0.1321		0.1321	0.1321	0.0000	39.2386	39.2386	0.0388	0.0000	40.2074
Total	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

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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	9.9663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.1334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1411	1.2060	0.5132	7.7000e-003		0.0975	0.0975		0.0975	0.0975	0.0000	1,396.6606	1,396.6606	0.0268	0.0256	1,404.9603
Landscaping	0.7431	0.2793	24.1274	1.2700e-003		0.1321	0.1321		0.1321	0.1321	0.0000	39.2386	39.2386	0.0388	0.0000	40.2074
Total	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

7.0 Water Detail

7.1 Mitigation Measures Water

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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	1,551.991 1	57.9928	1.3850	3,414.527 8
Unmitigated	1,551.991 1	57.9928	1.3850	3,414.527 8

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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

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	64.0464 / 40.3771	65.4590	2.0943	0.0502	132.7639
City Park	0 / 20.5054	6.6403	1.0700e-003	1.3000e-004	6.7060
Elementary School	11.0762 / 28.4818	18.2826	0.3633	8.8100e-003	29.9912
General Heavy Industry	1011.52 / 0	827.3183	33.0422	0.7882	1,888.2541
General Light Industry	332.538 / 0	271.9824	10.8627	0.2591	620.7670
Government Office Building	172.709 / 105.854	175.5375	5.6473	0.1353	357.0234
Regional Shopping Center	30.7794 / 18.8648	31.2835	1.0064	0.0241	63.6271
Single Family Housing	146.01 / 92.0499	149.2305	4.7744	0.1144	302.6692
Strip Mall	6.15617 / 3.77313	6.2570	0.2013	4.8200e-003	12.7260
Total		1,551.9911	57.9929	1.3849	3,414.5278

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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			
Apartments Low Rise	64.0464 / 40.3771	65.4590	2.0943	0.0502	132.7639
City Park	0 / 20.5054	6.6403	1.0700e-003	1.3000e-004	6.7060
Elementary School	11.0762 / 28.4818	18.2826	0.3633	8.8100e-003	29.9912
General Heavy Industry	1011.52 / 0	827.3183	33.0422	0.7882	1,888.2541
General Light Industry	332.538 / 0	271.9824	10.8627	0.2591	620.7670
Government Office Building	172.709 / 105.854	175.5375	5.6473	0.1353	357.0234
Regional Shopping Center	30.7794 / 18.8648	31.2835	1.0064	0.0241	63.6271
Single Family Housing	146.01 / 92.0499	149.2305	4.7744	0.1144	302.6692
Strip Mall	6.15617 / 3.77313	6.2570	0.2013	4.8200e-003	12.7260
Total		1,551.9911	57.9929	1.3849	3,414.5278

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2,394.601 2	141.5169	0.0000	5,932.523 0
Unmitigated	2,394.601 2	141.5169	0.0000	5,932.523 0

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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			
Apartments Low Rise	452.18	91.7885	5.4245	0.0000	227.4020
City Park	1.48	0.3004	0.0178	0.0000	0.7443
Elementary School	496.57	100.7992	5.9571	0.0000	249.7258
General Heavy Industry	5423.91	1,101.0047	65.0675	0.0000	2,727.6926
General Light Industry	1783.12	361.9573	21.3911	0.0000	896.7338
Government Office Building	808.51	164.1202	9.6992	0.0000	406.6009
Regional Shopping Center	436.31	88.5670	5.2342	0.0000	219.4210
Single Family Housing	2307.24	468.3489	27.6786	0.0000	1,160.3145
Strip Mall	87.27	17.7150	1.0469	0.0000	43.8882
Total		2,394.6012	141.5169	0.0000	5,932.5230

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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

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	452.18	91.7885	5.4245	0.0000	227.4020
City Park	1.48	0.3004	0.0178	0.0000	0.7443
Elementary School	496.57	100.7992	5.9571	0.0000	249.7258
General Heavy Industry	5423.91	1,101.0047	65.0675	0.0000	2,727.6926
General Light Industry	1783.12	361.9573	21.3911	0.0000	896.7338
Government Office Building	808.51	164.1202	9.6992	0.0000	406.6009
Regional Shopping Center	436.31	88.5670	5.2342	0.0000	219.4210
Single Family Housing	2307.24	468.3489	27.6786	0.0000	1,160.3145
Strip Mall	87.27	17.7150	1.0469	0.0000	43.8882
Total		2,394.6012	141.5169	0.0000	5,932.5230

9.0 Operational Offroad

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

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

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

**Fowler GP 2042
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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,826.21	1000sqft	41.92	1,826,209.00	0
Elementary School	537.09	1000sqft	12.33	537,090.00	0
General Heavy Industry	14,442.10	1000sqft	331.54	14,442,100.00	0
General Light Industry	7,784.08	1000sqft	178.70	7,784,084.00	0
City Park	55.03	Acre	55.03	2,397,106.00	0
Apartments Low Rise	2,376.00	Dwelling Unit	148.50	2,376,000.00	6795
Single Family Housing	13,342.00	Dwelling Unit	4,331.82	24,015,600.00	38158
Regional Shopping Center	926.00	1000sqft	21.26	925,998.00	0
Strip Mall	247.25	1000sqft	5.68	247,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MW hr)	25.42	CH4 Intensity (lb/MW hr)	0.004	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity Factors adjusted based on RPS

Land Use - Full 2042 buildout

Construction Phase - No construction

Trips and VMT - No construction

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

Grading - No construction

Architectural Coating - No construction

Vehicle Trips - Mobile calculated separately

Woodstoves - No Fireplaces

Area Coating -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	12,881,364.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	38,644,091.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	17,814,330.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	53,442,990.00	0.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	NumDays	155,000.00	1.00
tblConstructionPhase	NumDays	10,000.00	1.00
tblConstructionPhase	NumDays	15,500.00	1.00
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	NumDays	6,000.00	1.00
tblGrading	AcresOfGrading	3.00	0.00
tblGrading	AcresOfGrading	1.50	0.00
tblLandUse	LandUseSquareFeet	1,826,210.00	1,826,209.00
tblLandUse	LandUseSquareFeet	7,784,080.00	7,784,084.00
tblLandUse	LandUseSquareFeet	2,397,106.80	2,397,106.00
tblLandUse	LandUseSquareFeet	926,000.00	925,998.00
tblLandUse	LandUseSquareFeet	247,250.00	247,246.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.004

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tblProjectCharacteristics	CO2IntensityFactor	203.98	25.42
tblProjectCharacteristics	N2OIntensityFactor	0.004	0
tblSolidWaste	SolidWasteGenerationRate	4.73	0.12
tblTripsAndVMT	VendorTripNumber	6,296.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	18,041.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	3,608.00	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	46.12	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	21.10	0.00
tblVehicleTrips	SU_TR	8.55	0.00

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tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	37.75	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	OutdoorWaterUseRate	65,567,218.67	1,644,244.26
tblWoodstoves	NumberCatalytic	148.50	0.00
tblWoodstoves	NumberCatalytic	4,331.82	0.00
tblWoodstoves	NumberNoncatalytic	148.50	0.00
tblWoodstoves	NumberNoncatalytic	4,331.82	0.00

2.0 Emissions Summary

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-22-2022	9-30-2022	0.0505	0.0505
		Highest	0.0505	0.0505

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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Energy	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	49,914.5767	49,914.5767	1.4931	0.8439	50,203.3971
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9,341.4269	0.0000	9,341.4269	552.0625	0.0000	23,142.9898
Water						0.0000	0.0000		0.0000	0.0000	2,103.1295	452.4579	2,555.5874	216.0828	5.1005	9,477.6057
Total	255.2299	48.4696	146.8360	0.2974	0.0000	4.3371	4.3371	0.0000	4.3371	4.3371	11,444.5564	57,367.2901	68,811.8465	769.9516	6.0693	89,869.2778

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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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Energy	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	49,914.5767	49,914.5767	1.4931	0.8439	50,203.3971
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9,341.4269	0.0000	9,341.4269	552.0625	0.0000	23,142.9898
Water						0.0000	0.0000		0.0000	0.0000	2,103.1295	452.4579	2,555.5874	216.0828	5.1005	9,477.6057
Total	255.2299	48.4696	146.8360	0.2974	0.0000	4.3371	4.3371	0.0000	4.3371	4.3371	11,444.5564	57,367.2901	68,811.8465	769.9516	6.0693	89,869.2778

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	8/22/2022	8/22/2022	5	1	
2	Site Preparation	Site Preparation	8/23/2022	8/23/2022	5	1	
3	Grading	Grading	8/24/2022	8/24/2022	5	1	

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

4	Building Construction	Building Construction	8/25/2022	8/25/2022	5	1
5	Paving	Paving	8/26/2022	8/26/2022	5	1
6	Architectural Coating	Architectural Coating	8/27/2022	8/29/2022	5	1

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

3.1 Mitigation Measures Construction

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

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	1.5900e-003	0.0165	9.8500e-003	2.0000e-005	9.0300e-003	8.1000e-004	9.8400e-003	4.9700e-003	7.4000e-004	5.7100e-003	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	1.5900e-003	0.0165	9.8500e-003	2.0000e-005	9.0300e-003	8.1000e-004	9.8400e-003	4.9700e-003	7.4000e-004	5.7100e-003	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0194	0.0145	3.0000e-005		8.2000e-004	8.2000e-004		7.5000e-004	7.5000e-004	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488
Total	1.8100e-003	0.0194	0.0145	3.0000e-005	3.0100e-003	8.2000e-004	3.8300e-003	1.6600e-003	7.5000e-004	2.4100e-003	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0194	0.0145	3.0000e-005		8.2000e-004	8.2000e-004		7.5000e-004	7.5000e-004	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488
Total	1.8100e-003	0.0194	0.0145	3.0000e-005	3.0100e-003	8.2000e-004	3.8300e-003	1.6600e-003	7.5000e-004	2.4100e-003	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656
Total	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656
Total	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6 Paving - 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	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095

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3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095

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3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

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3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

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3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
General Heavy Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Low Rise	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

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Land Use	Miles			Trip %			Trip Purpose %		
	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
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
City Park	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Elementary School	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
General Heavy Industry	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
General Light Industry	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Government Office Building	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Regional Shopping Center	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Single Family Housing	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Strip Mall	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,881.7892	3,881.7892	0.6108	0.0000	3,897.0599
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,881.7892	3,881.7892	0.6108	0.0000	3,897.0599
NaturalGas Mitigated	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7875	46,032.7875	0.8823	0.8439	46,306.3373
NaturalGas Unmitigated	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7875	46,032.7875	0.8823	0.8439	46,306.3373

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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					
Apartments Low Rise	3.24253e+007	0.1748	1.4941	0.6358	9.5400e-003		0.1208	0.1208		0.1208	0.1208	0.0000	1,730.3385	1,730.3385	0.0332	0.0317	1,740.6211
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.33628e+007	0.0721	0.6550	0.5502	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	713.0899	713.0899	0.0137	0.0131	717.3274
General Heavy Industry	2.98951e+008	1.6120	14.6545	12.3098	0.0879		1.1137	1.1137		1.1137	1.1137	0.0000	15,953.1889	15,953.1889	0.3058	0.2925	16,047.9907
General Light Industry	1.61131e+008	0.8688	7.8986	6.6348	0.0474		0.6003	0.6003		0.6003	0.6003	0.0000	8,598.5392	8,598.5392	0.1648	0.1576	8,649.6360
Government Office Building	2.35946e+007	0.1272	1.1566	0.9715	6.9400e-003		0.0879	0.0879		0.0879	0.0879	0.0000	1,259.0988	1,259.0988	0.0241	0.0231	1,266.5810
Regional Shopping Center	9.82484e+006	0.0530	0.4816	0.4046	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.2908	524.2908	0.0101	9.6100e-003	527.4064
Single Family Housing	3.20709e+008	1.7293	14.7778	6.2884	0.0943		1.1948	1.1948		1.1948	1.1948	0.0000	17,114.2532	17,114.2532	0.3280	0.3138	17,215.9546
Strip Mall	2.62328e+006	0.0142	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003	0.0000	139.9882	139.9882	2.6800e-003	2.5700e-003	140.8201
Total		4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7874	46,032.7874	0.8823	0.8439	46,306.3373

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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

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					
Apartments Low Rise	3.24253e+007	0.1748	1.4941	0.6358	9.5400e-003		0.1208	0.1208		0.1208	0.1208	0.0000	1,730.3385	1,730.3385	0.0332	0.0317	1,740.6211
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.33628e+007	0.0721	0.6550	0.5502	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	713.0899	713.0899	0.0137	0.0131	717.3274
General Heavy Industry	2.98951e+008	1.6120	14.6545	12.3098	0.0879		1.1137	1.1137		1.1137	1.1137	0.0000	15,953.1889	15,953.1889	0.3058	0.2925	16,047.9907
General Light Industry	1.61131e+008	0.8688	7.8986	6.6348	0.0474		0.6003	0.6003		0.6003	0.6003	0.0000	8,598.5392	8,598.5392	0.1648	0.1576	8,649.6360
Government Office Building	2.35946e+007	0.1272	1.1566	0.9715	6.9400e-003		0.0879	0.0879		0.0879	0.0879	0.0000	1,259.0988	1,259.0988	0.0241	0.0231	1,266.5810
Regional Shopping Center	9.82484e+006	0.0530	0.4816	0.4046	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.2908	524.2908	0.0101	9.6100e-003	527.4064
Single Family Housing	3.20709e+008	1.7293	14.7778	6.2884	0.0943		1.1948	1.1948		1.1948	1.1948	0.0000	17,114.2532	17,114.2532	0.3280	0.3138	17,215.9546
Strip Mall	2.62328e+006	0.0142	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003	0.0000	139.9882	139.9882	2.6800e-003	2.5700e-003	140.8201
Total		4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7874	46,032.7874	0.8823	0.8439	46,306.3373

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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			
Apartments Low Rise	9.81533e+006	113.1739	0.0178	0.0000	113.6191
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	3.65221e+006	42.1112	6.6300e-003	0.0000	42.2768
General Heavy Industry	1.24346e+008	1,433.7545	0.2256	0.0000	1,439.3947
General Light Industry	6.7021e+007	772.7730	0.1216	0.0000	775.8130
Government Office Building	1.61437e+007	186.1419	0.0293	0.0000	186.8741
Regional Shopping Center	7.3339e+006	84.5623	0.0133	0.0000	84.8949
Single Family Housing	1.06389e+008	1,226.6941	0.1930	0.0000	1,231.5198
Strip Mall	1.95819e+006	22.5785	3.5500e-003	0.0000	22.6674
Total		3,881.7892	0.6108	0.0000	3,897.0599

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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

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	9.81533e+006	113.1739	0.0178	0.0000	113.6191
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	3.65221e+006	42.1112	6.6300e-003	0.0000	42.2768
General Heavy Industry	1.24346e+008	1,433.7545	0.2256	0.0000	1,439.3947
General Light Industry	6.7021e+007	772.7730	0.1216	0.0000	775.8130
Government Office Building	1.61437e+007	186.1419	0.0293	0.0000	186.8741
Regional Shopping Center	7.3339e+006	84.5623	0.0133	0.0000	84.8949
Single Family Housing	1.06389e+008	1,226.6941	0.1930	0.0000	1,231.5198
Strip Mall	1.95819e+006	22.5785	3.5500e-003	0.0000	22.6674
Total		3,881.7892	0.6108	0.0000	3,897.0599

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

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

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Unmitigated	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

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

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	42.6824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	203.7113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6880	5.8796	2.5019	0.0375		0.4754	0.4754		0.4754	0.4754	0.0000	6,809.1538	6,809.1538	0.1305	0.1248	6,849.6172
Landscaping	3.4969	1.3433	116.4310	6.1800e-003		0.6480	0.6480		0.6480	0.6480	0.0000	191.1017	191.1017	0.1827	0.0000	195.6679
Total	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

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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	42.6824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	203.7113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6880	5.8796	2.5019	0.0375		0.4754	0.4754		0.4754	0.4754	0.0000	6,809.1538	6,809.1538	0.1305	0.1248	6,849.6172
Landscaping	3.4969	1.3433	116.4310	6.1800e-003		0.6480	0.6480		0.6480	0.6480	0.0000	191.1017	191.1017	0.1827	0.0000	195.6679
Total	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

7.0 Water Detail

7.1 Mitigation Measures Water

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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	2,555,587 4	216.0828	5.1005	9,477.605 7
Unmitigated	2,555,587 4	216.0828	5.1005	9,477.605 7

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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

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	154.806 / 97.5951	62.7098	5.0465	0.1191	224.3664
City Park	0 / 1.64424	0.0664	1.0000e-005	0.0000	0.0666
Elementary School	15.574 / 40.0473	7.5287	0.5079	0.0120	23.7967
General Heavy Industry	3339.74 / 0	1,267.9120	108.8581	2.5696	4,755.1064
General Light Industry	1800.07 / 0	683.3860	58.6729	1.3850	2,562.9326
Government Office Building	362.794 / 222.358	146.7063	11.8266	0.2791	525.5543
Regional Shopping Center	68.5912 / 42.0397	27.7368	2.2360	0.0528	99.3631
Single Family Housing	869.285 / 548.028	352.1355	28.3377	0.6688	1,259.8889
Strip Mall	18.3144 / 11.225	7.4060	0.5970	0.0141	26.5308
Total		2,555.5874	216.0828	5.1005	9,477.6057

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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			
Apartments Low Rise	154.806 / 97.5951	62.7098	5.0465	0.1191	224.3664
City Park	0 / 1.64424	0.0664	1.0000e-005	0.0000	0.0666
Elementary School	15.574 / 40.0473	7.5287	0.5079	0.0120	23.7967
General Heavy Industry	3339.74 / 0	1,267.9120	108.8581	2.5696	4,755.1064
General Light Industry	1800.07 / 0	683.3860	58.6729	1.3850	2,562.9326
Government Office Building	362.794 / 222.358	146.7063	11.8266	0.2791	525.5543
Regional Shopping Center	68.5912 / 42.0397	27.7368	2.2360	0.0528	99.3631
Single Family Housing	869.285 / 548.028	352.1355	28.3377	0.6688	1,259.8889
Strip Mall	18.3144 / 11.225	7.4060	0.5970	0.0141	26.5308
Total		2,555.5874	216.0828	5.1005	9,477.6057

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9,341.4269	552.0625	0.0000	23,142.9898
Unmitigated	9,341.4269	552.0625	0.0000	23,142.9898

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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			
Apartments Low Rise	1092.96	221.8610	13.1116	0.0000	549.6512
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0604
Elementary School	698.22	141.7324	8.3761	0.0000	351.1359
General Heavy Industry	17908.2	3,635.2028	214.8343	0.0000	9,006.0610
General Light Industry	9652.26	1,959.3216	115.7926	0.0000	4,854.1362
Government Office Building	1698.38	344.7558	20.3745	0.0000	854.1179
Regional Shopping Center	972.3	197.3681	11.6641	0.0000	488.9712
Single Family Housing	13736.9	2,788.4625	164.7934	0.0000	6,908.2978
Strip Mall	259.61	52.6985	3.1144	0.0000	130.5583
Total		9,341.4269	552.0625	0.0000	23,142.9898

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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

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1092.96	221.8610	13.1116	0.0000	549.6512
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0604
Elementary School	698.22	141.7324	8.3761	0.0000	351.1359
General Heavy Industry	17908.2	3,635.2028	214.8343	0.0000	9,006.0610
General Light Industry	9652.26	1,959.3216	115.7926	0.0000	4,854.1362
Government Office Building	1698.38	344.7558	20.3745	0.0000	854.1179
Regional Shopping Center	972.3	197.3681	11.6641	0.0000	488.9712
Single Family Housing	13736.9	2,788.4625	164.7934	0.0000	6,908.2978
Strip Mall	259.61	52.6985	3.1144	0.0000	130.5583
Total		9,341.4269	552.0625	0.0000	23,142.9898

9.0 Operational Offroad

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

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Appendix D: CNDDB Search Results



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Malaga) OR Conejo OR Sanger OR Clovis OR Fresno North OR Fresno South OR Caruthers OR Riverdale OR Laton OR Burris Park OR Selma OR Round Mountain

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields <i>Lasthenia chrysantha</i>	PDAST5L030	None	None	G2	S2	1B.1
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
Antioch efferian robberfly <i>Efferia antiochi</i>	IIDIP07010	None	None	G1G2	S1S2	
black-crowned night heron <i>Nycticorax nycticorax</i>	ABNGA11010	None	None	G5	S4	
bristly sedge <i>Carex comosa</i>	PMCYP032Y0	None	None	G5	S2	2B.1
brittlescale <i>Atriplex depressa</i>	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California alkali grass <i>Puccinellia simplex</i>	PMPOA53110	None	None	G2	S2	1B.2
California glossy snake <i>Arizona elegans occidentalis</i>	ARADB01017	None	None	G5T2	S2	SSC
California jewelflower <i>Caulanthus californicus</i>	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
California satintail <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G3	S3	2B.1
California tiger salamander - central California DPS <i>Ambystoma californiense pop. 1</i>	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
coast horned lizard <i>Phrynosoma blainvillii</i>	ARACF12100	None	None	G3G4	S3S4	SSC
Crotch bumble bee <i>Bombus crotchii</i>	IIHYM24480	None	None	G2	S1S2	
double-crested cormorant <i>Nannopterum auritum</i>	ABNFD01020	None	None	G5	S4	WL
forked hare-leaf <i>Lagophylla dichotoma</i>	PDAST5J070	None	None	G2	S2	1B.1
Fresno kangaroo rat <i>Dipodomys nitratoides exilis</i>	AMAFD03151	Endangered	Endangered	G3TH	SH	



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
great egret <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
Greene's tuctoria <i>Tuctoria greenei</i>	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hoary bat <i>Lasiurus cinereus</i>	AMACC05030	None	None	G3G4	S4	
Hurd's metapogon robberfly <i>Metapogon hurdi</i>	IIDIP08010	None	None	G1G2	S1S2	
least Bell's vireo <i>Vireo bellii pusillus</i>	ABPBW01114	Endangered	Endangered	G5T2	S2	
lesser saltscare <i>Atriplex minuscula</i>	PDCHE042M0	None	None	G2	S2	1B.1
Madera leptosiphon <i>Leptosiphon serrulatus</i>	PDPLM09130	None	None	G3	S3	1B.2
midvalley fairy shrimp <i>Branchinecta mesovallensis</i>	ICBRA03150	None	None	G2	S2S3	
molestan blister beetle <i>Lytta molesta</i>	IICOL4C030	None	None	G2	S2	
Northern California legless lizard <i>Anniella pulchra</i>	ARACC01020	None	None	G3	S3	SSC
Northern Claypan Vernal Pool <i>Northern Claypan Vernal Pool</i>	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool <i>Northern Hardpan Vernal Pool</i>	CTT44110CA	None	None	G3	S3.1	
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
Panoche pepper-grass <i>Lepidium jaredii ssp. album</i>	PDBRA1M0G2	None	None	G2G3T2T3	S2S3	1B.2
San Joaquin adobe sunburst <i>Pseudobahia peirsonii</i>	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin pocket mouse <i>Perognathus inornatus</i>	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin Valley Orcutt grass <i>Orcuttia inaequalis</i>	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead <i>Sagittaria sanfordii</i>	PMALI040Q0	None	None	G3	S3	1B.2
snowy egret <i>Egretta thula</i>	ABNGA06030	None	None	G5	S4	
spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	PDAPI0Z0Y0	None	None	G2	S2	1B.2



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
succulent owl's-clover <i>Castilleja campestris var. succulenta</i>	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2T3	S3	
Valley Sacaton Grassland <i>Valley Sacaton Grassland</i>	CTT42120CA	None	None	G1	S1.1	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardi</i>	ICBRA10010	Endangered	None	G4	S3S4	
western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G2G3	S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 50

Appendix E: Cultural Resources Information



To: Jacqueline Lancaster
Provost & Pritchard Consulting Group
130 N. Garden Street
Visalia, CA 93291

Record Search 21-060

Date: February 22, 2021

Re: City of Fowler General Plan Update Project EIR

County: Fresno

Map(s): 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA

According to the information in our files, there have been 15 previous cultural resource studies conducted within the project area, FR-00135, 00288, 00338, 00778, 01636, 01837, 01889, 01904, 02108, 02287, 02294, 02452, 02642, 02716, and 02935.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA

There are 11 recorded resources within the project area, P-10-002864, 002961, 002962, 003930, 004421, 004423, 005159, 006101, 006361, 006523, and 007090. These resources consist of historic era trash scatters, historic era buildings, historic era railroads, an historic era park, and an historic era canal.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project consists of a General Plan Update for the community of Fowler. Further, we understand no immediate ground disturbance will take place as a result of this update. Therefore, no further cultural resource investigation is recommended at this time. However, prior to any future ground disturbance project activities, we recommend a new record search be conducted so our office can then make project specific recommendations for further cultural resources study, if needed. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Celeste M. Thomson, Coordinator

Date: February 22, 2021

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

NATIVE AMERICAN HERITAGE COMMISSION

March 10, 2021

Jackie Lancaster

Provost & Pritchard Consulting Group

Via Email to: JLancaster@ppeng.com

Re: City of Fowler General Plan Update EIR Project, Fresno County

Dear Ms. Lancaster:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment



CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
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West Sacramento,
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(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

**Native American Heritage Commission
Native American Contacts List
March 10, 2021**

Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 lkipp@bsrnation.com (559) 374-0066 (559) 374-0055	Western Mono	Dunlap Band of Mono Indians Dirk Charley, Tribal Secretary 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com (559) 554-5433	Mono
Chicken Ranch Rancheria of Me-Wuk Indians Lloyd Mathiesen, Chairperson P.O. Box 1159 Jamestown, CA 95327 lmathiesen@crtribal.com (209) 984-9066 (209) 984-9269	Miwok - Me-wuk	Kings River Choinumni Farm Tribe Stan Alec 3515 East Fedora Avenue Fresno, CA 93726 (559) 647-3227 Cell	Foothill Yokuts Choinumni
Cold Springs Rancheria Carol Bill, Chairperson P.O. Box 209 Tollhouse, CA 93667 coldsprgstribes@netptc.net (559) 855-5043 (559) 855-4445 Fax	Mono	Nashville Enterprise Miwok-Maidu-Nishinam Tribe Cosme A. Valdez, Chairperson P.O. Box 580986 Elk Grove, CA 95758-001 valdezcome@comcast.net (916) 429-8047 Voice/Fax (916) 396-1173 Cell	Miwok
Dumna Wo-Wah Tribal Government Robert Ledger Sr., Chairperson 2191 West Pico Ave. Fresno, CA 93705 ledgerrobert@ymail.com (559) 540-6346	Dumna/Foothill Yokuts Mono	North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com (559) 299-3729 Home (559) 355-1774 - cell	Mono
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com (760) 258-5244	Mono	Picayune Rancheria of Chukchansi Indians Claudia Gonzales, Chairwoman P.O. Box 2226 Oakhurst, CA 93644 cgonzales@chukchansitribe.net (559) 412-5590	Chukchansi / Yokut

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

**This list is only applicable for contacting local Native Americans Tribes for the proposed:
City of Fowler General Plan Update EIR Project, Fresno County.**

**Native American Heritage Commission
Native American Contacts List
March 10, 2021**

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore CA 93245
(559) 924-1278
(559) 924-3583 Fax

Tache
Tachi
Yokut

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271
(559) 781-4610 Fax

Yokuts

Table Mountain Rancheria
Brenda D. Lavell, Chairperson
P.O. Box 410
Friant CA 93626
rpennell@tmr.org
(559) 822-2587
(559) 822-2693 Fax

Yokuts

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410
Friant CA 93626
rpennell@tmr.org
(559) 325-0351
(559) 325-0394 Fax

Yokuts

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno CA 93720
davealvarez@sbcglobal.net
(559) 217-0396 Cell

Choinumni

Traditional Choinumni Tribe
Rick Osborne, Cultural Resources
2415 E. Houston Avenue
Fresno CA 93720
(559) 324-8764
lemek@att.net

Choinumni

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

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**This list is only applicable for contacting local Native Americans Tribes for the proposed:
City of Fowler General Plan Update EIR Project, Fresno County.**



August 19, 2022

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairman
C/O Cultural Department
P.O. Box 8
Lemoore, CA 93245

Subject: Consultation pursuant to Senate Bill 18 and Assembly Bill 52 for the City of Fowler General Plan Update Environmental Impact Report Project in the City of Fowler, Fresno County, CA

Dear Chairman Sisco:

The City of Fowler is the Lead Agency for the General Plan Update Environmental Impact Report (EIR). The City is requesting your review to determine if formal consultation is appropriate pursuant to the provisions of AB 52 and SB 18, under the California Environmental Quality Act (CEQA)

The City of Fowler General Plan Update and EIR proposed by the City of Fowler is a long-term framework for the protection of the City of Fowler's agricultural, natural, and cultural resources and for the overall development in the City until 2040. The General Plan Update includes seven elements: Land Use, Community Design, Housing, Community Health and Equity, Open-space, Mobility, Economic Development, Community Resiliency and Safety, and Public Facilities.

A map of the Project Area is attached for your reference. Pursuant to SB 18 and AB 52, respectively, the Tribe has 90 and 30 days to request formal consultation. Given the timelines involved in preparing CEQA documents and other materials, the required public review periods, conducting the requisite hearings, and finalizing the applications, we respectfully request that the Tribe consider the items herein as expeditiously as possible. Please feel free to contact me with any questions at (559) 636-1166 Ext 535 or email at dmarple@ci.fowler.ca.us. Thank you.

Respectfully,

Dawn E. Marple,
City Planner
Enclosures: Project Area Map

Appendix F: Energy Impact Analysis

ENERGY IMPACT ANALYSIS

FOR

CITY OF FOWLER GENERAL PLAN UPDATE

NOVEMBER 2022

PREPARED FOR:

PROVOST & PRITCHARD
CONSULTING GROUP
1800 30TH STREET, SUITE 280
BAKERSFIELD, CA 93301

PREPARED BY:



75 HIGUERA STREET, SUITE 105
SAN LUIS OBISPO, CA 93401

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Appendix A: Energy Modeling	
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LIST OF COMMON TERMS & ACRONYMS

AFV	Alternative Fuel Vehicles
CalEEMod	California Emissions Estimator Model
CARB	California Air Resource Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
EMFAC	Emissions Factor
EO	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act
FCOG	Fresno Council of Governments
GHG	Greenhouse Gas
GPU	General Plan Update
kBTU	Kilo British Thermal Units
kW	Kilowatt
kWh	Kilowatt Hour
MMBTU	Million Metric British Thermal Units
MW	Megawatt
PG&E	Pacific Gas and Electric
PV	Photovoltaic
RTP	Regional Transportation Plan
SCS	Sustainable Communities Strategy
SJVAPCD	San Joaquin Valley Air Pollution Control District
VMT	Vehicle Mile Travelled

INTRODUCTION

This report provides a summary of important laws, regulations, and guidance documents relevant to air quality and land use planning in California and Fowler; an overview of existing air quality issues and conditions; a description of local and regional air quality issues and programs; and a summary of findings. The findings from this analysis will inform the development of goals and policies in the City's General Plan Update (GPU).

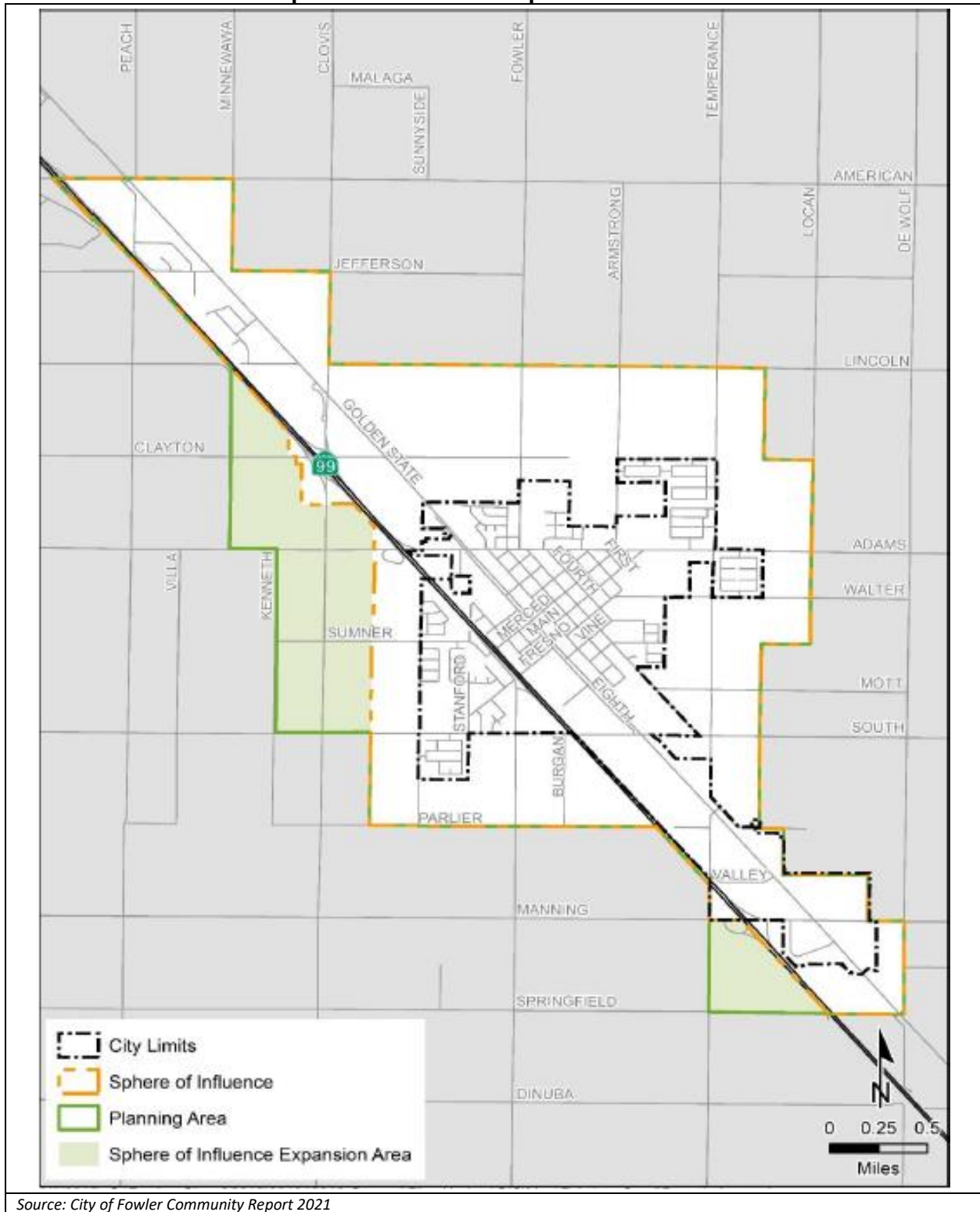
PROPOSED CITY OF FOWLER GENERAL PLAN UPDATE

The City of Fowler adopted its first General Plan in 1976. The currently adopted General Plan was adopted in June 2004 and runs through 2025. Since its adoption, the General Plan has been revised and amended but has not been comprehensively updated. The proposed GPU will include updates to represent changes in community conditions, new legislation, new regulatory requirements and planning practices, and updates regarding new social and environmental issues. The GPU will be updated to provide a planning horizon year 2042. The City of Fowler's city limits, sphere of influence, and planning area is depicted in Figure 1.

ENERGY FUNDAMENTALS

Energy use is typically associated with transportation, construction, and the operation of land uses. Transportation energy use is generally categorized as direct and indirect energy. Direct energy relates to energy consumption by vehicle propulsion. Indirect energy relates to the long-term energy consumption of equipment, such as maintenance activities. Energy is also consumed by construction, routine operation and, maintenance of land use. Construction energy relates to a direct one-time energy expenditure primarily associated with the consumption of fuel to operate construction equipment. Energy consumption related to land use is normally associated with direct energy consumption for heating, ventilation, and air conditioning of buildings.

**Figure 1
Proposed General Plan Update Focus Areas**



EXISTING SETTING

Physical Setting

The city of Fowler is located in Fresno County. The city is served primarily by Pacific Gas & Electric (PG&E). The climate in the project area is semi-arid, with an annual normal precipitation of approximately 11 inches. Temperatures in the project area range from an average minimum of approximately 38 degrees Fahrenheit (°F), in January, to an average maximum of 98°F, in July (WRCC 2022).

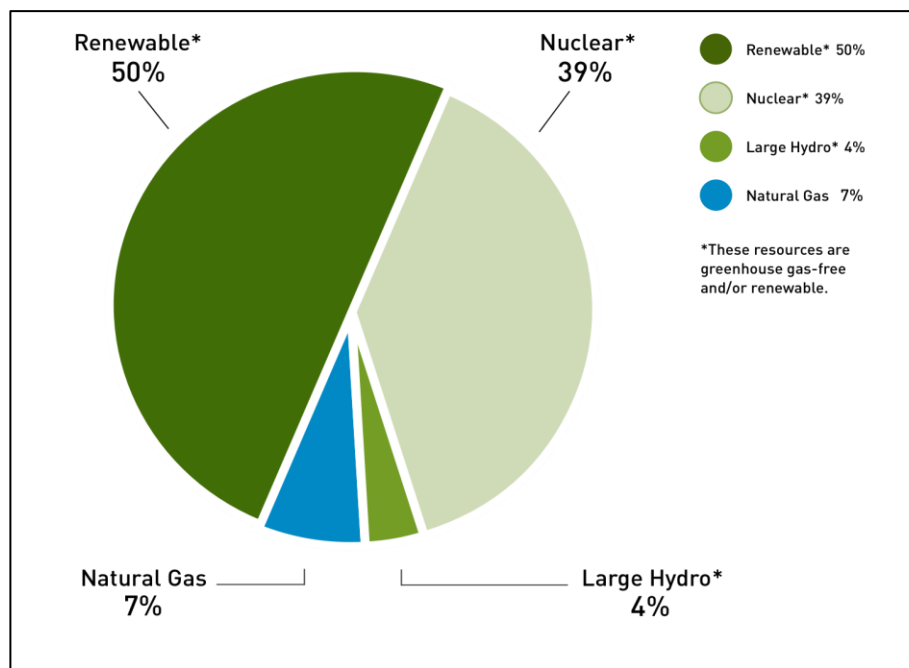
Energy Resources

Energy sources for the City of Fowler are served primarily by PG&E. Energy resources consist largely of natural gas, nuclear, fossil fuels, hydropower, solar, and wind. The primary use of energy sources is for electricity to operate campus facilities.

Electricity

Electric services within Fowler are provided by the regulated electric utility, PG&E. The breakdown of PG&E’s power mix is shown in Figure 2. As shown, 97 percent of PG&E’s 2021 total electric power mix came from greenhouse gas (GHG)-free sources that include nuclear, large hydro, renewable energy sources, and natural gas (PG&E 2021).

Figure 2. PG&E 2021 Power Mix



Source: PG&E 2021

Natural Gas

Natural gas services in the City of Fowler are purchased from Southern California Gas Company (SoCalGas). SoCalGas's natural gas system encompasses approximately 20,000 square miles in Southern California (SoCalGas 2020). Natural gas throughput provided by SoCalGas totals approximately 2.8 billion cubic feet per day (SoCalGas 2013).

REGULATORY FRAMEWORK

Federal

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, the United States Environmental Protection Agency (U.S. EPA) and National Highway Traffic Safety Administration (NHTSA), on behalf of the United States Department of Transportation (U.S. DOT), issued final rules to further reduce greenhouse gas (GHG) emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond. NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) limiting vehicle emissions to 163 grams of carbon dioxide (CO₂) per mile for the fleet of cars and light-duty trucks by the model year 2025.

In January 2017, U.S. EPA Administrator Gina McCarthy signed a Final Determination to maintain the current GHG emissions standards for the model year 2022-2025 vehicles. However, on March 15, 2017, U.S. EPA Administrator Scott Pruitt and U.S. DOT Secretary Elaine Chao announced that U.S. EPA intends to reconsider the Final Determination. On April 2, 2018, U.S. EPA Administrator Scott Pruitt officially withdrew the January 2017 Final Determination, citing information that suggests that these current standards may be too stringent due to changes in key assumptions since the January 2017 Determination. According to the U.S. EPA, these key assumptions include gasoline prices and overly optimistic consumer acceptance of advanced technology vehicles. The April 2, 2018, notice is not U.S. EPA's final agency action. The U.S. EPA intends to initiate rulemaking to adopt new standards. Until that rulemaking has been completed, the current standards remain in effect. (U.S. EPA 2017, U.S. EPA 2018).

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the NHTSA, which is part of the U.S. DOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon (mpg). Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The CAFE program, administered by U.S. EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. U.S. EPA calculates a CAFE value for each

manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the U.S. DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992

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 AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the Act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Assembly Bill 32: Climate Change Scoping Plan and Update

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

The initial Scoping Plan was first approved by California Air Resources Board (ARB) on December 11, 2008, and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals (ARB 2014). The most recent update released by the ARB is the 2017 Climate Change Scoping Plan, which was released in November 2017. The measures identified in the 2017 Climate Change Scoping Plan have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels (SAF) Plan in partnership with ARB and consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing significant degradation of public health and environmental quality.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and the ARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicle miles traveled (VMT) (ARB 2003). Further, a performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020.

Senate Bill SB 100

SB 100 The 100 Percent Clean Energy Act of 2018, which sets a state policy that eligible renewable energy and zero-carbon resources supply 100 percent (%) of all retail sales of electricity in California by 2045.

Senate Bill 350: Clean Energy and Pollution Prevention Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires a doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 375

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

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill (SB) 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This SB will affect statewide GHG emissions associated with electricity generation. In 2008, Governor

Schwarzenegger signed Executive Order (EO) S-14-08, which set the Renewables Portfolio Standard (RPS) target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this EO in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

Senate Bill 32 and Assembly Bill 197 of 2016

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

Executive Order S-06-06

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the State to meet a target for use of biomass electricity. The Bioenergy Action Plans developed by the CEC to identify those barriers and recommend actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan provides a detailed action plan to achieve the following goals:

- increase environmentally- and economically-sustainable energy production from organic waste;
- encourage the development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- create jobs and stimulate economic development, especially in rural regions of the state; and
- reduce fire danger, improve air and water quality, and reduce waste.

In 2019, 2.87 percent of the total electrical system power in California was derived from biomass (CEC 2020).

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Governor Brown signed EO B-48-18 which required all State entities to work with the private sector to put at least 5 million zero-emission vehicles on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 zero-emissions chargers by 2025. In addition, State entities are also required to continue to partner with local and regional governments to streamline the installation of zero-

emission vehicle infrastructure. Additionally, all State entities are to support and recommend policies and actions to expand infrastructure in homes, through the Low-Carbon Fuel Standard.

Executive Order B-55-18

Establishes a new statewide goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California’s energy markets. The State’s three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California’s electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California’s future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 EAP II, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State’s ongoing actions in the context of global climate change.

California Building Code

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

Green Building Standards

In essence, green building standards are indistinguishable from any other building standards, are contained in the CBC, and regulate the construction of new buildings and improvements. Whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include electric vehicle (EV)-capable parking spaces which have electrical panel capacity and conduit to accommodate the future installation. In addition, the 2019 Standards also required the installation of solar photovoltaic (PV) systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up

to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2018).

The recently updated 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure's loads. These new solar requirements will become effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires a battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB 2016).

Advanced Clean Cars II

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2022).

Small Off-Road Engines

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2021).

Fresno County Regional Transportation Plan

The Fresno Council of Governments (FCOGs) 2022 Regional Transportation Plan (RTP) comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2042. FCOG's first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-range transportation plans extend at least 20 years into the future. As the federally designated MPO and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region's 15 cities, the County of Fresno, staff from related local public agencies, the San Joaquin Valley Air Pollution Control District (SJVAPCD), Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, and each element is augmented by additional documentation. The RTP also contains a chapter that establishes the SCS to show how integrated land use and transportation planning can lead to more efficient use of autos and light trucks, as well as improve the overall quality of life in the region.

Rule 4901

On June 20, 2019, the SJVAPCD adopted and amendments to Rule 4901 to reduce the public's exposure to harmful particulates from wood smoke. Residential wood burning is one of the largest sources of PM^{2.5} in the San Joaquin Valley during the winter season. Under the rule installation of new wood burning fireplaces and heaters is restricted at elevations below 3,000 ft. The rule also requires any modifications made to an existing fireplace or chimney must install an EPA certified, gas fueled or electric device (SJVAPCD 2021).

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project would normally have a significant effect on the environment if the project would:

- E-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- E-2: Conflict or obstruct a state or local plan for renewable energy or energy efficiency.

The CEQA Guidelines, Appendix F, require environmental analyses to include a discussion of potential energy impacts associated with a proposed project. Where necessary, CEQA requires that mitigation measures be incorporated to reduce the inefficient, wasteful, or unnecessary consumption of energy. The State CEQA Guidelines, however, do not establish criteria that define inefficient, wasteful, or unnecessary consumption. Compliance with the State's building standards for energy efficiency would result in decreased energy consumption for proposed buildings. However, compliance with building codes may not adequately address all potential energy impacts associated with project construction and operation. As a result, this analysis includes an evaluation of electricity and natural gas usage requirements associated with future development, as well as energy requirements associated with the use of on-road and off-road vehicles. The degree to which the proposed project would comply with existing energy standards, as well as applicable regulatory requirements and policies related to energy conservation was also taken into consideration for the evaluation of project-related energy impacts.

Methodology

Energy consumption is categorized in terms of "operational" and "construction" energy. Operational energy accounts for energy consumed mobile source and land use scenario envisioned under the 2042 GPU, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. Construction energy is the energy needed for construction and maintenance of the transportation system and land use scenario facilitated by the 2042 GPU. The analysis of operational energy involves the quantification of anticipated transportation fuel, natural gas, and electricity consumption under the 2042 GPU and a qualitative discussion of the efficiency, necessity, and wastefulness of the energy consumption. Analysis of construction energy involves a qualitative discussion of construction and maintenance energy requirements anticipated under buildout of the 2042 GPU.

Construction

Development facilitated by the 2042 GPU would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Much of this information for specific future development projects is unknown at this time, and construction-related impacts were qualitatively discussed.

Operations

The long-term operation of the proposed 2042 GPU would require electricity usage for lighting, space and water heating, appliances, water conveyance, and landscaping maintenance equipment. Indirect energy use would include wastewater treatment and solid waste removal.

Projections for the 2042 GPU transportation fuel were calculated based on the VMT Impact Assessment conducted by Kittelson & Associates and ARB’s Emission Factors 2021 (EMFAC2021) database. For 2042 natural gas and electricity consumption under buildout of the land use scenario envisioned by the 2042 GPU, consumption factors were drawn from the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod data is provided in Appendix A.

Relevant Proposed GPU Goals and Policies

The 2042 GPU includes a number of goals and policies that would energy usage. Some of the most relevant of these goals and policies include the following:

- H-6.1** Encourage the use of energy conserving techniques in the siting and design of new housing.
- H-6.2** Actively implement and enforce all State energy conserving requirements for new residential construction.
- H-6.3** Promote Public awareness of the need for energy conservation.
- LU-21** Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips. (Land Use Element, Policy 4.6.5)
- CH-6** Evaluate land use decisions for consistency with siting recommendations as outlined in the ARB’s Land Use Compatibility Handbook.
- MOB-4** Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.
- MOB-9** New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
- MOB-10** Develop a multi-purpose recreational bikeway network and support facilities.
- MOB-11** Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
- MOB-12** Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
- MOB-13** Coordinate with Caltrans, FCOG, FCRTA, and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
- MOB-14** Identify opportunities for a multi-modal transit hub within the City.
- MOB-15** Support the development of paratransit service programs.
- MOB-16** Support transit operator efforts to maximize return for short- and long-range transit needs.
- MOB-17** Incorporate the potential for public transit service expansion throughout the City.
- MOB-18** Improve route options and access for public transit City-wide, specifically west of SR 99.

IMPACTS AND MITIGATION MEASURES

Impact E-1: *Would the project result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*

Implementation of the proposed project would increase electricity, diesel, gasoline, and natural gas consumption associated with construction activities, as well as long-term operational activities. The increases in energy consumption associated with short-term construction and long-term operational

activities would be efficiently used after implementation of the General Plan Policies. Therefore, the impact of the proposed plan would be **Less Than Significant**.

Construction-Related Energy Consumption

Energy consumption would occur during construction of the proposed 2042 GPU would including fuel use associated with the on-site operation of off-road equipment and vehicles traveling to and from the construction site. The CBC includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by the 2042 GPU and would minimize wasteful, inefficient, and unnecessary energy consumption. Construction and operation of projects facilitated by the 2042 GPU would be required to comply with relevant provisions of CBC and Title 24 of the California Energy Code, which would avoid wasteful, inefficient, and unnecessary energy consumption. As a result, the construction of proposed facilities and improvements would not result in an inefficient, wasteful, or unnecessary consumption of energy.

Operational Mobile-Source Energy Consumption

Operational mobile-source energy consumption would be primarily associated with vehicle trips to and from the project. Energy use associated with commute trips are discussed in greater detail, as follows:

Table 1 summarizes the annual fuel use within the Fowler planning area for existing (year 2019) and build-out (year 2042) conditions. As noted in Table 1, the vehicle trips associated with existing year 2019 conditions would consume an annual estimated 1,451,044 gallons of diesel and 3,689,421 gallons of gasoline, which combined equates to 643,132 million metric British thermal units (MMBTU). With a service population (SP) of 6,808, existing year 2019 conditions would consume 94.5 MMBTU/capita. With the proposed build-out of the 2042 GPU, annual fuel consumption would increase to 5,885,630 gallons of diesel and 11,338,136 gallons of gasoline, which are equivalent to 2,172,393 MMBTU. With a projected population of 48,404, year 2042 build-out conditions would consume 44.9 MMBTU/capita. While the overall fuel consumption would increase with the adoption of the proposed 2042 GPU the efficiency of the fuel usage would improve significantly. The development of increasingly efficient automobile engines would further increase energy efficiency and energy conservation.

Operational Building-Use Energy Consumption

The proposed 2042 GPU would result in increased electricity and natural gas consumption associated with the long-term operation of the proposed land uses. It is important to note that buildings included in the 2042 GPU would be required to comply with Title 24 standards for energy efficiency, which would include increased building insulation and energy-efficiency requirements, including the use of energy-efficient lighting, energy-efficient appliances, and use of low-flow water fixtures.

Estimated electricity consumption associated with existing year 2019 conditions and the proposed build-out of the proposed 2042 GPU are summarized in Table 2. As depicted, under 2019 conditions the calculated total consumption was approximately 52,309,627 kilowatt hours per year (kWh/Year) of electricity, 7,296,595 kWh/Year for water use, treatment, and conveyance, and 213,620,578 kilo British thermal units per year (kBTU/Yr) of natural gas. In total, facilities under existing 2019 conditions use a total of approximately 416,997 MMBTU/year. Under the build-out of the proposed 2042 GPU, consumption would total approximately 336,659,330 kWh/Yr of electricity, 26,572,392 kWh/Year

Table 1. Operational Fuel Consumption

Source	Annual Fuel Use (gallons)	Annual MMBTU
Existing Conditions (Year 2019)		
On-Road Vehicles (Diesel)	1,451,044	199,346
On-Road Vehicles (Gasoline)	3,689,421	443,786
Total:		643,132
Estimated Population:		6,808
MMBTU/Capita		94.5
GPU Buildout Conditions (Year 2042)		
On-Road Vehicles (Diesel)	5,885,630	808,574
On-Road Vehicles (Gasoline)	11,338,136	1,363,819
Total:		2,172,393
Estimated Population:		48,404
MMBTU/Capita		44.9
<i>MMBTU = Million metric British thermal units</i>		
<i>Fuel use was calculated based, in part, on project trip generation rates derived from the traffic analysis prepared for this project (Kittelson & Associates 2022).</i>		
<i>Refer to Appendix A for modeling assumptions and results.</i>		

Table 2. Operational Electricity & Natural Gas Consumption

Source	Energy Use	MMBTU/Year
Existing Conditions (Year 2019)		
Electricity Consumption	52,309,627 kWh/year	178,480
Water Use, Treatment & Conveyance	7,296,595 kWh/Year	24,896
Natural Gas Use	213,620,578 kBTU/Year	213,621
Total:		416,997
Estimated Population:		6,808
MMBTU/Capita:		61.3
GPU Buildout Conditions (Year 2042)		
Electricity Consumption	336,659,330 kWh/year	1,148,682
Water Use, Treatment & Conveyance	26,572,392 kWh/Year	90,665
Natural Gas Use	862,651,820 kBTU/Year	862,652
Total:		2,101,998
Estimated Population:		48,404
MMBTU/Capita:		43.4
<i>MMBTU = Million metric British thermal units</i>		
<i>Fuel use was calculated based, in part, on default construction schedules, equipment use, and vehicle trips identified for the operation of similar land uses contained in the CalEEMod output files prepared for the air quality analysis conducted for this project. Refer to Appendix A for modeling assumptions and results.</i>		

for water use, treatment, and conveyance, and 862,651,820 kilo British thermal units per year (kBTU/Yr) of natural gas. In total, facilities under 2042 conditions would consume a total of approximately 2,101,998 MMBTU/year.

On a per capita basis, total consumption rates would total approximately 61.3 MMBTU/capita under existing conditions and approximately 43.4 MMBTU/capita under future year 2042 GPU buildout conditions. Based on the modeling conducted, per capita energy usage under the proposed 2042 GPU would improve in comparison to existing year 2019 conditions. However, at this time, most projects incorporated in the GPU do not have sufficient detail to allow project-level analysis and thus it would be speculative to analyze project-level impacts on energy consumption. Given that specific projects have the

potential to be wasteful, inefficient, or unnecessarily consume energy resources, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to further reduce energy consumption, energy demands, and vehicle miles traveled. Relevant policies include policies: H-6.1, H-6.2, H-6.3 LU-21, CH1, CH-6, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18.

As noted above, the GPU includes various other measures to reduce the energy consumption of new residential developments and promote the use of alternative means of transportation. These policies can promote the reduction of energy and fuel consumption. However, no policies have been proposed that require existing development or future commercial developments to evaluate and mitigate potential energy impacts.

Proposed Mitigation Measures

MM E-1: The following measures shall be implemented to further reduce energy use associated with the development of proposed facilities:

- Adopt local ordinances to require energy efficiency upgrade at the time of major remodel.
- Amend the building code to improve energy efficiency in new construction, repairs and alternations to existing buildings.
- Adopt residential and commercial energy conservation, renewable energy, and/or zero net energy ordinances (consider requirements for audits or updates at major renovation or time of sale)
- Incorporate renewable energy efficiency into public facilities capital improvements.
- Replace public lighting with energy-efficient lighting that meets or exceeds the State's building standards at the time of development.
- Implement large-scale energy storage in commercial and industrial buildings to control peak loads that meets or exceeds the State's building standards at the time of development.
- Require future development to incorporate on-site renewable energy generation (e.g., solar photovoltaic systems), that meets or exceeds the State's building standards at the time of development.

Significance After Mitigation

Mitigation measures have been included to reduce overall operational energy consumption, including those associated with long-term operational building energy use. With mitigation, operational energy consumption would be substantially reduced, beyond those required by Title 24 building energy-efficiency requirements. With mitigation, this impact would be considered **less than significant**

Impact E-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The projects incorporated in the 2042 GPU would be required to be in full compliance with the California Building Code, including applicable green building standards and building energy efficiency standards. Additionally, starting in 2023, all new homes constructed in California; as well as, numerous non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, and grocery stores, would be required to include solar photovoltaic systems, per the CEC's 2022 Building Energy Efficiency Standards. In addition to complying with federal and state regulations, the GPU itself provides policies that are designed specifically to reduce energy consumption or to reduce other types of pollutants that have the co-benefit of reducing energy consumption. Furthermore, implementation of Mitigation Measure E-1 would help to ensure consistency with applicable regulatory requirements and would also help to promote the use of energy from renewable sources (e.g., solar). For these reasons, implementation of the proposed GPU would not be anticipated to conflict with or obstruct state or local plans for renewable energy or energy efficiency. This impact would be considered **less than significant**.

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APPENDIX A

Energy Modeling

Energy Use Summary Operational Year 2019

Operational Fuel Use

	Gallons	Annual MMBTU
Mobile Fuel (Diesel)	1,451,044	199,346
Mobile Fuel (Gasoline)	3,689,421	443,786
	Total:	643,132

Operational Electricity & Natural Gas Use

	Annual Energy	Annual MMBTU
Electricity (kWh/yr, MMBTU)	52,309,627	178,480
Water Use, Treatment & Conveyance (kWh/Yr, MMBTU)	7,296,594	24,896
Natural Gas (kBTU/yr, MMBTU)	213,620,578	213,621
	Total:	416,997

Energy Use Summary Operational Year 2042

Operational Fuel Use

	Gallons	Annual MMBTU
Mobile Fuel (Diesel)	5,885,630	808,574
Mobile Fuel (Gasoline)	11,338,136	1,363,819
	Total:	2,172,393

Operational Electricity & Natural Gas Use

	Annual Energy	Annual MMBTU
Electricity (kWh/yr, MMBTU)	336,659,330	1,148,682
Water Use, Treatment & Conveyance (kWh/Yr, MMBTU)	26,572,392	90,665
Natural Gas (kBTU/yr, MMBTU)	862,651,820	862,652
	Total:	2,101,998

Appendix G: Greenhouse Gas Impact Analysis

GREENHOUSE GAS IMPACT ANALYSIS

FOR

CITY OF FOWLER GENERAL PLAN UPDATE

NOVEMBER 2022

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Appendix A: Emissions Modeling	
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LIST OF COMMON TERMS & ACRONYMS

AB	Assembly Bill
ARB	California Air Resources Board
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CH ₄	Methane
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DRRP	Diesel Risk Reduction Plan
EMFAC	Emission Factor
EO	Executive Order
FCAA	Federal Clean Air Act
FCOG	Fresno County of Governments
FIP	Federal Implementation Plan
GHG	Greenhouse Gases
GPU	General Plan Update
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
MMTCO ₂ e	Million Metric Tons of Carbon Dioxide Equivalents
NF ₃	Nitrogen trifluoride
N ₂ O	Nitrous Oxide
PFC	Perfluorocarbons
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF ₆	Sulfur hexafluoride
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	Short-Lived Climate Pollutants
SP	Service Population
U.S. EPA	United States Environmental Protection Agency

INTRODUCTION

This report provides a summary of important laws, regulations, and guidance documents relevant to air greenhouse gases and land use planning in California and Fowler; an overview of existing climate change issues and conditions; a description of local and regional programs; and a summary of findings. The findings from this analysis will inform the development of goals and policies in the City's General Plan Update (GPU).

PROPOSED CITY OF FOWLER GENERAL PLAN UPDATE

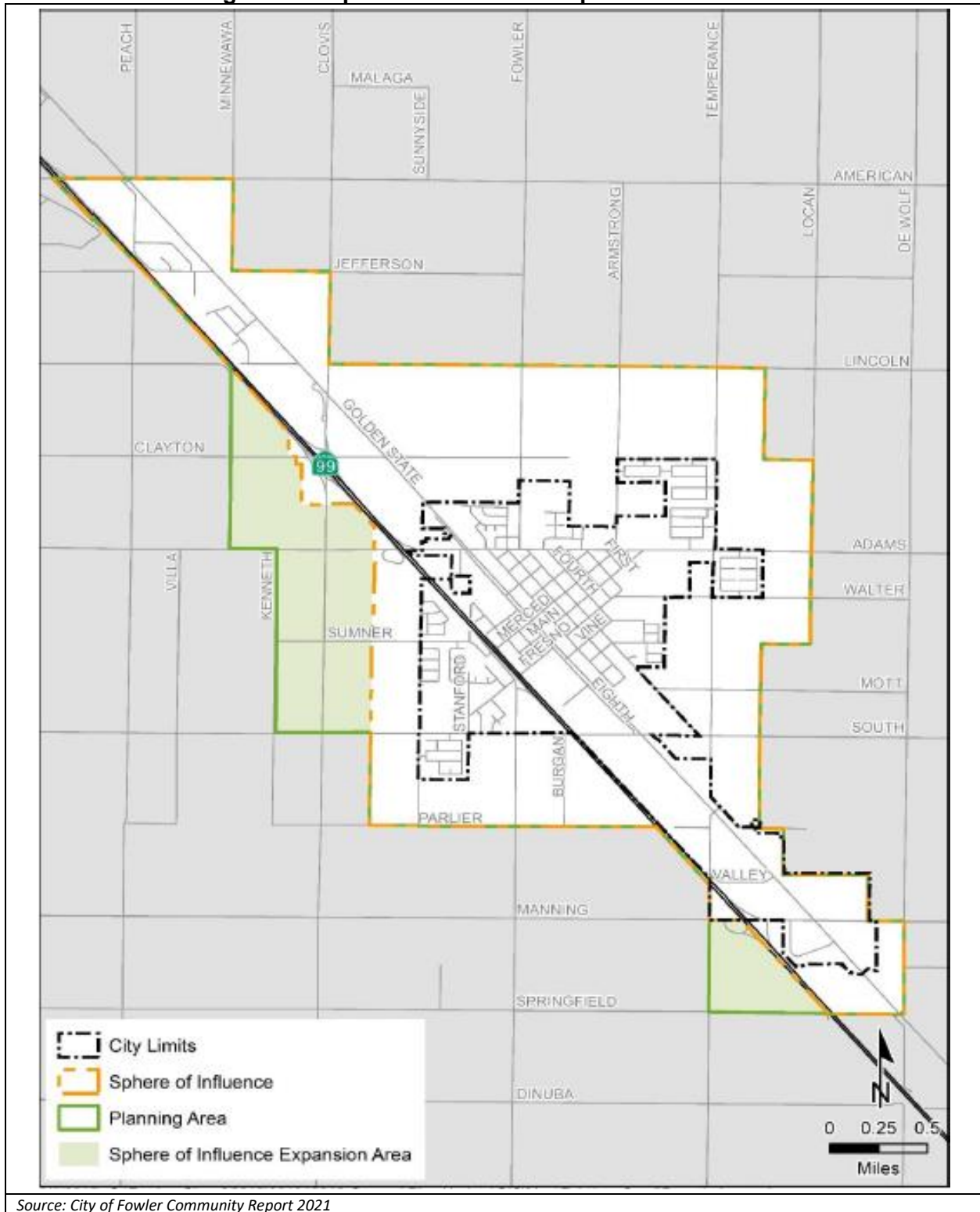
The City of Fowler adopted its first General Plan in 1976. The currently adopted General Plan was adopted in June 2004 and runs through 2025. Since its adoption, the General Plan has been revised and amended but has not been comprehensively updated. The proposed GPU will include updates to represent changes in community conditions, new legislation, new regulatory requirements and planning practices, and updates regarding new social and environmental issues. The GPU will be updated to provide a planning horizon year of 2042. The City of Fowler's city limits, sphere of influence, and planning area is depicted in Figure 1.

EXISTING SETTING

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

- **Carbon Dioxide.** Carbon dioxide (CO₂) is a colorless, odorless gas. CO₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. Several specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO₂ emissions. The atmospheric lifetime of CO₂ is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2018).

Figure 1. Proposed General Plan Update Focus Areas



Source: City of Fowler Community Report 2021

- **Methane.** Methane (CH₄) is a colorless, odorless gas that is not flammable under most circumstances. CH₄ is the major component of natural gas, about 87 percent by volume. It is also formed and released into the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane into the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2018).
- **Nitrous Oxide.** Nitrous oxide (N₂O) is a clear, colorless gas with a slightly sweet odor. N₂O is produced by both natural and human-related sources. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N₂O is approximately 114 years (U.S. EPA 2018).
- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 270 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2018).
- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and non-toxic. There are seven PFC gases: perfluoromethane (CF₄), perfluoroethane (C₂F₆), perfluoropropane (C₃F₈), perfluorobutane (C₄F₁₀), perfluorocyclobutane (C₄F₈), perfluoropentane (C₅F₁₂), and perfluorohexane (C₆F₁₄). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF₄ and C₂F₆ as byproducts. The estimated atmospheric lifetimes for PFCs range from 2,600 to 50,000 years (U.S. EPA 2018).
- **Nitrogen Trifluoride.** Nitrogen trifluoride (NF₃) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalent (CO₂e). While NF₃ may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF₃ was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).
- **Sulfur Hexafluoride.** Sulfur hexafluoride (SF₆) is an inorganic compound that is colorless, odorless, non-toxic, and generally non-flammable. SF₆ is primarily used as an electrical insulator in high-

voltage equipment. The electric power industry uses roughly 80 percent of all SF₆ produced worldwide. Leaks of SF₆ occur from aging equipment and during equipment maintenance and servicing. SF₆ has an atmospheric life of 3,200 years (U.S. EPA 2018).

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

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule. Often, estimates of GHG emissions are presented in CO₂e, which relates each gas by its global warming potential (GWP). Expressing GHG emissions in CO₂e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. Table 1 provides a summary of the GWP for GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, CH₄ traps over 25 times more heat per molecule than CO₂, and N₂O absorbs roughly 298 times more heat per molecule than CO₂. Additional GHGs with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

Table 1. Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Dioxide (N ₂ O)	298

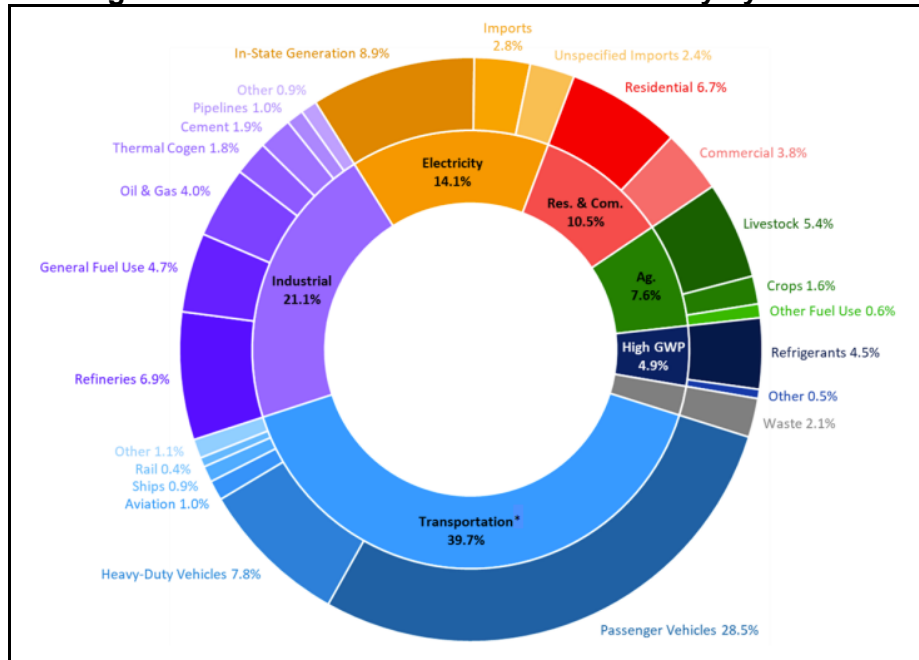
**Based on IPCC GWP values for 100-year time horizon
Source: IPCC 2007*

Sources of GHG Emissions

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

In 2019, GHG emissions within California totaled 418.2 million metric tons (MMT) of CO₂e. GHG emissions, by sector, are summarized in Figure 2. Within California, the transportation sector is the largest contributor, accounting for approximately 40 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 21 percent. Electricity generation totaled roughly 14 percent (ARB 2022a).

Figure 2. California GHG Emissions Inventory by Sector



Source: ARB 2022a

Short-Lived Climate Pollutants

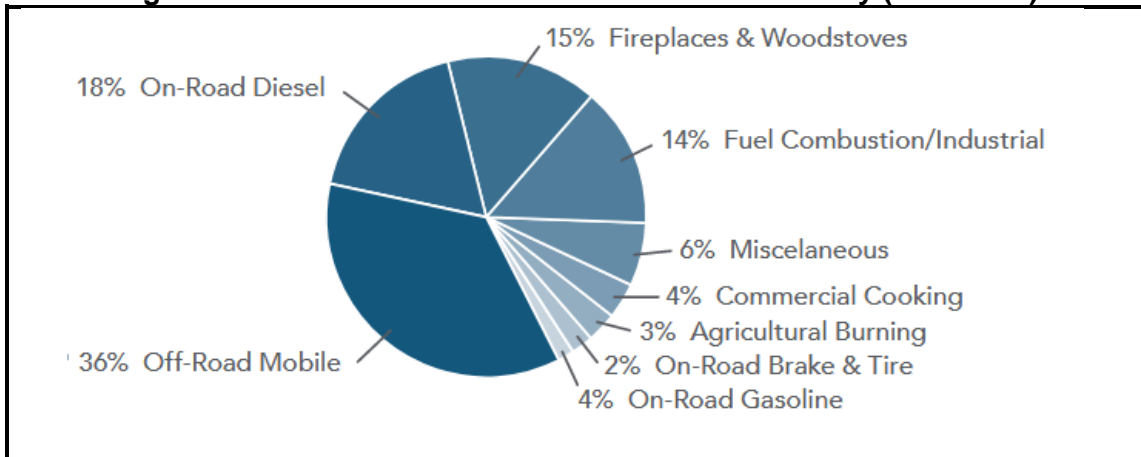
Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and CH₄ also have a dramatic effect on climate change. Though short-lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

As part of the ARB’s efforts to address SLCPs, the ARB has developed a statewide emission inventory for black carbon. The black carbon inventory will help support the implementation of the SLCP Strategy, but it is not part of the State’s GHG Inventory that tracks progress toward the State’s climate targets. The most recent inventory for year 2013 conditions is depicted in Figure 3. As depicted, off-road mobile sources account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes (ARB 2022b).

Effects of Global Climate Change

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

Figure 3. California Black Carbon Emissions Inventory (Year 2013)



Source: ARB 2022b

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

REGULATORY FRAMEWORK

Federal

Executive Order 13514

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

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

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

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

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

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

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On August 28, 2012, U.S. EPA and NHTSA issued their joint rule to extend this national program of coordinated GHG and fuel economy standards to model years 2017 through 2025 passenger vehicles.

U.S. EPA Strategic Plan

The EPA's *Fiscal Year (FY) 2022-2026 Strategic Plan (Strategic Plan)* provides a roadmap to achieve EPA's and the Biden-Harris Administration's environmental priorities over the next four years. The *Strategic Plan* furthers the agency's commitment to protecting human health and the environment for all people, with an emphasis on historically overburdened and underserved communities. For the first time, EPA's *Strategic Plan* includes a strategic goal focused exclusively on addressing climate change, with three primary objectives: 1) Reduce Emissions that Cause Climate Change; 2) Accelerate Resilience and Adaptation to Climate Change Impacts; and 3) Advance International and Subnational Climate Efforts.

State

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply; an increase in air pollution caused by higher temperatures; harm to agriculture; an increase in wildfires; damage to the coastline; and economic

losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the FCAA, to allow the State to require reduced tailpipe emissions of CO₂. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

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

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

Executive Order No. S-3-05

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

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

Executive Order B-30-15

In 2015, Governor Brown signed Executive Order B-30-15, which establishes a California GHG-reduction target of 40 percent below 1990 levels by 2030.

Executive Order B-55-18

In 2018, Governor Brown signed Executive Order B-55-18, which set a target of statewide carbon neutrality by 2045.

Executive Order No. N-19-19

Executive Order N-19-19 (State of California) calls for actions from multiple state agencies to reduce GHG emissions and mitigate the impacts of climate change. This includes a direct acknowledgment of the role the transportation sector must play in tackling climate change.

This executive order empowers the California State Transportation Agency (CalSTA) to leverage more than \$5 billion in discretionary state transportation funds to reduce GHG emissions in the transportation sector and adapt to climate change. Accordingly, CalSTA will work to align transportation spending with the state's Climate Change Scoping Plan where feasible; direct investments to strategically support smart growth to increase infill housing production; reduce congestion through strategies that encourage a reduction in driving, and invest further in walking, biking, and transit; and ensure that overall transportation costs for low-income Californians do not increase as a result of these policies.

Executive Order N-79-20

Executive Order N-79-20 (State of California) calls to accelerate the transition away from fossil fuels by requiring all new cars sold in California to be zero-emission by 2035, all new commercial trucks sold in the state to be zero-emission by 2045 for all operations where feasible, and all new off-road vehicles and equipment sold to be zero-emission by 2035 where feasible. EO N-79-20 reaffirms the state's commitment to implementing EO N-19-19.

Executive Order N-79-20 reiterates the message of EO N-19-19 by highlighting three strategies to expand clean transportation options from the Climate Action Plan for Transportation Infrastructure, while also emphasizing the importance of CAPTI and the urgency of climate change. Executive Order N-79-20 furthers the state's climate goals by explicitly pointing to the critical role of transit, passenger rail, active transportation, Complete Streets, and micro-mobility as tools to expand mobility options, encourage mode shift, and reduce overall vehicle miles traveled (VMT).

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, NF₃, and SF₆. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

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

Climate Change Scoping Plan

The ARB's Climate Change Scoping Plan is the State's plan to achieve GHG reductions in California as initially required by AB 32. This Scoping Plan contains the main strategies to be implemented in order to achieve the State's target GHG-reduction goals. The initial Scoping Plan was first approved by ARB on December 11, 2008 and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. The most recent update released by ARB is the *2017 Climate Change Scoping Plan*, which was released in November 2017. The *2017 Climate Change Scoping Plan* incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and Executive Order B-30-15, while substantially advancing toward the State's goal of achieving an 80 percent reduction below 1990 levels by year 2050. Most notably, the *2017 Climate Change Scoping Plan* encourages zero net increases in GHG emissions. However, the *2017 Climate Change Scoping Plan* recognizes that achieving carbon neutrality increases in GHG emissions may not be feasible or appropriate for all projects and that the inability of a project to mitigate its GHG emissions to zero would not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under the California Environmental Quality Act (CEQA). Under the *2017 Climate Change Scoping Plan*, the ARB recommends local plan-level emissions efficiency targets of 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MTCO_{2e} per capita by 2050. The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

It is important to note that the Scoping Plan is currently being updated. In addition to the State's year 2030 and 2050 GHG-reduction goals, the updated *Draft 2022 Climate Change Scoping Plan* will also address the State's GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18. This *Draft 2022 Climate Change Scoping Plan* is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State's year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State's future year 2050 GHG-reduction goals. The *Draft 2022 Climate Change Scoping Plan* is anticipated to be adopted by the end of this year (ARB 2022e).

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

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

their energy from renewable electrical generation facilities by 2020. The State’s Clean Energy Standards, adopted in 2018, require the state’s utilities to generate 100 percent clean electricity by 2045 and to increase the State’s RPS requirements to 60 percent by 2030.

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

Mandatory Reporting of GHG Emissions

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

Cap-and-Trade Regulation

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

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

Senate Bill 32

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California’s GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State’s ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directed the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target, which has since been incorporated into the *2017 Climate Change Scoping Plan*.

Senate Bill 97

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

- Lead agencies must analyze the GHG emissions of proposed projects and must conclude the significance of those emissions.

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

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

Senate Bill 100

SB 100 was signed by Governor Jerry Brown on September 10, 2018. SB 100 sets a goal of phasing out all fossil fuels from the state’s electricity sector by 2045. SB 100 increases to 60 percent, from 50 percent, how much of California’s electricity portfolio must come from renewables by 2030. It establishes a further goal to have an electric grid that is entirely powered by clean energy by 2045, which could include other carbon-free sources, like nuclear power, that are not renewable.

Senate Bill 375

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land-use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO’s SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld. In 2018, ARB adopted updated SB 375 targets.

California Building Code

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

Green Building Standards

In essence, green building standards are indistinguishable from any other building standards. Both standards are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional

building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

AB 32, which mandated the reduction of GHG emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 MMT of CO_{2e} by 2020.

The 2019 Building Energy Efficiency Standards focused on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The ventilation measures improve indoor air quality, protecting homeowners from air pollution originating from outdoor and indoor sources. Under the newly adopted standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades. The recently updated 2019 Building Energy Efficiency Standards also require new homes three stories or less that are built after January 1, 2020, to be equipped with solar photovoltaic (PV) systems. The solar PV systems are to be sized based on the building's annual electricity demand, the building square footage, and the climate zone within which the home is located. However, under the 2019 Building Energy Efficiency Standards, homes may still rely on other energy sources, such as natural gas. Compliance with the 2019 Building Energy Efficiency Standards, including the solar PV system mandate, residential dwellings will use approximately 50 to 53 percent less energy than those under the 2016 standards. Actual reduction will vary depending on various factors (e.g., building orientation, and sun exposure). Non-residential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The recently updated 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, and further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure's loads. These new solar requirements will become effective on January 1, 2023 and contribute to California's goal of reaching a carbon neutrality footprint by 2045 (CEC 2022).

Short-Lived Climate Pollutant Reduction Strategy

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

includes an incentive program to encourage the use of low-GWP refrigerants, and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment (ARB 2020).

Advanced Clean Cars II

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2022d).

Small Off-Road Engines

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2021).

Regional

SJVAPCD Climate Change Action Plan (2008)

On August 21, 2008, the San Joaquin Valley Air Pollution Control District (SJVAPCD) Governing Board approved the SJVAPCD's *Climate Change Action Plan* with the following goals and actions:

Goals:

- Assist local land-use agencies with CEQA issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.
- Ensure that climate protection measures do not cause an increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

- Authorize the Air Pollution Control Officer to develop GHG significance threshold(s) or other mechanisms to address CEQA projects with GHG emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.
- Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for the establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary GHG reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
- Authorize the Air Pollution Control Officer to enhance the SJVAPCD's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB32 emission reporting requirements to submit simultaneous streamlined reports to the SJVAPCD and the state of California with minimal duplication.

- Authorize the Air Pollution Control Officer to develop and administer voluntary GHG emission reduction agreements to mitigate proposed GHG increases from new projects.
- Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

SJVAPCD CEQA Greenhouse Gas Guidance (2009).

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

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

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

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

It is important to note that the SJVAPCD’s Climate Change Action Plan and CEQA GHG Guidance were based on the State’s year 2020 GHG-reduction targets, per AB 32. The SJVAPCD has not released an updated plan or updated CEQA guidance addressing the State’s currently identified future year GHG-reduction targets, such as the State’s year 2030 GHG-reduction target, as outlined in SB 32.

Fresno County Regional Transportation Plan/Sustainable Communities Strategy

The Fresno Council of Governments (FCOGs) 2022 Regional Transportation Plan (RTP) comprehensively assesses all forms of transportation available in Fresno County, as well as travel and goods movement needs through 2042. The County's first RTP was adopted in 1975. Updated editions have been published every four years per federal statutes refinements of the original and subsequent plans, making this the 19th edition. Federal and state legislation mandates that these long-range transportation plans extend at least 20 years into the future. As the federally designated MPO and state-designated Regional Transportation Planning Agency, FCOG has developed the 2022 RTP update through a continuous, comprehensive, and cooperative framework. This process has involved the region's 15 cities, the County of Fresno, staff from related local public agencies, the San Joaquin Valley Air Pollution Control District (SJVAPCD), Caltrans, other state and federal agencies, and the public. The RTP is made up of a variety of different elements or chapters, including an element that establishes the Sustainable Communities Strategies (SCS) for the County. The SCS aligns transportation, housing, and land use decisions toward achieving GHG emissions reduction targets set by the ARB in support of the State's overall GHG-reduction targets established under AB 32 and SB 32.

Rule 4901

On June 20, 2019, the SJVAPCD adopted amendments to Rule 4901 to reduce the public's exposure to harmful particulates from wood smoke. Residential wood burning is one of the largest sources of PM^{2.5} in the San Joaquin Valley during the winter season. Under the rule installation of new wood burning fireplaces and heaters is restricted at elevations below 3,000 ft. The rule also requires any modifications made to an existing fireplace or chimney must install an EPA certified, gas fueled or electric device (SJVAPCD 2021).

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The State CEQA Guidelines do not provide numeric or qualitative thresholds of significance for evaluating GHG emissions associated with proposed development projects. Instead, CEQA leaves the determination of the significance of GHG emissions up to the lead agency and authorizes the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts.

As of August 2022, the SJVAPCD has not adopted a recommended GHG significance threshold based on achieving future year (e.g., SB 32) GHG-reduction targets. However, as previously discussed, the State's

2017 Climate Change Scoping Plan recommends application of local plan-level GHG emissions efficiency targets of 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MTCO_{2e} per capita by 2050. Based on a linear interpolation of these two GHG reduction goals, the efficiency significance threshold for the proposed 2042 GPU would be 3.6 MTCO_{2e} per capita (ARB 2017).

Accordingly, the proposed GPU would be considered to have a potentially significant impact if annual net increases of GHG emissions would exceed the threshold of 3.6 MTCO_{2e}/Capita. It is important to note that the GHG threshold of 3.6 MTCO_{2e}/capita is based on the thresholds identified in the currently adopted *2017 Climate Change Scoping Plan*, which does not address the State's GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18. To achieve carbon neutrality by 2045, it is recommended that future development include measures to support building decarbonization, including the replacement of natural gas service with other alternatives, such as use of electrically-powered equipment (ARB 2022e, CEC 2021). Based on recent GHG threshold updates and supportive documentation prepared by the Bay Area Air Quality Management District (BAAQMD) and Sacramento Metropolitan Air Quality Management District (SMAQMD), it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its "fair share" of what would be required for the State to achieve its carbon neutrality goal (BAAQMD 2022, SMAQMD 2020). As a result, in addition to the GHG threshold of 3.6 MTCO_{2e}/capita noted above, project-generated GHG emissions would also be considered to have a potentially significant impact if future development would not prohibit the installation of natural gas fired appliances/equipment, to the maximum extent possible, or prohibit the installation of electric-vehicle charging stations beyond what is required by current building standards.

The City of Fowler has not adopted an applicable plan, policy, or regulation for the purpose of reducing the emissions of GHGs. Therefore, the significance of the project's consistency with an applicable plan was evaluated in comparison to the GHG-reduction strategies contained in the 2022 Fresno County RTP/SCS; as well as, State's currently adopted *2017 Climate Change Scoping Plan*.

Methodology

Short-term GHG emissions associated with construction activities are largely dependent on the type of development proposed, off-road equipment and on-road vehicles required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

Long-term operational increases in GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod) (CAPCOA 2020) for land uses while vehicle emissions were calculated using ARB's Emission Factor 2021 (EMFAC2021) v1.0.2 (ARB 2022c). Modeling was conducted for the proposed GPU based on projected increases in land use types and trip-generation rates identified in the traffic analysis prepared for this project. Emissions modeling files are provided in Appendix A.

Relevant Proposed GPU Goals and Policies

The 2042 General Plan includes a number of goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include the following:

Goals

- LU-1** Growth occurs logically and efficiently.
- LU-2** A wide range of housing types are available to accommodate all housing needs in the community.
- LU-3** Thriving commercial centers are located throughout the City.
- CH-1** Opportunities for physical activity, such as walking and biking, are integrated into the built environment.
- CH-2** Impacts from pollution are minimized through thoughtful and deliberate land use planning.
- MOB-1** Fowler's streets are a safe and enjoyable environment for pedestrians, cyclists, motorists, and people of all ages and abilities.
- MOB-2** The circulation system is safe, connected, and well-integrated with public transit and neighboring jurisdictions.
- MOB-3** Goods movement throughout the planning area is efficient and safe.
- MOB-4** The circulation system is adequately maintained.
- MOB-5** Safe, well-designed, multi-modal connections exist across SR 99, Golden State Boulevard, and the Union Pacific Railroad.

Policies

- LU-13** Planned unit developments may include any combination of single family and multifamily dwellings. Planned unit developments larger than 10 acres in size may also include related office and commercial uses. (Land Use Element, Policy 4.3.4)
Action Item LU-13a. Review and revise the Zoning Ordinance, as necessary, to reflect increased density allowances for planned unit developments at the City's discretion. Granting of additional density (not to exceed 25%) will depend on the developer's demonstration of the quality of design in such areas as access, circulation, building placement, parking, provision of open space, and architectural design and compatibility with the surrounding area. (Land Use Element, Policy 4.3.3)
- LU-18** Residential uses shall be permitted in the Community Commercial designation in support of mixed-use development. (Land Use Element, Policy 4.3.7)
- LU-19** Support neighborhood-serving commercial uses located near residential development with strong connectivity through walkable infrastructure.
- LU-21** Encourage large, employment-generating developments to provide services such as cafeterias, childcare, and business support services that reduce the need for vehicle trips. (Land Use Element, Policy 4.6.5)
- CDES-16** Locate parking areas within commercial projects in a manner that promotes pedestrian activity.
- CDES-18** New commercial projects are designed in such a way that they enhance Fowler's character. Action Item CDES-18a includes adoption of commercial standards in consideration of design principles that support the design of commercial sites with human scale and pedestrian amenities.
- CDES-31** Electric vehicle charging facilities shall be permitted in accordance with the most recent state regulations.
- CH-1** Implement an active transportation network that links residential uses with schools, shopping, entertainment, recreation, and employment centers.
- CH-2** Promote walking and bicycling and reduce vehicle miles traveled by allowing complementary land uses in close proximity to one another.

- CH-3** Consider pedestrian and bicyclist safety and comfort in the design and development of streets, parks, and public spaces.
- CH-4** Require Street trees or other shade coverage along key pedestrian and bicycle routes and near transit stops.
- CH-6** Evaluate land use decisions for consistency with siting recommendations as outlined in ARB’s Land Use Compatibility Handbook.
- OS-10** The City shall implement the community trail network.
- OS-11** Neighborhood trails should be planned as part of a connected, City-wide open space network which connects neighborhoods, parks, community trails, and other destinations including the downtown and shopping districts.
- OS-12** Placement of neighborhood trails should be constructed along the most direct alignment possible to close network gaps in the trail system. Neighborhood trails may be required to be constructed as part a new development in order to accommodate that connection.
- MOB-4** Support the creation of a transportation network that provides for efficient movement of people and goods while accounting for environmental effects.

- MOB-9** New development may be required to provide off-site pedestrian and/or bicycle facilities to address gaps in the active transportation network.
- MOB-10** Develop a multi-purpose recreational bikeway network and support facilities.
- MOB-11** Ensure street and road projects are adequately designed to accommodate safe and convenient pedestrian and bicyclist access.
- MOB-12** Require traffic calming techniques in the design of new local streets where such techniques will manage traffic flow and improve safety for pedestrian and bicyclist users.
- MOB-13** Coordinate with Caltrans, FCOG, Fresno County Rural Transit Agency (FCRTA), and other responsible agencies to identify the need for additional mobility infrastructure and/or services along major commuter travel corridors.
- MOB-14** Identify opportunities for a multi-modal transit hub within the City.
- MOB-15** Support the development of paratransit service programs.
- MOB-16** Support transit operator efforts to maximize return for short- and long-range transit needs.
- MOB-17** Incorporate the potential for public transit service expansion throughout the City.
- MOB-18** Improve route options and access for public transit City-wide, specifically west of SR 99.

IMPACTS AND MITIGATION MEASURES

Impact GHG-1: Would the General Plan generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Annual operational emissions associated with existing (year 2019) conditions and future year 2042 GPU buildout conditions are summarized in Table 2. As noted, estimated GHG emissions total approximately 81,162 MTCO_{2e}/year for existing conditions and would increase to approximately 263,687 MTCO_{2e}/year under future proposed GPU buildout conditions. Estimated increases in GHG emissions would be largely associated with increases in motor vehicle use, and energy consumption. To a somewhat lesser extent, waste generation, water use, and area sources would also contribute to overall increases in projected future community wide GHG emissions.

Table 2. Annual Operational GHG Emissions at Buildout

Source	2019 Emissions (MTCO ₂ e)	2042 Emissions (MTCO ₂ e)
Area ^{1,2}	1,445	7,045
Energy Use ¹	19,522	50,203
Mobile ³	50,847	173,818
Waste ¹	5,933	23,143
Water ¹	3,415	9,478
Total:	81,162	263,687
Population:	6,808	48,404
MTCO ₂ e/Capita:	11.9	5.4
Significance Threshold (MTCO ₂ e/Capita):	NA	3.6
<ol style="list-style-type: none"> 1. Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update. 2. Emissions exclude wood burning hearths but allow for natural gas hearths as per rule 4901. 3. Trip-generation rates derived from the traffic analysis prepared for this project and emissions were calculated using EMFAC data. <p>Totals may not sum due to rounding. Refer to Appendix A for emissions modeling assumptions and results.</p>		

As noted in Table 2, GHG emissions per capita are projected to decrease substantially in future year, from approximately 11.9 MTCO₂e/capita in 2019 to 5.4 MTCO₂e/capita in 2042. However, per capita GHG emissions in year 2042 with GPU buildout, would still be projected to exceed the significance threshold of 3.6 MTCO₂e/capita. It is important to note that estimated year 2042 GHG emissions are conservative and do not fully account for future GHG reductions associated with existing and future building standards and regulations, such as the Advanced Clean Car II rule and the recently adopted Small Off-Road Engine regulation. Nonetheless, predicted future year GHG emissions would still be anticipated to exceed the GHG significance threshold. It is important to reiterate that the GHG threshold of 3.6 MTCO₂e/capita is based on the thresholds identified in the currently adopted *2017 Climate Change Scoping Plan*, which does not address the States GHG-reduction target of achieving carbon neutrality by 2045. To achieve carbon neutrality by 2045, it is recommended that future development not include natural gas service and that alternatives, such as use of electrically-powered equipment be used (ARB 2022e, CEC 2021). As previously discussed, it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. Implementation of the proposed GPU does not identify policies that would prohibit the installation of natural gas appliances for future development nor promote the installation of electric vehicle charging stations beyond that required under current regulatory requirements. For these reasons and given that future GHG emissions associated with implementation of the GPU would exceed the GHG threshold of 3.6 MTCO₂e/capita, this impact would be considered **potentially significant**.

Proposed GPU Policies that Provide Mitigation

The proposed GPU includes a number of goals and policies that would reduce GHG emissions, primarily by promoting alternatives to personal vehicle use. Some of the more relevant goals include GPU goals: LU-1, LU-2, LU-3, CH-1, CH-2, MOB-1, MOB-2, MOB-3, MOB-4, MOB-5. Some of the more relevant GPU policies include LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, OS-10, OS-11, OS-12, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18. These goals and policies would promote the implementation of the Transportation Control Measures and would help to reduce project-generated emissions.

Proposed Mitigation Measure

In addition to Air Quality Mitigation Measures AQ-1 and AQ-2, the following measures shall be implemented to reduce project-generated emissions of GHGs:

- MM GHG-1:** The City shall develop a Climate Action Plan to identify ways to reduce GHG emissions and limit climate change impacts on the residents of the city of Fowler. The Climate Action Plan shall integrate the state’s future GHG-reduction goals, including the State’s goal of attaining carbon neutrality by 2045.

- MM GHG-2:** Until the City adopts a qualified Climate Action Plan consistent with Mitigation Measure GHG-1 the following measures shall be applied to new land use development projects:
 - a. Land use development projects shall be constructed with electrically-powered appliances and building mechanical equipment in place of natural-gas fueled equipment.
 - b. Land use development projects shall, to the maximum extent possible, exceed the California Green Building Standard Code Tier 2 requirements for electric vehicle charging infrastructure.

Significance After Mitigation

For land use plans, the analysis of GHG emissions is typically conducted based on per capita emission rates. For the City of Fowler, the estimated existing year 2019 population was 6,808. Under proposed GPU buildout conditions, the population would increase approximately 41,596, to a total of approximately 48,404 individuals (Kittelson & Associates 2022). Based on these population estimates and the estimated community-wide GHG emissions noted in Table 2, estimated emissions would total approximately 11.9 MTCO₂e/Capita under existing conditions and approximately 5.4 MTCO₂e/Capita under future proposed GPU buildout conditions. Estimated GHG emissions would exceed the GHG significance threshold of 3.6 MTCO₂e/Capita for year 2042. While implementation of the GPU policies and proposed mitigation measures would reduce GHG emissions, it may not be possible to reduce the GHG emissions from build out to below the recommended threshold given uncertainties in the timing and effectiveness of these measures. Therefore, this impact would be considered **significant and unavoidable**.

Impact GHG-2: Would the General Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The County of Fresno and the City of Fowler have not adopted an applicable plan, policy, or regulation for the purpose of reducing the emissions of GHGs. Therefore, the significance of the project’s consistency with an applicable plan was evaluated in comparison to the GHG-reduction strategies contained in the 2022 Fresno County RTP/SCS; as well as, State’s 2017 Climate Change Scoping Plan.

Climate Change Scoping Plan

The *2017 Climate Change Scoping Plan* was released in November 2017. The *2017 Climate Change Scoping Plan* includes measures to reduce GHG emissions associated with transportation, electricity consumption, natural gas usage, water conservation, green buildings, and recycling and waste management. The *2017*

Climate Change Scoping Plan incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and Executive Order B-30-15, while substantially advancing toward the State’s goal of achieving an 80 percent reduction below 1990 levels by year 2050. As mentioned earlier, the *2017 Climate Change Scoping Plan*, recommends local plan-level targets of no more than 6.0 MTCO_{2e} per capita by 2030 and no more than 2.0 MT MTCO_{2e} per capita by 2050. Based on a linear interpolation of these two GHG reduction goals, the proposed target for the proposed project would be no more than 3.6 MTCO_{2e} per capita by 2042. As shown in Table 2, the City is projected to emit 5.4 MTCO_{2e}/Capita in future year 2042 GPU buildout conditions, which is above the threshold of 3.6 MTCO_{2e}/Capita. As a result, projected GHG emissions associated with implementation of the proposed GPU would not be consistent with the recommended plan-level GHG-reduction targets specified in the State’s *2017 Climate Change Scoping Plan*. Therefore, development facilitated by the proposed GPU would conflict with the currently adopted *2017 Climate Change Scoping Plan*.

It is important to note that the State’s Climate Change Scoping Plan is currently being updated. In addition to the State’s year 2030 and 2050 GHG-reduction goals addressed in the currently adopted *2017 Climate Change Scoping Plan*, the updated *Draft 2022 Climate Change Scoping Plan* will also address the State’s GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18. This *Draft 2022 Climate Change Scoping Plan* is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State’s year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State’s future year 2050 GHG-reduction goals. The *Draft 2022 Climate Change Scoping Plan* is anticipated to be adopted by the end of this year (ARB 2022e). As noted in Impact GHG-1, it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. This impact would be considered **potentially significant**.

FCOG RTP/SCS

In 2022, FCOG adopted the *2022 Fresno County RTP/SCS*. The SCS component provides goals and policies needed for the FCOG region to meet the GHG-reduction targets set by the ARB.

The proposed GPU’s consistency with the goals and policies contained in the 2022 Fresno County RTP/SCS needed to meet the GHG-reduction strategies set forth by the ARB is summarized in Table 3. Proposed GPU policies that correspond to the sustainability strategies identified in the SCS are also identified. As shown, the proposed GPU would be consistent with the goals identified in the Fresno County 2022 RTP/SCS. In addition, based on the traffic analysis prepared for the project, the proposed GPU would decrease the VMT per capita by 39% and the VMT per employee 53% in comparison to existing conditions. Both metrics, VMT per capita and VMT per employee were found to result in an impact that was less than significant (Kittleson 2022). For these reasons, the proposed GPU would not conflict with the Fresno County 2022 RTP/SCS.

Proposed GPU Policies that Provide Mitigation

The proposed GPU includes a number of goals and policies that would reduce GHG emissions, primarily by promoting alternatives to personal vehicle use. Some of the more relevant goals include GPU goals: LU-1, LU-2, LU-3, CH-1, CH-2, MOB-1, MOB-2, MOB-3, MOB-4, MOB-5. Some of the more relevant GPU

policies include LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, OS-10, OS-11, OS-12, MOB-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18. These goals and policies would promote the implementation of the Transportation Control Measures and would help to reduce project-generated emissions.

Proposed Mitigation Measure

The Mitigation Measures AQ-1, AQ-2, GHG-1, and GHG-2 would help to reduce the GHG emissions of the proposed GPU.

Significance After Mitigation

The future development facilitated by the proposed GPU would not conflict with the FCOG’s 2022 RTP/SCS. Implementation of Mitigation Measure GHG-1 would require the City to develop a Climate Action Plan to incorporate measures to reduce GHG emissions associated with future development. Mitigation Measure GHG-2 would require implementation of additional measures for land use development projects in order to contribute its “fair share” of what would be required to achieve the State’s future year 2045 carbon neutrality goal. However, while policies contained in the GPU, proposed Mitigation Measures, and implementation of future regulatory requirements would reduce the GHG emissions at buildout, the extent of GHG reductions attributable to these measures cannot be accurately quantified at this time and projected future year GHG emissions could potentially exceed applicable thresholds given uncertainties in the timing and effectiveness of these measures. Therefore, this impact would be considered **significant and unavoidable**.

Table 3. Consistency with the FCOG 2022 RTP/SCS

SCS Goals	Project Consistency
<p>Goal 1: Improve mobility and accessibility for all.</p> <p>-Policy 1: Encourage and prioritize full, fair, and equitable participation by all affected communities in transportation decision-making and planning processes.</p> <p>- Policy 2: Actively work to ensure equitable distribution of the benefits and burdens of transportation projects.</p> <p>-Policy 3: Promote the improvement and expansion of accessible transportation options to serve the needs of all residents, especially those who have historically faced disproportionate transportation burdens.</p>	<p>Consistent: The proposed GPU includes policies that would directly or indirectly improve mobility for all and promote transit-oriented development. The proposed GPU policies that demonstrate consistency with this strategy include, but are not limited to, the following: LU-18, LU-19, LU-21, CDES-16, CDES-18, CH-1, CH-2, CH-3, CH-4, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-16, MOB-17, and MOB-18.</p>
<p>Goal 2: Vibrant communities that are accessible by sustainable transportation options.</p> <p>-Policy 4: Encourage alternatives to single-occupancy vehicles that reduce vehicle miles traveled (VMT) and greenhouse gas emissions.</p> <p>-Policy 5: Support investment in and promotion of active transportation and transit to improve public health and mobility, especially in historically underinvested areas.</p> <p>-Policy 6: Encourage sustainable development that focuses on growth near activity centers and mobility options that achieve greater location efficiency.</p> <p>-Policy 7: Support local jurisdictions’ efforts to minimize the loss of farmland, environmentally sensitive areas, and natural resources.</p> <p>-Policy 8: Support local jurisdictions’ efforts to facilitate the development of diverse housing choices for all income groups.</p> <p>-Policy 9: Facilitate and promote interagency coordination and consistency across planning efforts.</p> <p>-Policy 10: Incentivize and support efforts to improve air quality and minimize pollutants from transportation.</p>	<p>Consistent: The proposed GPU includes policies that would directly or indirectly support expanding sustainable transit options. The proposed GPU policies that demonstrate consistency with this strategy include, but are not limited to, the following: LU-1, LU-2, LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, CH-7, OS-10, OS-11, OS-12, OS-13, MOB-1, MOB-2, MOB-3, MOB-4, MOB-7, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, MOB-19, MOB-20, MOB-21, and MOB-22.</p>

Table 3 Continued. Consistency with the FCOG 2022 RTP/SCS

SCS Goals	Project Consistency
<p>Goal 3: A safe, well-maintained, efficient, and climate-resilient multimodal transportation network.</p> <p>-Policy 11: Prioritize investment in and promote multimodal safety measures to reduce traffic fatalities and incidents in the region.</p> <p>-Policy 12: Promote enhanced Transportation Systems Management (TSM) and Transportation Demand Management (TDM) strategies to reduce congestion and vehicle miles traveled.</p> <p>-Policy 13: Encourage improvements in travel connections across all modes to create an integrated, accessible, and seamless transportation network.</p> <p>-Policy 14: Maximize the cost-effectiveness of transportation improvements.</p> <p>-Policy 15: Encourage investments that increase the system’s resilience to extreme weather events, natural disasters, and pandemics.</p> <p>-Policy 16: Preserve and maintain existing multimodal transportation assets in a state of good repair.</p>	<p>Consistent: The proposed GPU includes policies that would directly or indirectly support transit-oriented development. The GPU policies that demonstrate consistency with this strategy include, but are not limited to, the following: LU-1, LU-2, LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, CH-7, OS-10, OS-11, OS-12, OS-13, MOB-1, MOB-2, MOB-3, MOB-4, MOB-7, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, MOB-19, MOB-20, MOB-21, and MOB-22.</p>
<p>Goal 4: A transportation network that supports a sustainable and vibrant economy.</p> <p>-Policy 17: Support local and regional economic development by leveraging planning and transportation funds that foster public and private investment.</p> <p>-Policy 18: Facilitate efficient, reliable, resilient, and sustainable goods movement.</p>	<p>Consistent: The proposed GPU date includes policies that would directly or indirectly support transit-oriented development. The proposed GPU policies that demonstrate consistency with this strategy include, but are not limited to, the following: LU-1, LU-2, LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, CH-7, OS-10, OS-11, OS-12, OS-13, MOB-1, MOB-2, MOB-3, MOB-4, MOB-7, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, MOB-19, MOB-20, MOB-21, and MOB-22.</p>
<p>Goal 5: A region embracing clean transportation, technology, and innovation.</p> <p>-Policy 19: Support innovative mobility solutions that are accessible, affordable, reduce greenhouse gas emissions, and improve air quality.</p> <p>-Policy 20: Support efforts to expand broadband access throughout the region.</p>	<p>Consistent: The proposed GPU includes policies that would directly or indirectly support transit-oriented development. The proposed GPU policies that demonstrate consistency with this strategy include, but are not limited to, the following: LU-1, LU-2, LU-13, LU-18, LU-19, LU-21, CDES-16, CDES-18, CDES-31, CH-1, CH-2, CH-3, CH-4, CH-6, CH-7, OS-10, OS-11, OS-12, OS-13, MOB-1, MOB-2, MOB-3, MOB-4, MOB-7, MOB-9, MOB-10, MOB-11, MOB-12, MOB-13, MOB-14, MOB-15, MOB-16, MOB-17, MOB-18, MOB-19, MOB-20, MOB-21, and MOB-22.</p>
<p>Source: FCOG 2022</p>	

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APPENDIX A

Emissions Modeling

Emissions - Year 2019

LAND USE	Total Annual VMT *Per Day*
Fowler GP Per Capita 2019	247,894
Fowler GP Per Employee 2019	
Total	247,894

	VMT	Gallons/Mile*	Gallons	BTU/gallon**	BTU	MMBTU	Emissions (Tons/Day/Vehicle Type)								
							ROG	TOG	CO	Nox	PM 10	PM 2.5	CO2	CH4	N2O
Diesel	28305	0.14045320	3975.46364365	137381	546153171	546	0.0058666	0.0066786	0.0277245	0.1366769	0.0057296	0.0034836	44.5433711	0.0000000	0.0009848
Gasoline	216396	0.04654314	10071.75245011	120286	1211490815	1211	0.0599337	0.0648003	0.5216062	0.0506681	0.0043522	0.0015845	94.0741932	0.0000000	0.0001798
Plug-in Hybrid	2056	0.01763230	36.25124929	120286	4360518	4	0.0000803	0.0000849	0.0007959	0.0000299	0.0000287	0.0000097	0.3434475	0.0000000	0.0000001
Electric	1137	0.00000000	0.00000000	0	0	0	0	0	0	0	0.0000155	0.0000044	0	0	0
Total Emissions (lbs per Day)							131.7611628	143.1276731	1100.2531916	374.7496196	20.2520181	10.1643799	277922.0236703	0.0000051	2.3294299
Total Emissions (Tons per Day)							0.0658806	0.0715638	0.5501266	0.1873748	0.0101260	0.0050822	138.9610118	0.0000000	0.0011647
Total Emissions (lbs per Year)							48092.82442	52241.60068	401592.4149	136783.6112	7391.986622	3709.998662	101441538.6	0.001877882	850.2419185
Total Emissions (Tons per Year)							24.04641221	26.12080034	200.7962075	68.39180558	3.695993311	1.854999331	50720.76932	9.38941E-07	0.425120959

*Gallons per mile based on year 2019 conditions for Fresno County. Derived from Emfac2021 (v1.0.2) Emissions Inventory.

**Energy coefficient derived from US EIA.

https://www.eia.gov/energyexplained/index.php?page=about_energy_units

MTCO2e			
GHG	Tons/year	GWP	MTCO2e
CO2	50720.77	1	50720.7693
CH4	9.39E-07	25	2.3474E-05
N2O	0.425121	298	126.686046
Total			50847.4554

Emissions - Year 2042

LAND USE	Total Annual VMT *Per Day*
Fowler GP Per Capita 2042	1,240,395
Fowler GP Per Employee 2042	
Total	1,240,395

	VMT	Gallons/Mile*	Gallons	BTU/gallon**	BTU	MMBTU	Emissions (Tons/Day/Vehicle Type)								
							ROG	TOG	CO	Nox	PM 10	PM 2.5	CO2	CH4	N2O
Diesel	130628	0.12344265	16125.01240872	137381	2215270330	2215	0.0082866	0.0094336	0.0936796	0.2603830	0.0190400	0.0083505	180.5114062	0.0000000	0.0035107
Gasoline	954456	0.03204408	30584.67220509	120286	3678907881	3679	0.1077523	0.1122208	0.8787340	0.0533963	0.0169174	0.0054642	290.0430024	0.0000000	0.0002433
Plug-in Hybrid	35304	0.01355968	478.71346452	120286	57582528	58	0.0021133	0.0021988	0.0124261	0.0005756	0.0004703	0.0001401	4.5397737	0.0000000	0.0000013
Electric	120007	0.00000000	0.00000000	0	0	0	0	0	0	0	0.0035298	0.0010843	0	0	0
Total Emissions (lbs per Day)							236.3044104	247.7064094	1969.6793920	628.7098193	79.9153079	30.0782044	950188.3646237	0.0000013	7.5105822
Total Emissions (Tons per Day)							0.1181522	0.1238532	0.9848397	0.3143549	0.0399577	0.0150391	475.0941823	0.0000000	0.0037553
Total Emissions (lbs per Year)							86251.10979	90412.83944	718932.9781	229479.084	29169.08739	10978.54459	346818753.1	0.000488043	2741.362513
Total Emissions (Tons per Year)							43.12555489	45.20641972	359.466489	114.739542	14.58454369	5.489272295	173409.3765	2.44022E-07	1.370681256

*Gallons per mile based on year 2042 conditions for Fresno County. Derived from Emfac2021 (v1.0.2) Emissions Inventory.

**Energy coefficient derived from US EIA.

https://www.eia.gov/energyexplained/index.php?page=about_energy_units

MTCO2e			
GHG	Tons/year	GWP	MTCO2e
CO2	173409.3765	1	173409.3765
CH4	2.44022E-07	25	6.10054E-06
N2O	1.370681256	298	408.4630144
Total			173817.8396

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

**Fowler 2019
Fresno County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	869.37	1000sqft	19.96	869,370.00	0
Elementary School	381.98	1000sqft	8.77	381,978.00	0
General Heavy Industry	4,374.12	1000sqft	100.42	4,374,121.00	0
General Light Industry	1,438.00	1000sqft	33.01	1,438,003.00	0
City Park	15.80	Acre	15.80	688,248.00	0
Apartments Low Rise	983.00	Dwelling Unit	61.44	983,000.00	2811
Single Family Housing	2,241.00	Dwelling Unit	727.60	4,033,800.00	6409
Regional Shopping Center	415.53	1000sqft	9.54	415,528.00	0
Strip Mall	83.11	1000sqft	1.91	83,112.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2019
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MW hr)	203.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ..

Construction Phase - No Construction

Grading - No Construction

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Architectural Coating - No construction

Vehicle Trips - Mobile calculated separately

Woodstoves -

Area Coating -

Water And Wastewater -

Solid Waste -

Area Mitigation - Natural gas hearths only as per SJVAPCD

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	3,781,056.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	11,343,168.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,386,340.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,159,020.00	0.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	1,100.00	0.00
tblConstructionPhase	NumDays	15,500.00	0.00
tblConstructionPhase	NumDays	1,000.00	0.00
tblConstructionPhase	NumDays	1,550.00	0.00
tblConstructionPhase	NumDays	1,100.00	0.00
tblConstructionPhase	NumDays	600.00	0.00
tblLandUse	LandUseSquareFeet	381,980.00	381,978.00
tblLandUse	LandUseSquareFeet	4,374,120.00	4,374,121.00
tblLandUse	LandUseSquareFeet	1,438,000.00	1,438,003.00
tblLandUse	LandUseSquareFeet	415,530.00	415,528.00
tblLandUse	LandUseSquareFeet	83,110.00	83,112.00
tblSolidWaste	SolidWasteGenerationRate	1.36	1.48
tblTripsAndVMT	VendorTripNumber	1,697.00	1,479.00
tblTripsAndVMT	WorkerTripNumber	4,843.00	4,285.00
tblTripsAndVMT	WorkerTripNumber	969.00	857.00

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tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	46.12	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	21.10	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	37.75	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00

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

tblWater	OutdoorWaterUseRate	18,825,405.32	20,505,394.03
tblWoodstoves	NumberCatalytic	61.44	0.00
tblWoodstoves	NumberCatalytic	727.60	0.00
tblWoodstoves	NumberNoncatalytic	61.44	0.00
tblWoodstoves	NumberNoncatalytic	727.60	0.00

2.0 Emissions Summary

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

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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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)

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

		Highest	
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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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Energy	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	19,375.5958	19,375.5958	1.5089	0.3654	19,522.2063
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	2,394.6012	0.0000	2,394.6012	141.5169	0.0000	5,932.5230
Water						0.0000	0.0000		0.0000	0.0000	563.0716	988.9195	1,551.9911	57.9928	1.3850	3,414.5278
Total	61.1358	11.7590	31.9856	0.0718	0.0000	1.0254	1.0254	0.0000	1.0254	1.0254	2,957.6728	21,800.4146	24,758.0873	201.0841	1.7760	30,314.4248

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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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Energy	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	19,375.5958	19,375.5958	1.5089	0.3654	19,522.2063
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	2,394.6012	0.0000	2,394.6012	141.5169	0.0000	5,932.5230
Water						0.0000	0.0000		0.0000	0.0000	563.0716	988.9195	1,551.9911	57.9928	1.3850	3,414.5278
Total	61.1358	11.7590	31.9856	0.0718	0.0000	1.0254	1.0254	0.0000	1.0254	1.0254	2,957.6728	21,800.4146	24,758.0873	201.0841	1.7760	30,314.4248

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	8/22/2022	8/21/2022	5	0	
2	Site Preparation	Site Preparation	8/23/2022	8/22/2022	5	0	
3	Grading	Grading	8/24/2022	8/23/2022	5	0	

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4	Building Construction	Building Construction	8/25/2022	8/24/2022	5	0
5	Paving	Paving	8/26/2022	8/25/2022	5	0
6	Architectural Coating	Architectural Coating	8/27/2022	8/26/2022	5	0

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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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 - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
General Heavy Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Low Rise	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

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

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
City Park	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Elementary School	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
General Heavy Industry	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
General Light Industry	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Government Office Building	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Regional Shopping Center	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Single Family Housing	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625
Strip Mall	0.482772	0.053013	0.177201	0.181386	0.030694	0.007689	0.014311	0.021176	0.000804	0.000296	0.025348	0.001685	0.003625

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7,975.9881	7,975.9881	1.2904	0.1564	8,054.8565
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7,975.9881	7,975.9881	1.2904	0.1564	8,054.8565
NaturalGas Mitigated	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499
NaturalGas Unmitigated	1.1519	10.2737	7.3449	0.0628		0.7958	0.7958		0.7958	0.7958	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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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					
Apartments Low Rise	1.3415e+007	0.0723	0.6181	0.2630	3.9500e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.8766	715.8766	0.0137	0.0131	720.1307
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	9.50361e+006	0.0512	0.4659	0.3913	2.8000e-003		0.0354	0.0354		0.0354	0.0354	0.0000	507.1490	507.1490	9.7200e-003	9.3000e-003	510.1627
General Heavy Industry	9.05443e+007	0.4882	4.4385	3.7283	0.0266		0.3373	0.3373		0.3373	0.3373	0.0000	4,831.7889	4,831.7889	0.0926	0.0886	4,860.5018
General Light Industry	2.97667e+007	0.1605	1.4592	1.2257	8.7500e-003		0.1109	0.1109		0.1109	0.1109	0.0000	1,588.4625	1,588.4625	0.0305	0.0291	1,597.9019
Government Office Building	1.12323e+007	0.0606	0.5506	0.4625	3.3000e-003		0.0419	0.0419		0.0419	0.0419	0.0000	599.3962	599.3962	0.0115	0.0110	602.9581
Regional Shopping Center	4.40875e+006	0.0238	0.2161	0.1815	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2678	235.2678	4.5100e-003	4.3100e-003	236.6659
Single Family Housing	5.38681e+007	0.2905	2.4822	1.0562	0.0158		0.2007	0.2007		0.2007	0.2007	0.0000	2,874.6096	2,874.6096	0.0551	0.0527	2,891.6920
Strip Mall	881818	4.7500e-003	0.0432	0.0363	2.6000e-004		3.2900e-003	3.2900e-003		3.2900e-003	3.2900e-003	0.0000	47.0572	47.0572	9.0000e-004	8.6000e-004	47.3368
Total		1.1519	10.2737	7.3449	0.0628		0.7959	0.7959		0.7959	0.7959	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.3415e+007	0.0723	0.6181	0.2630	3.9500e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.8766	715.8766	0.0137	0.0131	720.1307
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	9.50361e+006	0.0512	0.4659	0.3913	2.8000e-003		0.0354	0.0354		0.0354	0.0354	0.0000	507.1490	507.1490	9.7200e-003	9.3000e-003	510.1627
General Heavy Industry	9.05443e+007	0.4882	4.4385	3.7283	0.0266		0.3373	0.3373		0.3373	0.3373	0.0000	4,831.7889	4,831.7889	0.0926	0.0886	4,860.5018
General Light Industry	2.97667e+007	0.1605	1.4592	1.2257	8.7500e-003		0.1109	0.1109		0.1109	0.1109	0.0000	1,588.4625	1,588.4625	0.0305	0.0291	1,597.9019
Government Office Building	1.12323e+007	0.0606	0.5506	0.4625	3.3000e-003		0.0419	0.0419		0.0419	0.0419	0.0000	599.3962	599.3962	0.0115	0.0110	602.9581
Regional Shopping Center	4.40875e+006	0.0238	0.2161	0.1815	1.3000e-003		0.0164	0.0164		0.0164	0.0164	0.0000	235.2678	235.2678	4.5100e-003	4.3100e-003	236.6659
Single Family Housing	5.38681e+007	0.2905	2.4822	1.0562	0.0158		0.2007	0.2007		0.2007	0.2007	0.0000	2,874.6096	2,874.6096	0.0551	0.0527	2,891.6920
Strip Mall	881818	4.7500e-003	0.0432	0.0363	2.6000e-004		3.2900e-003	3.2900e-003		3.2900e-003	3.2900e-003	0.0000	47.0572	47.0572	9.0000e-004	8.6000e-004	47.3368
Total		1.1519	10.2737	7.3449	0.0628		0.7959	0.7959		0.7959	0.7959	0.0000	11,399.6077	11,399.6077	0.2185	0.2090	11,467.3499

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	4.0608e+006	375.7208	0.0608	7.3700e-003	379.4360
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	2.59745e+006	240.3259	0.0389	4.7100e-003	242.7023
General Heavy Industry	3.76612e+007	3,484.5546	0.5637	0.0683	3,519.0106
General Light Industry	1.23812e+007	1,145.5559	0.1853	0.0225	1,156.8834
Government Office Building	7.68523e+006	711.0665	0.1150	0.0139	718.0977
Regional Shopping Center	3.29098e+006	304.4940	0.0493	5.9700e-003	307.5050
Single Family Housing	1.78696e+007	1,653.3669	0.2675	0.0324	1,669.7158
Strip Mall	658247	60.9035	9.8500e-003	1.1900e-003	61.5057
Total		7,975.9881	1.2904	0.1564	8,054.8564

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5.3 Energy by Land Use - Electricity

Mitigated

Land Use	Electricity Use kWh/yr	Total CO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Apartments Low Rise	4.0608e+006	375.7208	0.0608	7.3700e-003	379.4360
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	2.59745e+006	240.3259	0.0389	4.7100e-003	242.7023
General Heavy Industry	3.76612e+007	3,484.5546	0.5637	0.0683	3,519.0106
General Light Industry	1.23812e+007	1,145.5559	0.1853	0.0225	1,156.8834
Government Office Building	7.68523e+006	711.0665	0.1150	0.0139	718.0977
Regional Shopping Center	3.29098e+006	304.4940	0.0493	5.9700e-003	307.5050
Single Family Housing	1.78696e+007	1,653.3669	0.2675	0.0324	1,669.7158
Strip Mall	658247	60.9035	9.8500e-003	1.1900e-003	61.5057
Total		7,975.9881	1.2904	0.1564	8,054.8564

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

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

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677
Unmitigated	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

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

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	9.9663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.1334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1411	1.2060	0.5132	7.7000e-003		0.0975	0.0975		0.0975	0.0975	0.0000	1,396.6606	1,396.6606	0.0268	0.0256	1,404.9603
Landscaping	0.7431	0.2793	24.1274	1.2700e-003		0.1321	0.1321		0.1321	0.1321	0.0000	39.2386	39.2386	0.0388	0.0000	40.2074
Total	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

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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	9.9663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.1334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1411	1.2060	0.5132	7.7000e-003		0.0975	0.0975		0.0975	0.0975	0.0000	1,396.6606	1,396.6606	0.0268	0.0256	1,404.9603
Landscaping	0.7431	0.2793	24.1274	1.2700e-003		0.1321	0.1321		0.1321	0.1321	0.0000	39.2386	39.2386	0.0388	0.0000	40.2074
Total	59.9839	1.4853	24.6406	8.9700e-003		0.2296	0.2296		0.2296	0.2296	0.0000	1,435.8993	1,435.8993	0.0655	0.0256	1,445.1677

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,551.991 1	57.9928	1.3850	3,414.527 8
Unmitigated	1,551.991 1	57.9928	1.3850	3,414.527 8

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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

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	64.0464 / 40.3771	65.4590	2.0943	0.0502	132.7639
City Park	0 / 20.5054	6.6403	1.0700e-003	1.3000e-004	6.7060
Elementary School	11.0762 / 28.4818	18.2826	0.3633	8.8100e-003	29.9912
General Heavy Industry	1011.52 / 0	827.3183	33.0422	0.7882	1,888.2541
General Light Industry	332.538 / 0	271.9824	10.8627	0.2591	620.7670
Government Office Building	172.709 / 105.854	175.5375	5.6473	0.1353	357.0234
Regional Shopping Center	30.7794 / 18.8648	31.2835	1.0064	0.0241	63.6271
Single Family Housing	146.01 / 92.0499	149.2305	4.7744	0.1144	302.6692
Strip Mall	6.15617 / 3.77313	6.2570	0.2013	4.8200e-003	12.7260
Total		1,551.9911	57.9929	1.3849	3,414.5278

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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			
Apartments Low Rise	64.0464 / 40.3771	65.4590	2.0943	0.0502	132.7639
City Park	0 / 20.5054	6.6403	1.0700e-003	1.3000e-004	6.7060
Elementary School	11.0762 / 28.4818	18.2826	0.3633	8.8100e-003	29.9912
General Heavy Industry	1011.52 / 0	827.3183	33.0422	0.7882	1,888.2541
General Light Industry	332.538 / 0	271.9824	10.8627	0.2591	620.7670
Government Office Building	172.709 / 105.854	175.5375	5.6473	0.1353	357.0234
Regional Shopping Center	30.7794 / 18.8648	31.2835	1.0064	0.0241	63.6271
Single Family Housing	146.01 / 92.0499	149.2305	4.7744	0.1144	302.6692
Strip Mall	6.15617 / 3.77313	6.2570	0.2013	4.8200e-003	12.7260
Total		1,551.9911	57.9929	1.3849	3,414.5278

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2,394.601 2	141.5169	0.0000	5,932.523 0
Unmitigated	2,394.601 2	141.5169	0.0000	5,932.523 0

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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			
Apartments Low Rise	452.18	91.7885	5.4245	0.0000	227.4020
City Park	1.48	0.3004	0.0178	0.0000	0.7443
Elementary School	496.57	100.7992	5.9571	0.0000	249.7258
General Heavy Industry	5423.91	1,101.0047	65.0675	0.0000	2,727.6926
General Light Industry	1783.12	361.9573	21.3911	0.0000	896.7338
Government Office Building	808.51	164.1202	9.6992	0.0000	406.6009
Regional Shopping Center	436.31	88.5670	5.2342	0.0000	219.4210
Single Family Housing	2307.24	468.3489	27.6786	0.0000	1,160.3145
Strip Mall	87.27	17.7150	1.0469	0.0000	43.8882
Total		2,394.6012	141.5169	0.0000	5,932.5230

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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

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	452.18	91.7885	5.4245	0.0000	227.4020
City Park	1.48	0.3004	0.0178	0.0000	0.7443
Elementary School	496.57	100.7992	5.9571	0.0000	249.7258
General Heavy Industry	5423.91	1,101.0047	65.0675	0.0000	2,727.6926
General Light Industry	1783.12	361.9573	21.3911	0.0000	896.7338
Government Office Building	808.51	164.1202	9.6992	0.0000	406.6009
Regional Shopping Center	436.31	88.5670	5.2342	0.0000	219.4210
Single Family Housing	2307.24	468.3489	27.6786	0.0000	1,160.3145
Strip Mall	87.27	17.7150	1.0469	0.0000	43.8882
Total		2,394.6012	141.5169	0.0000	5,932.5230

9.0 Operational Offroad

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

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

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

**Fowler GP 2042
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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	1,826.21	1000sqft	41.92	1,826,209.00	0
Elementary School	537.09	1000sqft	12.33	537,090.00	0
General Heavy Industry	14,442.10	1000sqft	331.54	14,442,100.00	0
General Light Industry	7,784.08	1000sqft	178.70	7,784,084.00	0
City Park	55.03	Acre	55.03	2,397,106.00	0
Apartments Low Rise	2,376.00	Dwelling Unit	148.50	2,376,000.00	6795
Single Family Housing	13,342.00	Dwelling Unit	4,331.82	24,015,600.00	38158
Regional Shopping Center	926.00	1000sqft	21.26	925,998.00	0
Strip Mall	247.25	1000sqft	5.68	247,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MW hr)	25.42	CH4 Intensity (lb/MW hr)	0.004	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity Factors adjusted based on RPS

Land Use - Full 2042 buildout

Construction Phase - No construction

Trips and VMT - No construction

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

Grading - No construction

Architectural Coating - No construction

Vehicle Trips - Mobile calculated separately

Woodstoves -

Area Coating -

Water And Wastewater -

Solid Waste -

Area Mitigation - NAtural Gas Hearths only as per SJVAPCD

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	12,881,364.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	38,644,091.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	17,814,330.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	53,442,990.00	0.00
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	NumDays	155,000.00	1.00
tblConstructionPhase	NumDays	10,000.00	1.00
tblConstructionPhase	NumDays	15,500.00	1.00
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	NumDays	6,000.00	1.00
tblGrading	AcresOfGrading	3.00	0.00
tblGrading	AcresOfGrading	1.50	0.00
tblLandUse	LandUseSquareFeet	1,826,210.00	1,826,209.00
tblLandUse	LandUseSquareFeet	7,784,080.00	7,784,084.00
tblLandUse	LandUseSquareFeet	2,397,106.80	2,397,106.00
tblLandUse	LandUseSquareFeet	926,000.00	925,998.00
tblLandUse	LandUseSquareFeet	247,250.00	247,246.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.004

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tblProjectCharacteristics	CO2IntensityFactor	203.98	25.42
tblProjectCharacteristics	N2OIntensityFactor	0.004	0
tblSolidWaste	SolidWasteGenerationRate	4.73	0.12
tblTripsAndVMT	VendorTripNumber	6,296.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	18,041.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	3,608.00	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	HW_TL	10.80	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	46.12	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	21.10	0.00
tblVehicleTrips	SU_TR	8.55	0.00

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tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	37.75	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	OutdoorWaterUseRate	65,567,218.67	1,644,244.26
tblWoodstoves	NumberCatalytic	148.50	0.00
tblWoodstoves	NumberCatalytic	4,331.82	0.00
tblWoodstoves	NumberNoncatalytic	148.50	0.00
tblWoodstoves	NumberNoncatalytic	4,331.82	0.00

2.0 Emissions Summary

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-22-2022	9-30-2022	0.0505	0.0505
		Highest	0.0505	0.0505

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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Energy	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	49,914.5767	49,914.5767	1.4931	0.8439	50,203.3971
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9,341.4269	0.0000	9,341.4269	552.0625	0.0000	23,142.9898
Water						0.0000	0.0000		0.0000	0.0000	2,103.1295	452.4579	2,555.5874	216.0828	5.1005	9,477.6057
Total	255.2299	48.4696	146.8360	0.2974	0.0000	4.3371	4.3371	0.0000	4.3371	4.3371	11,444.5564	57,367.2901	68,811.8465	769.9516	6.0693	89,869.2778

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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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Energy	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	49,914.5767	49,914.5767	1.4931	0.8439	50,203.3971
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9,341.4269	0.0000	9,341.4269	552.0625	0.0000	23,142.9898
Water						0.0000	0.0000		0.0000	0.0000	2,103.1295	452.4579	2,555.5874	216.0828	5.1005	9,477.6057
Total	255.2299	48.4696	146.8360	0.2974	0.0000	4.3371	4.3371	0.0000	4.3371	4.3371	11,444.5564	57,367.2901	68,811.8465	769.9516	6.0693	89,869.2778

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	8/22/2022	8/22/2022	5	1	
2	Site Preparation	Site Preparation	8/23/2022	8/23/2022	5	1	
3	Grading	Grading	8/24/2022	8/24/2022	5	1	

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4	Building Construction	Building Construction	8/25/2022	8/25/2022	5	1
5	Paving	Paving	8/26/2022	8/26/2022	5	1
6	Architectural Coating	Architectural Coating	8/27/2022	8/29/2022	5	1

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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

Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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

3.1 Mitigation Measures Construction

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

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	1.5900e-003	0.0165	9.8500e-003	2.0000e-005	9.0300e-003	8.1000e-004	9.8400e-003	4.9700e-003	7.4000e-004	5.7100e-003	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	1.5900e-003	0.0165	9.8500e-003	2.0000e-005	9.0300e-003	8.1000e-004	9.8400e-003	4.9700e-003	7.4000e-004	5.7100e-003	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0194	0.0145	3.0000e-005		8.2000e-004	8.2000e-004		7.5000e-004	7.5000e-004	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488
Total	1.8100e-003	0.0194	0.0145	3.0000e-005	3.0100e-003	8.2000e-004	3.8300e-003	1.6600e-003	7.5000e-004	2.4100e-003	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					3.0100e-003	0.0000	3.0100e-003	1.6600e-003	0.0000	1.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0194	0.0145	3.0000e-005		8.2000e-004	8.2000e-004		7.5000e-004	7.5000e-004	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488
Total	1.8100e-003	0.0194	0.0145	3.0000e-005	3.0100e-003	8.2000e-004	3.8300e-003	1.6600e-003	7.5000e-004	2.4100e-003	0.0000	2.7267	2.7267	8.8000e-004	0.0000	2.7488

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656
Total	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656
Total	8.5000e-004	7.8100e-003	8.1800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.8000e-004	3.8000e-004	0.0000	1.1586	1.1586	2.8000e-004	0.0000	1.1656

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6 Paving - 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	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095

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3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	5.5600e-003	7.2900e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.6000e-004	2.6000e-004	0.0000	1.0014	1.0014	3.2000e-004	0.0000	1.0095

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3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

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3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	1.0000e-004	7.0000e-004	9.1000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

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3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
General Heavy Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Low Rise	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

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

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	0.00	0.00	0.00	48.40	15.90	35.70	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
City Park	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Elementary School	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
General Heavy Industry	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
General Light Industry	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Government Office Building	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Regional Shopping Center	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Single Family Housing	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131
Strip Mall	0.558400	0.056984	0.177680	0.121787	0.018699	0.005186	0.014995	0.021540	0.000643	0.000266	0.020696	0.000992	0.002131

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,881.7892	3,881.7892	0.6108	0.0000	3,897.0599
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,881.7892	3,881.7892	0.6108	0.0000	3,897.0599
NaturalGas Mitigated	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7875	46,032.7875	0.8823	0.8439	46,306.3373
NaturalGas Unmitigated	4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7875	46,032.7875	0.8823	0.8439	46,306.3373

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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					
Apartments Low Rise	3.24253e+007	0.1748	1.4941	0.6358	9.5400e-003		0.1208	0.1208		0.1208	0.1208	0.0000	1,730.3385	1,730.3385	0.0332	0.0317	1,740.6211
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.33628e+007	0.0721	0.6550	0.5502	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	713.0899	713.0899	0.0137	0.0131	717.3274
General Heavy Industry	2.98951e+008	1.6120	14.6545	12.3098	0.0879		1.1137	1.1137		1.1137	1.1137	0.0000	15,953.1889	15,953.1889	0.3058	0.2925	16,047.9907
General Light Industry	1.61131e+008	0.8688	7.8986	6.6348	0.0474		0.6003	0.6003		0.6003	0.6003	0.0000	8,598.5392	8,598.5392	0.1648	0.1576	8,649.6360
Government Office Building	2.35946e+007	0.1272	1.1566	0.9715	6.9400e-003		0.0879	0.0879		0.0879	0.0879	0.0000	1,259.0988	1,259.0988	0.0241	0.0231	1,266.5810
Regional Shopping Center	9.82484e+006	0.0530	0.4816	0.4046	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.2908	524.2908	0.0101	9.6100e-003	527.4064
Single Family Housing	3.20709e+008	1.7293	14.7778	6.2884	0.0943		1.1948	1.1948		1.1948	1.1948	0.0000	17,114.2532	17,114.2532	0.3280	0.3138	17,215.9546
Strip Mall	2.62328e+006	0.0142	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003	0.0000	139.9882	139.9882	2.6800e-003	2.5700e-003	140.8201
Total		4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7874	46,032.7874	0.8823	0.8439	46,306.3373

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.24253e+007	0.1748	1.4941	0.6358	9.5400e-003		0.1208	0.1208		0.1208	0.1208	0.0000	1,730.3385	1,730.3385	0.0332	0.0317	1,740.6211
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	1.33628e+007	0.0721	0.6550	0.5502	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	713.0899	713.0899	0.0137	0.0131	717.3274
General Heavy Industry	2.98951e+008	1.6120	14.6545	12.3098	0.0879		1.1137	1.1137		1.1137	1.1137	0.0000	15,953.1889	15,953.1889	0.3058	0.2925	16,047.9907
General Light Industry	1.61131e+008	0.8688	7.8986	6.6348	0.0474		0.6003	0.6003		0.6003	0.6003	0.0000	8,598.5392	8,598.5392	0.1648	0.1576	8,649.6360
Government Office Building	2.35946e+007	0.1272	1.1566	0.9715	6.9400e-003		0.0879	0.0879		0.0879	0.0879	0.0000	1,259.0988	1,259.0988	0.0241	0.0231	1,266.5810
Regional Shopping Center	9.82484e+006	0.0530	0.4816	0.4046	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.2908	524.2908	0.0101	9.6100e-003	527.4064
Single Family Housing	3.20709e+008	1.7293	14.7778	6.2884	0.0943		1.1948	1.1948		1.1948	1.1948	0.0000	17,114.2532	17,114.2532	0.3280	0.3138	17,215.9546
Strip Mall	2.62328e+006	0.0142	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003	0.0000	139.9882	139.9882	2.6800e-003	2.5700e-003	140.8201
Total		4.6514	41.2468	27.9031	0.2537		3.2137	3.2137		3.2137	3.2137	0.0000	46,032.7874	46,032.7874	0.8823	0.8439	46,306.3373

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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			
Apartments Low Rise	9.81533e+006	113.1739	0.0178	0.0000	113.6191
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	3.65221e+006	42.1112	6.6300e-003	0.0000	42.2768
General Heavy Industry	1.24346e+008	1,433.7545	0.2256	0.0000	1,439.3947
General Light Industry	6.7021e+007	772.7730	0.1216	0.0000	775.8130
Government Office Building	1.61437e+007	186.1419	0.0293	0.0000	186.8741
Regional Shopping Center	7.3339e+006	84.5623	0.0133	0.0000	84.8949
Single Family Housing	1.06389e+008	1,226.6941	0.1930	0.0000	1,231.5198
Strip Mall	1.95819e+006	22.5785	3.5500e-003	0.0000	22.6674
Total		3,881.7892	0.6108	0.0000	3,897.0599

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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

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	9.81533e+006	113.1739	0.0178	0.0000	113.6191
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	3.65221e+006	42.1112	6.6300e-003	0.0000	42.2768
General Heavy Industry	1.24346e+008	1,433.7545	0.2256	0.0000	1,439.3947
General Light Industry	6.7021e+007	772.7730	0.1216	0.0000	775.8130
Government Office Building	1.61437e+007	186.1419	0.0293	0.0000	186.8741
Regional Shopping Center	7.3339e+006	84.5623	0.0133	0.0000	84.8949
Single Family Housing	1.06389e+008	1,226.6941	0.1930	0.0000	1,231.5198
Strip Mall	1.95819e+006	22.5785	3.5500e-003	0.0000	22.6674
Total		3,881.7892	0.6108	0.0000	3,897.0599

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

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

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851
Unmitigated	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

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

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	42.6824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	203.7113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6880	5.8796	2.5019	0.0375		0.4754	0.4754		0.4754	0.4754	0.0000	6,809.1538	6,809.1538	0.1305	0.1248	6,849.6172
Landscaping	3.4969	1.3433	116.4310	6.1800e-003		0.6480	0.6480		0.6480	0.6480	0.0000	191.1017	191.1017	0.1827	0.0000	195.6679
Total	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

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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	42.6824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	203.7113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6880	5.8796	2.5019	0.0375		0.4754	0.4754		0.4754	0.4754	0.0000	6,809.1538	6,809.1538	0.1305	0.1248	6,849.6172
Landscaping	3.4969	1.3433	116.4310	6.1800e-003		0.6480	0.6480		0.6480	0.6480	0.0000	191.1017	191.1017	0.1827	0.0000	195.6679
Total	250.5785	7.2229	118.9329	0.0437		1.1234	1.1234		1.1234	1.1234	0.0000	7,000.2556	7,000.2556	0.3132	0.1248	7,045.2851

7.0 Water Detail

7.1 Mitigation Measures Water

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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	2,555,587 4	216.0828	5.1005	9,477.605 7
Unmitigated	2,555,587 4	216.0828	5.1005	9,477.605 7

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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

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	154.806 / 97.5951	62.7098	5.0465	0.1191	224.3664
City Park	0 / 1.64424	0.0664	1.0000e-005	0.0000	0.0666
Elementary School	15.574 / 40.0473	7.5287	0.5079	0.0120	23.7967
General Heavy Industry	3339.74 / 0	1,267.9120	108.8581	2.5696	4,755.1064
General Light Industry	1800.07 / 0	683.3860	58.6729	1.3850	2,562.9326
Government Office Building	362.794 / 222.358	146.7063	11.8266	0.2791	525.5543
Regional Shopping Center	68.5912 / 42.0397	27.7368	2.2360	0.0528	99.3631
Single Family Housing	869.285 / 548.028	352.1355	28.3377	0.6688	1,259.8889
Strip Mall	18.3144 / 11.225	7.4060	0.5970	0.0141	26.5308
Total		2,555.5874	216.0828	5.1005	9,477.6057

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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			
Apartments Low Rise	154.806 / 97.5951	62.7098	5.0465	0.1191	224.3664
City Park	0 / 1.64424	0.0664	1.0000e-005	0.0000	0.0666
Elementary School	15.574 / 40.0473	7.5287	0.5079	0.0120	23.7967
General Heavy Industry	3339.74 / 0	1,267.9120	108.8581	2.5696	4,755.1064
General Light Industry	1800.07 / 0	683.3860	58.6729	1.3850	2,562.9326
Government Office Building	362.794 / 222.358	146.7063	11.8266	0.2791	525.5543
Regional Shopping Center	68.5912 / 42.0397	27.7368	2.2360	0.0528	99.3631
Single Family Housing	869.285 / 548.028	352.1355	28.3377	0.6688	1,259.8889
Strip Mall	18.3144 / 11.225	7.4060	0.5970	0.0141	26.5308
Total		2,555.5874	216.0828	5.1005	9,477.6057

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9,341.4269	552.0625	0.0000	23,142.9898
Unmitigated	9,341.4269	552.0625	0.0000	23,142.9898

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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			
Apartments Low Rise	1092.96	221.8610	13.1116	0.0000	549.6512
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0604
Elementary School	698.22	141.7324	8.3761	0.0000	351.1359
General Heavy Industry	17908.2	3,635.2028	214.8343	0.0000	9,006.0610
General Light Industry	9652.26	1,959.3216	115.7926	0.0000	4,854.1362
Government Office Building	1698.38	344.7558	20.3745	0.0000	854.1179
Regional Shopping Center	972.3	197.3681	11.6641	0.0000	488.9712
Single Family Housing	13736.9	2,788.4625	164.7934	0.0000	6,908.2978
Strip Mall	259.61	52.6985	3.1144	0.0000	130.5583
Total		9,341.4269	552.0625	0.0000	23,142.9898

Fowler GP 2042 - Fresno County, Annual

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

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1092.96	221.8610	13.1116	0.0000	549.6512
City Park	0.12	0.0244	1.4400e-003	0.0000	0.0604
Elementary School	698.22	141.7324	8.3761	0.0000	351.1359
General Heavy Industry	17908.2	3,635.2028	214.8343	0.0000	9,006.0610
General Light Industry	9652.26	1,959.3216	115.7926	0.0000	4,854.1362
Government Office Building	1698.38	344.7558	20.3745	0.0000	854.1179
Regional Shopping Center	972.3	197.3681	11.6641	0.0000	488.9712
Single Family Housing	13736.9	2,788.4625	164.7934	0.0000	6,908.2978
Strip Mall	259.61	52.6985	3.1144	0.0000	130.5583
Total		9,341.4269	552.0625	0.0000	23,142.9898

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fowler GP 2042 - Fresno County, Annual

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

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 H: Noise Impact Analysis

NOISE IMPACT ANALYSIS

FOR

CITY OF FOWLER GENERAL PLAN UPDATE

NOVEMBER 2022

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Appendix A Noise Modeling	
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LIST OF COMMON TERMS AND ACRONYMS

ADT	Average Daily Traffic
ANSI	Acoustical National Standards Institute, Inc.
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	Decibels
dBA	A-Weighted Decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPU	General Plan Update
Hz	Hertz
HVAC	Heating Ventilation & Air Conditioning
in/sec	Inches per Second
L _{dn}	Day-Night Level
L _{eq}	Equivalent Sound Level
L _{max}	Maximum Sound Level
ppv	Peak Particle Velocity
UPRR	Union Pacific Railroad
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled

INTRODUCTION

This report describes terminology used to discuss noise and discusses and analyzes the ambient noise environment of the proposed City of Fowler General Plan Update Planning Area. Noise impacts associated with implementation of the General Plan Update (GPU) are analyzed. Supporting materials from this report are located in Appendix A.

PROPOSED CITY OF FOWLER GENERAL PLAN UPDATE

The City of Fowler adopted its first General Plan in 1976. The currently adopted General Plan was adopted in June 2004 and runs through 2025. Since its adoption, the General Plan has been revised and amended but has not been comprehensively updated. The proposed GPU will include updates to represent changes in community conditions, new legislation, new regulatory requirements and planning practices, and updates regarding new social and environmental issues. The GPU will be updated to provide a planning horizon of year 2042. The City of Fowler's city limits, sphere of influence, and planning area is depicted in Figure 2.

EXISTING SETTING

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound is mechanical energy transmitted in the form of a wave because of a disturbance or vibration. Sound levels are described in terms of both amplitude and frequency.

Amplitude

Amplitude is defined as the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

The frequency of a sound is defined as the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. For instance, the human ear is more sensitive to sound in the higher portion of this range than in the lower and sound waves below 16 Hz or above 20,000 Hz cannot be heard at all. To approximate the sensitivity of the human ear to changes in frequency, environmental sound is usually measured in what is referred to as "A-weighted decibels" (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA. Common community noise sources and associated noise levels, in dBA, are depicted in Figure 1.

Figure 1. Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft) Commercial Area</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u> <u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	<u>Large Business Office</u>
<u>Quiet Urban Daytime</u>	50	<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u> <u>Quiet Suburban Nighttime</u>	40	<u>Theater, Large Conference Room (Background)</u>
<u>Quiet Rural Nighttime</u>	30	<u>Library</u> <u>Bedroom at Night,</u> <u>Concert Hall (Background)</u>
	20	<u>Broadcast/Recording Studio</u>
	10	
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Source: Caltrans 2022

Addition of Decibels

Because decibels are logarithmic units, sound levels cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces a sound level of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation & Attenuation

Geometric Spreading

Noise sources are generally characterized as either a localized source (i.e., point source) or a line source. Examples of point sources include construction equipment, vehicle horns, alarms, and amplified sound systems. Examples of a line sources include trains and on-road vehicular traffic. Sound from a point source propagates uniformly outward in a spherical pattern.

For a point source, sound levels generally decrease (attenuate) at a rate of approximately 6 decibels for each doubling of distance from the source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver), no excess ground attenuation is assumed. Parking lots and bodies of water are examples of hard surfaces which generally attenuate at this rate. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels per doubling of distance is normally assumed. When soft surfaces are present, the excess ground attenuation for soft surfaces generally results in an overall attenuation rate of approximately 7.5 decibels per doubling of distance from the point source.

On-road vehicle traffic consists of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels for line sources attenuate at a rate of approximately 3 decibels for each doubling of distance for hard sites and approximately 4.5 decibels per doubling of distance for soft sites.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks

the line of sight between a source and a receiver will typically result in minimum 5 dB of noise reduction. Taller barriers provide increased noise reduction.

Noise reductions afforded by building construction can vary depending on construction materials and techniques. Standard construction practices typically provide approximately 15 dBA exterior-to-interior noise reductions for building facades, with windows open, and approximately 20-25 dBA, with windows closed. With compliance with current building construction and insulation requirements, exterior-to-interior noise reductions typically average approximately 25 dBA. The absorptive characteristics of interior rooms, such as carpeted floors, draperies and furniture, can result in further reductions in interior noise.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

A limitation of using a single noise-level increase value to evaluate noise impacts, as discussed above, is that it fails to account for pre-development noise conditions. With this in mind, the Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level. The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of

cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL, L_{dn}). FICON-recommended noise evaluation criteria are summarized in Table 1 (FICON 2000).

**Table 1. Federal Interagency Committee on Noise
Recommended Criteria for Evaluation of Increases in Ambient Noise Levels**

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60-65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

Source: FICON 2000

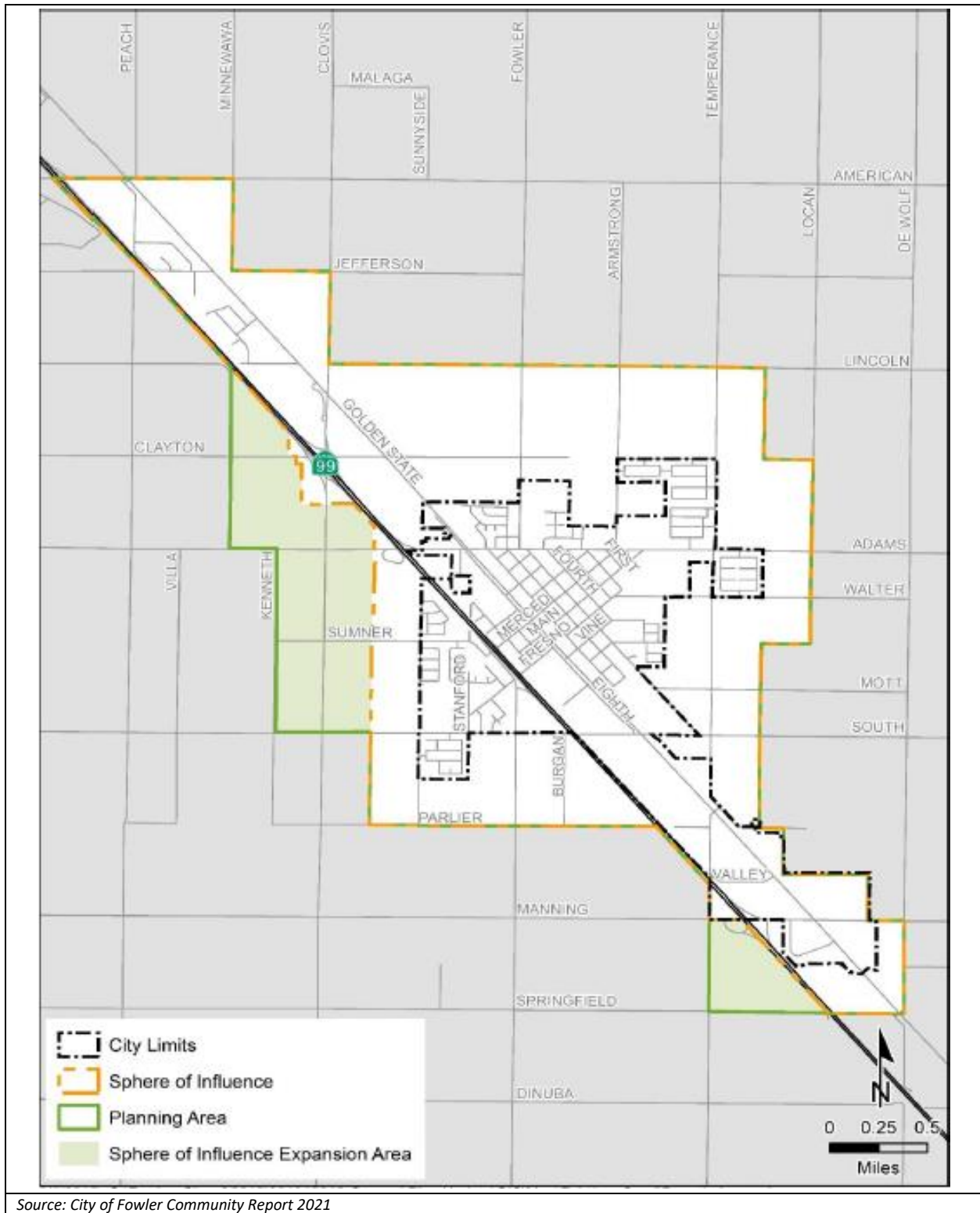
As depicted in Table 1, an increase in the traffic noise level of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (FICON 2000). These criteria are commonly applied for analysis of environmental noise impacts.

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as libraries, places of worship, and recreation areas are also considered noise-sensitive land uses.

Noise-sensitive land uses within the City of Fowler consist predominantly of residential land uses. Other noise-sensitive land uses located within the City of Fowler include schools, places of worship, and community parks.

Figure 2. Proposed General Plan Update Focus Areas



Existing Noise Environment

Short-term (10-minute) noise level measurements were conducted on March 24, 2021 for the purpose of documenting and measuring the existing noise environment at various locations throughout the City. Measurement locations were selected near major noise sources located in the vicinity of proposed focus areas and other locations within the community.

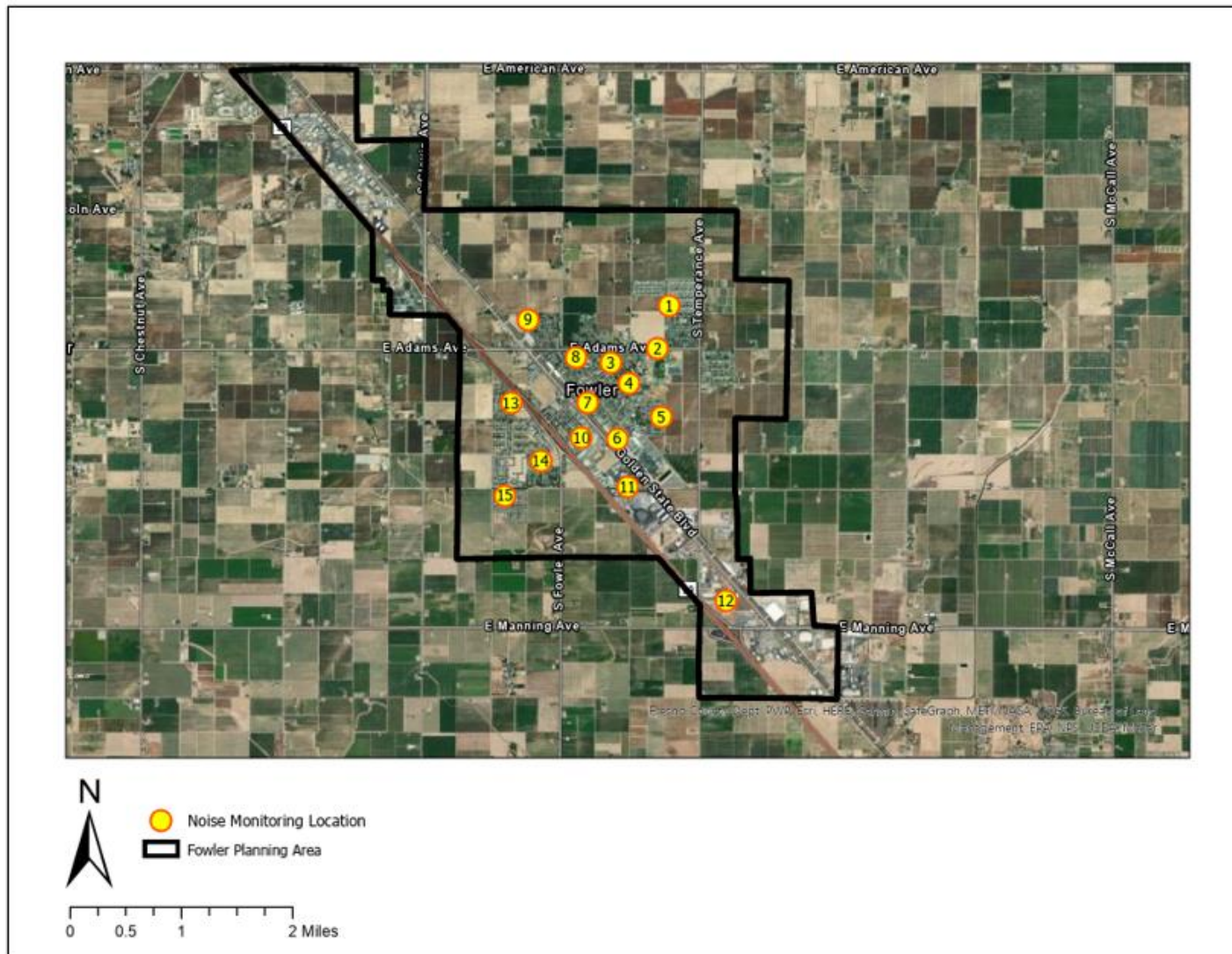
Measured daytime noise levels along area roadways ranged from approximately 47.6 to 62.5 dBA equivalent sound level (L_{eq}). In general, nighttime noise levels are typically 5-10 dB lower than daytime noise levels. Ambient noise levels are largely influenced by vehicle traffic on area roadways. To a lesser extent, aircraft overflights and other noise sources within the community (e.g., landscaping, industrial activities, construction activities) also contribute to the ambient noise environment. Ambient noise measurement locations and corresponding measured average-hourly noise levels (in dBA L_{eq}) are summarized in Table 2. Noise measurement locations are depicted in Figure 3.

Table 2. Summary of Measured Ambient Noise Levels

	Location	Monitoring Period	Primary Noise Sources	Noise Level (dBA) L_{eq}
1	355 North Jonna Avenue	9:53 - 10:03	Birds, Background Traffic	47.6
2	800 Block East Adams Avenue	10:08 - 10:18	Traffic, Reverse Beeps	62.5
3	Panzak Park	10:27 - 10:37	Traffic, Birds	52.3
4	229 South 3rd Street	10:43 - 10:53	Traffic, Birds, Bus Idle	54.0
5	1540 East Sumner Avenue	11:00 - 11:10	Birds, Dog	48.4
6	519 South 7th Street	11:16 - 11:26	Birds, Industrial Fans	54.3
7	106 East Main Street	11:34 - 11:44	Traffic	54.7
8	314 North 5th Street	11:50 - 12:00	Birds, Background Traffic	49.9
9	81 Carter Avenue	12:06 - 12:16	Birds, Background Traffic	47.9
10	Valley Children's Park	12:56 - 13:06	Traffic	55.5
11	1362 East South Avenue	13:14 - 13:24	Industrial Fans, Speaker	60.8
12	East Valley Drive	13:45 - 13:55	Traffic, Forklift	54.8
13	1122 West Jameson Avenue	14:06 - 14:16	Traffic, Birds	58.9
14	Donny Wright Park	14:31 - 14:41	Traffic, Birds, Train Horn, People	59.7
15	Sandy Avenue/Clara Court	14:51 - 15:01	Background Traffic	48.0

Noise measurements were conducted on March 24, 2021. Refer to Figure 3 for noise measurement locations.

Figure 3. Noise Measurement Locations and General Plan Update Focus Areas



Refer to Table 2 for noise measurement data

Noise Sources

Roadway Vehicular Traffic

As noted earlier in this report, noise from vehicular traffic on area roadways is a primarily source of ambient noise in the City. Major sources of noise include the California State Route 99 (SR-99) and Golden State Boulevard.

Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Noise Prediction Model (FHWA RD-77-108) based on average-daily traffic (ADT) volumes obtained from the traffic analysis prepared for this project (Kittelson & Associates, 2022). Predicted traffic noise levels and distances to projected traffic noise contours for major roadways are summarized in Table 4. Based on the modeling conducted, existing traffic noise levels along area roadways range from approximately 56 to 79 dBA CNEL at 50 feet from the near-travel-lane centerline. The primary generator of traffic noise within the City of Fowler is SR-99. Existing traffic noise levels at 50 feet from the near-travel-lane centerline of SR-99 are approximately 79 dBA CNEL.

Railroad Traffic

The Union Pacific Railroad (UPRR) runs northwest-southeast through the City, adjacent to Golden State Boulevard. Depending on freight demand, approximately 22 to 35 freight trains pass through Fowler on a daily basis.

Existing train noise levels and distance to noise contours are summarized in Table 3. Based on a conservative estimate of 35 trains per day, average-daily noise levels along the railroad corridor could reach levels of approximately 79 dBA CNEL at 100 feet from the rail corridor centerline. Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses.

Table 3. Existing Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Rail Corridor Centerline	Distance to CNEL Contours (feet) from Rail Corridor Centerline		
			70	65	60
UPRR Freight	35	79	263	468	830
<i>UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Predicted noise contours do not include shielding by intervening structures.</i>					

Major Surface Transportation Noise Contours

Major surface transportation noise sources in the City of Fowler include SR 99 and the UPRR, which parallels SR 99 to the east in a general northwest to southeast direction. Vehicle traffic along Golden State Boulevard also contribute to projected noise contours along this same general corridor. Combined existing noise contours for these surface transportation noise sources are depicted in Figures 4, 5, and 6.

Table 4. Existing Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
American Ave, SR-99 to Golden State Blvd	4,238	64.3	WR	50.4	108
Adams Ave, SR-99 to Golden State Blvd	4,539	63.2	WR	WR	95
Adams Ave, Golden State Blvd to 7th St	4,247	58.6	WR	WR	WR
Adams Ave, East of 5th St	3,412	57.6	WR	WR	WR
Adams Ave, Armstrong Ave to Temperance Ave	3,667	57.4	WR	WR	WR
Adams Ave, Temperance Ave to Locan Ave	2,685	56.5	WR	WR	WR
Sumner Ave, Sunnyside Ave to Merced St	3,108	58.9	WR	WR	WR
Manning Ave, W of 99 SB Ramps	5,802	64.5	WR	52.1	111.5
Manning Ave, E of 99 NB Ramps	21,738	68.4	64.9	127.9	269.6
Manning Ave, E of Golden State	16,414	67.2	WR	107.3	224.2
Clovis Ave, S of Lincoln Ave	15,876	68.6	60.5	122.6	260.5
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	16,736	68.5	64.5	127.9	270.1
Clovis Ave, SR 99 SB off to Adams Ave	4,513	64.6	WR	52.5	112.6
Clovis Ave, Adams Ave to Summer Ave	3,904	64.0	WR	WR	102.2
Clovis Ave, Summer Ave to South	3,428	63.4	WR	WR	93.8
Clovis Ave, South Ave to Parlier Ave	3,163	63.0	WR	WR	88.9
S Fowler Ave, Merced St. to Fresno St.	7,448	64.3	WR	50.6	108.4
S Fowler Ave, Fresno St. to South Ave.	4,607	63.5	WR	WR	95.7
S Fowler Ave, South Ave to Parlier Ave	3,596	63.6	WR	WR	96.8
Golden State Blvd, American Ave to Lincoln Ave	6,584	65.7	WR	103.1	205.3
Golden State Blvd, Lincoln Ave to Clayton Ave	5,525	65.7	WR	103.1	205.3
Golden State Blvd, Clayton Ave to Adams Ave	5,509	65.7	WR	102.9	205.9
Golden State Blvd, Adams Ave to Merced St.	6,084	65.7	WR	102.9	204.9
Golden State Blvd, Merced St. to South Ave	8,524	65.9	WR	101.7	205.1
Golden State Blvd, South Ave to Temperance Ave	8,846	66.1	WR	103.7	210
Golden State Blvd, Temperance Ave to Valley Dr	10,058	66.7	WR	111.6	228.1
Golden State Blvd, Valley Dr of Manning Ave	9,065	66.2	WR	105.1	213.3
Golden State Blvd, Manning Ave to Springfield Ave	10,722	65.9	WR	100.8	203.4
Merced St, 10th St to 9th St	11,840	64.6	WR	55.8	118.9
Merced St, 9th St to 8th St	10,944	64.2	WR	53.1	112.9
Merced St, 7th St to 6th St	4,172	60.4	WR	WR	59.5
Merced St, 6th St to 5th St	3,665	59.8	WR	WR	54.6
SR-99, South of Merced St	94,000	82.4	509	1,094	2,355
SR-99, Merced St to Adams Ave	97,000	82.6	519	1,117	2,405
SR-99, Adams Ave to Clovis Ave	99,000	82.6	526	1,132	2,438

Traffic noise levels for area roadways were calculated based on data obtained from the traffic analysis prepared for this project. Does not include shielding provided by intervening terrain or structures.
 Projected roadway traffic noise contours for SR-99 are depicted in Figure 4,5,& 6..
 WR = Contour is located within road right-of-way
 Source: Kittelson & Associates 2022

Figure 4. Existing Noise Contours – Major Surface Transportation Noise Sources

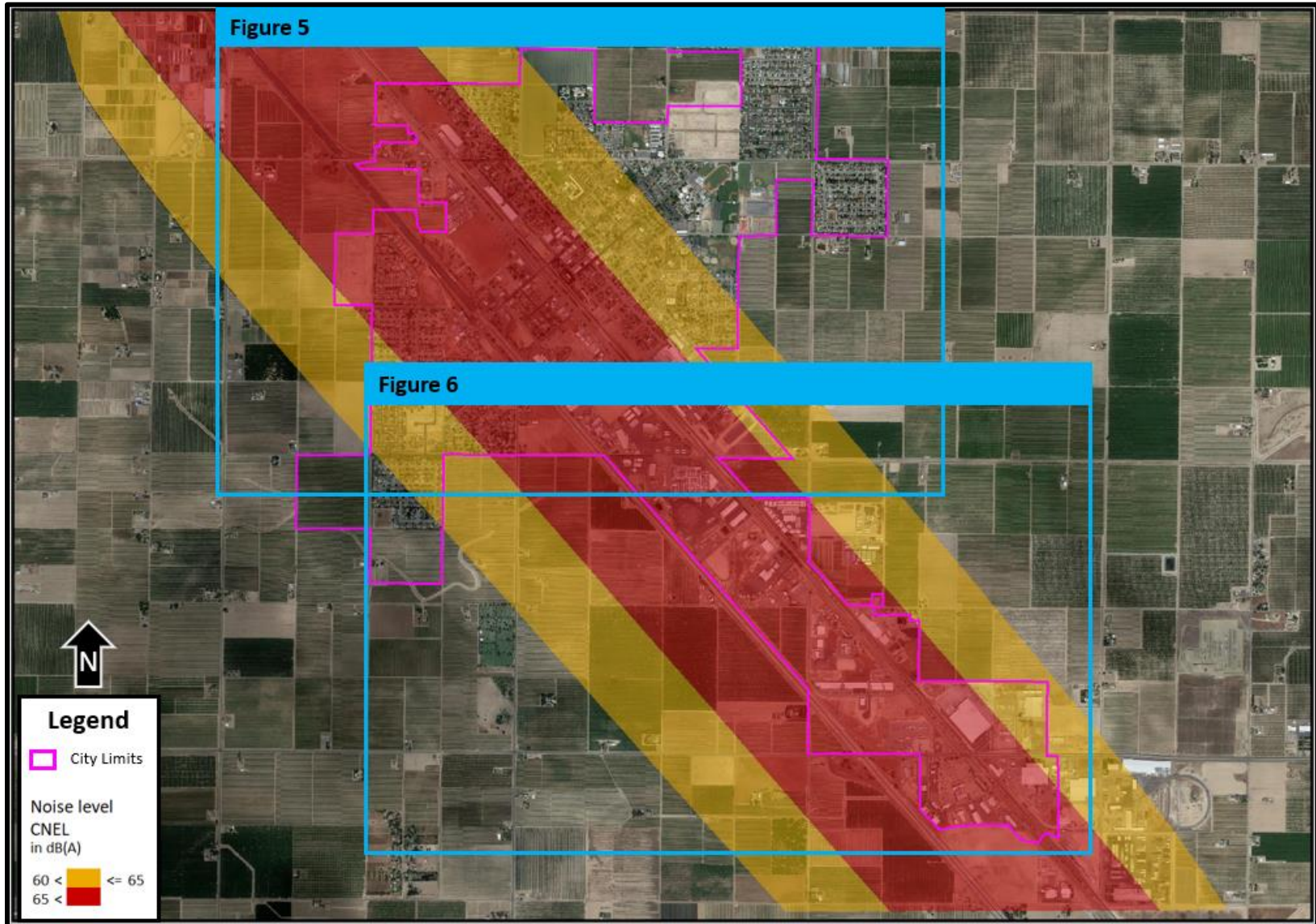
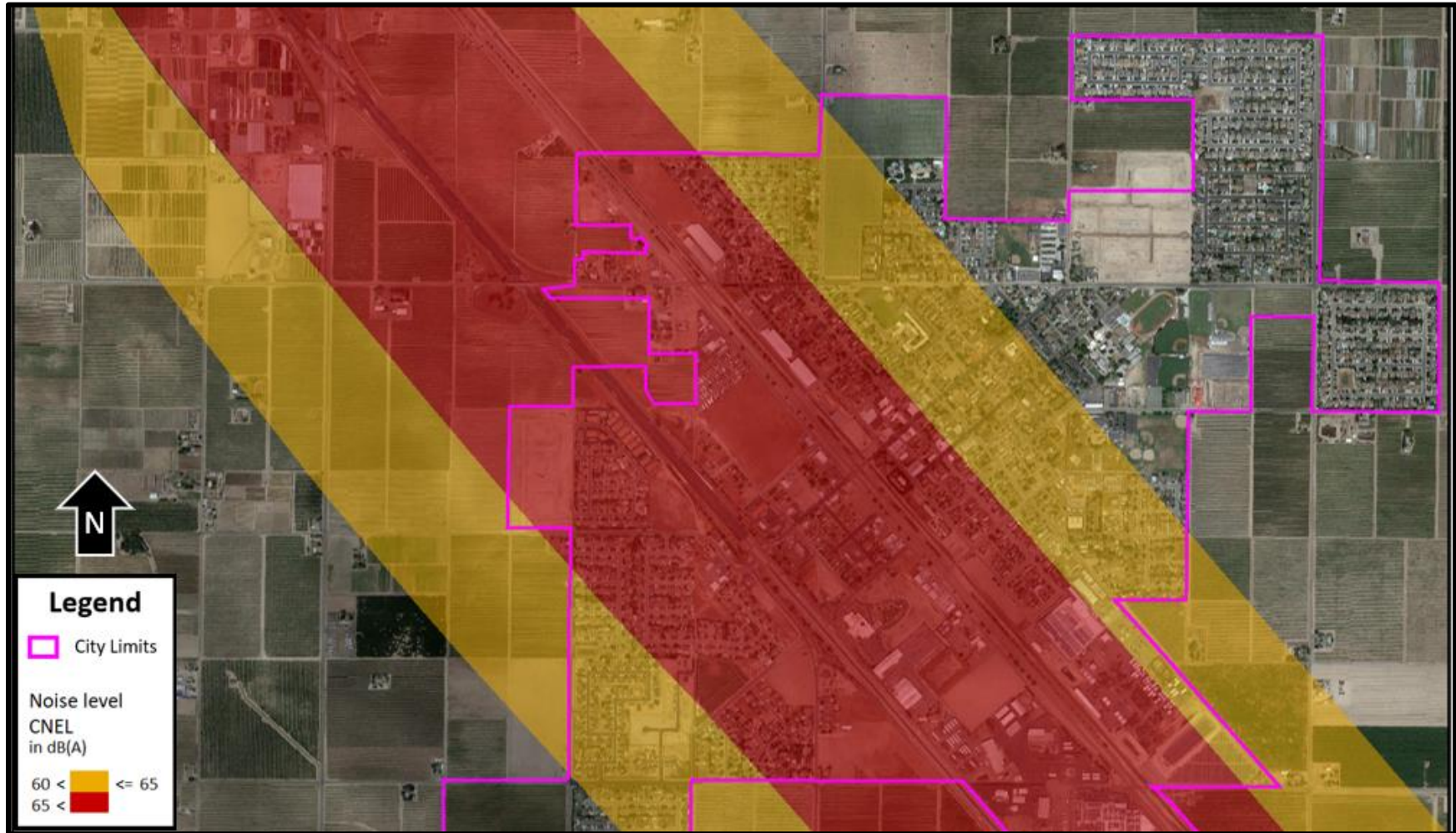
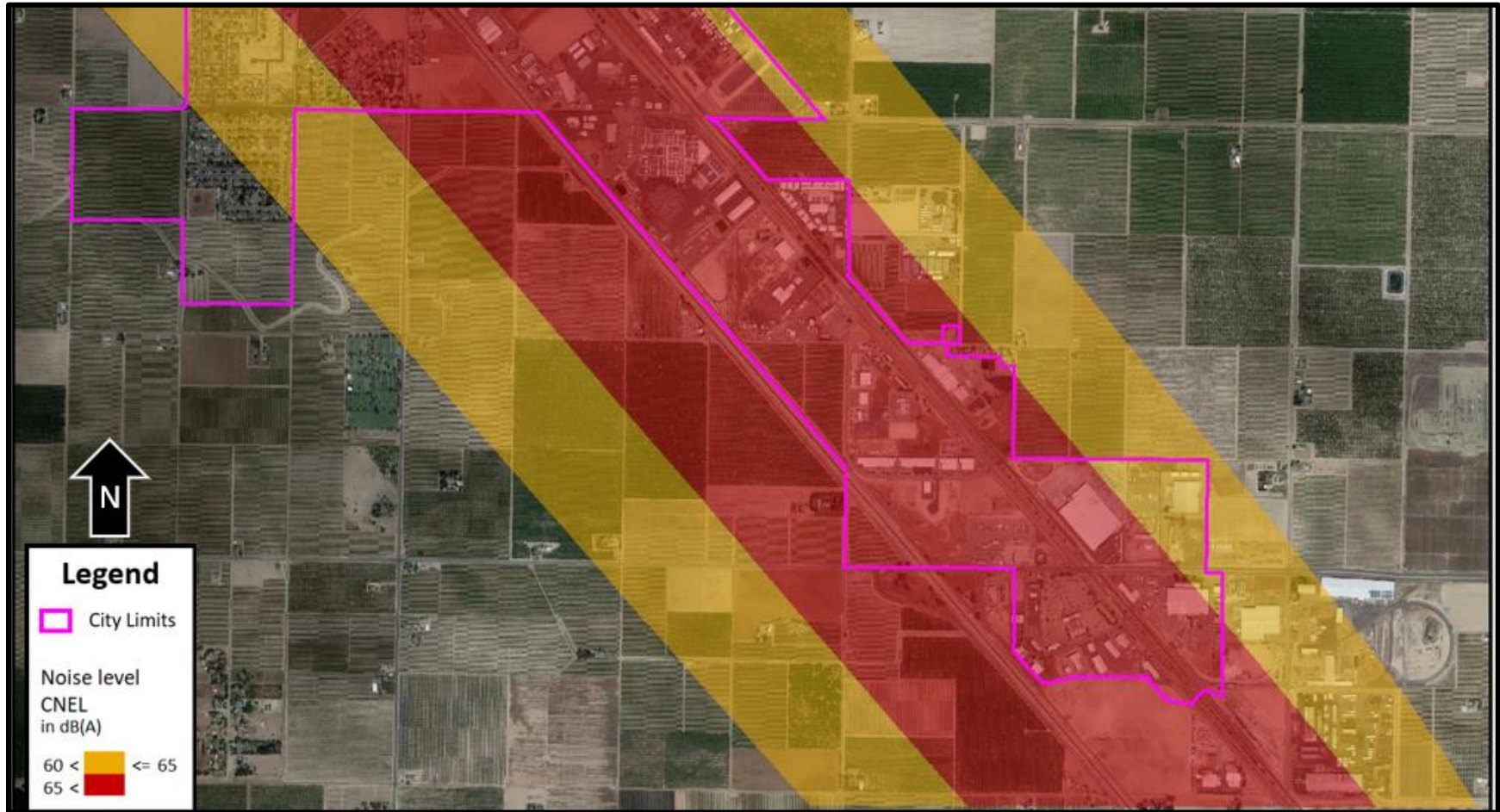


Figure 5. Existing Noise Contours - Northern Portion of the City of Fowler



Includes State Route 99, Golden State Boulevard, and Union Pacific Railroad

Figure 6. Existing Noise Contours - Southern Portion of the City of Fowler



Includes State Route 99, Golden State Boulevard, and Union Pacific Railroad

Non-Transportation Sources

Within the Fowler, major non-transportation noise sources consist predominantly of industrial and commercial land uses. Many industrial processes produce noise, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (i.e., regulations of the Occupational Safety and Health Administration of the U.S. Department of Labor [OSHA] and the California Division of Occupational Safety and Health [Cal-OSHA]). Exterior noise levels that affect neighboring parcels are typically subject to local standards. Commercial, recreational, and public facility activities can also produce noise that may affect adjacent noise-sensitive land uses. These noise sources can be continuous or intermittent and may contain tonal components that are annoying to individuals who live nearby. For instance, emergency-use sirens and backup alarms are often considered nuisance noise sources, but may not occur frequently enough to be considered incompatible with noise-sensitive land uses. In addition, noise generation from fixed noise sources may vary based upon climate conditions, time of day, and existing ambient noise levels.

From a land-use planning perspective, stationary-source noise control issues focus on two goals: (1) preventing the introduction of new noise-producing uses in noise-sensitive areas; and (2) preventing encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise producing uses. The second goal can be met by requiring that new noise-sensitive uses near noise-producing facilities include mitigation measures to ensure compliance with noise performance standards. Each of these goals stresses the importance of avoiding the location of new uses that may be incompatible with adjoining uses.

The following discussions of existing non-transportation noise sources in the community are intended to be representative of the sources and relative noise levels associated with such uses. The average-hourly noise levels (in dBA L_{eq}) discussed for these sources provide an indication of the noise levels that can generally be expected to occur over an extended period of time. The L_{eq} noise levels do not necessarily reflect possible intermittent high noise levels associated with the various uses but are useful for general planning purposes. Actual noise levels at nearby noise-sensitive receptors will likely vary from one day to the next depending on the operational characteristics of the facility, meteorological conditions, and the physical landscape.

Non-transportation noise sources within the City of Fowler consist predominantly of commercial and industrial uses. To a somewhat lesser extent, other non-transportation noise sources would also include automotive/equipment repair and maintenance facilities, and construction activities. Noise levels associated with some of the more common non-transportation noise sources located throughout the community are discussed in more detail, as follows:

Commercial and Industrial Uses

Within the Fowler planning area, commercial and industrial land uses are located primarily along major roadway and railway corridors. Noise sources commonly associated with these land uses include truck traffic, loading dock activities, heavy-equipment operation, and building mechanical systems. Major industrial and commercial operations within the community include metal and glass recycling centers, trucking distribution centers, and food and agricultural products processing. Various other activities, such as and loading dock activities, can result in temporary or intermittent increases in ambient noise levels. In general, noise levels associated with these uses can range from approximately 55 to 85 dBA L_{eq} at 50 feet.

Noise levels associated with commercial and industrial land uses can vary depending on various factors, including site conditions, equipment operated, and the specific activities being conducted. As a result, actual noise levels at nearby noise-sensitive receptors will likely vary depending on the above mentioned conditions and other influences, such as location, distance from source, shielding provided by intervening terrain and structures, and ground attenuation rates. For this reason, noise generated by commercial and industrial uses and impacts to nearby noise-sensitive land uses should be evaluated on a project-by-project and site-specific basis.

Landscape Maintenance

Landscape maintenance activities often result in sporadic and intermittent increases in ambient noise levels. Equipment used for landscape maintenance often include the use of power mowers and leaf blowers. Leaf blowers and gasoline-powered lawn mowers can result in intermittent noise levels of up to approximately 100 dBA at 3 feet (EPA 1971). Resultant exterior noise levels could reach intermittent levels of approximately 75 dBA L_{max} at 50 feet. The use of leaf blowers, particularly when used during the more noise-sensitive evening and nighttime hours, may result in increased levels of annoyance.

Automotive Maintenance & Repair

Typical automotive maintenance and repair activities often include the use of pneumatic tools, air compressors, and power generators. Other equipment operations such as the use of power hand tools (e.g., sanders, drills, grinders, pneumatic wrenches, etc.), typically generate a lesser degree of noise. The use of air compressors, power generators, and pneumatic tools can generate noise levels of up to approximately 85 dBA at 50 feet. Noise levels generated by the use of hand-held tools, such as sanders, drills, and grinders, typically average between 63 and 87 dBA at 3 feet. The use of multiple hand tools, such as grinders being used on metal, can generate levels of 87 to 97 dBA at 3 feet (EPA 1971). Noise levels associated with these facilities would be dependent on the specific activities performed and source/facility characteristics.

Building Mechanical Systems

The majority of electrical and mechanical equipment in buildings is used for air circulation systems. Mechanical systems may also include pumping systems, elevators and escalators, and various other material conveyance systems. Much of this equipment is located in mechanical equipment rooms or in areas that provide shielding from direct public/personnel exposure (i.e., above ceilings, in walls, or behind enclosures.) Equipment located within exterior areas can result in increases in ambient noise levels, particularly when located in unshielded areas and within line-of-sight of nearby receptors. Such equipment would include air-conditioning units, cooling towers, compressors, fans/turbines, electrical transformers, chillers, and pumps. Noise levels associated with these sources can vary depending on the specific equipment being operated, facility/equipment design, and operational characteristics. Typical noise levels associated with building mechanical equipment can range from less than 50 to 110 dBA at 3 feet, with the highest noise levels reaching approximately 85 dBA at 50 feet from the source.

Construction Activities

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including pile drivers, material handling equipment, pavers, jackhammers, and portable generators, can result in intermittent and prolonged increases in ambient noise levels. Although construction noise impacts are generally short-term, they can result in increased levels of annoyance to

occupants of nearby residential dwellings. In general, noise levels generated by construction activities can range from approximately 71 to 83 dBA L_{eq} at 50 feet from the source.

Noise-generating construction activities are currently regulated through implementation of the City's Noise Control ordinance, which generally limits these activities to the less noise-sensitive daytime hours of the day (Fowler, 2020).

REGULATORY SETTING

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. Those regulations most applicable to the community are summarized, as follows:

Federal

U.S. Environmental Protection Agency

In 1974, the U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control published a report entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Although this document does not constitute EPA regulations or standards, it is useful in identifying noise levels at which increased levels of annoyance would be anticipated. Based on an annual-average day-night noise level (expressed as L_{dn} or DNL), the document states that "undue interference with activity and annoyance" will not occur if outdoor noise levels in residential areas are below 55 dBA L_{dn} and indoor levels are below 45 dBA L_{dn} (EPA 1974).

Department of Housing and Urban Development

The Federal Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land uses are set forth in the Code of Federal Regulations, Title 24, Part 51, "Environmental Criteria and Standards." These guidelines identify a noise exposure of 65 dBA L_{dn} , or less, as acceptable. Exterior noise levels of 65 to 75 dBA L_{dn} are considered normally acceptable, provided appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Exterior noise levels above 75 dBA L_{dn} are considered unacceptable. The goal of the interior noise levels for residential, hotel, and hospital/nursing home uses is 45 dBA L_{dn} . These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

State

California Building Code

Title 24 of the California Code of Regulations contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code, 1998 edition, Volume 1, Appendix Chapter 12, Section 1208A). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences. The standards state that the interior noise level attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. Proposed multi-family residential structures to be located where the CNEL exceeds 60 dBA shall require an acoustical analysis showing that the proposed building design would achieve the prescribed allowable interior noise standard.

State of California General Plan Guidelines

The *State of California General Plan Guidelines* (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific noise environments. Based on these guidelines, residential uses, churches, libraries, and hospitals are "normally unacceptable" in areas where the exterior noise level exceeds 70 dBA CNEL and "conditionally acceptable" within exterior noise environments between 60 and 70 dBA CNEL. Noise levels of up to 60 dBA CNEL are considered "normally acceptable". The goal of these noise standards is, in part, to allow for a "normally acceptable" interior noise level of 45 dBA CNEL. For instance, assuming an average exterior-to-interior noise reduction of 15 dBA (with windows partially open), an exterior noise level of 60 dBA CNEL, or less, would be sufficient to achieve an interior noise level of 45 dBA CNEL. Higher exterior noise levels may be allowed provided that noise-reduction measures are incorporated to achieve acceptable interior noise levels. Within "conditionally acceptable" exterior noise environments, conventional construction with incorporation of fresh air circulation systems sufficient to allow windows to remain closed would normally suffice. Compliance with current building code requirements and with windows closed, exterior-to-interior noise reductions typically average approximately 25 dBA or more. However, the state stresses that these guidelines can be modified to reflect communities' sensitivities to noise. Adjustment factors may also be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. The State recommended noise criteria for land use compatibility are summarized in Table 5.

Local

City of Fowler General Plan Noise Element

The *Fowler General Plan Element Preparation*, Chapter 7, Section 7.8, identifies exterior average-daily noise standards for the primary purpose of ensuring the compatibility of proposed land uses within exterior noise environments and to ensure that noise levels at adjacent land uses do not exceed acceptable levels. These standards are also designed to protect existing land uses, including transportation and industry, from encroaching urban uses. These noise standards are largely consistent with those identified in the State of California's *General Plan Guidelines*, as discussed above, and summarized in Table 4 (City of Fowler 2014).

The *City of Fowler General Plan Land Use Element* incorporates development and noise-performance standards to ensure that industrial noise levels at adjacent land uses do not exceed acceptable levels. For industrial uses affecting residential uses, the following standards are required (City of Fowler 2004):

- On properties planned for industry, a landscaped setback 20 feet wide containing deciduous and evergreen trees shall be planted and maintained along the property line with abutting property planned for residential uses and along abutting local streets.
- Roof-mounted and detached mechanical equipment shall be acoustically baffled to prevent equipment noise from exceeding 55 dBA measured at the nearest residential property line.
- Exterior area lighting for industrial buildings, parking areas, garages, access drives, and loading areas, shall be low profile, hooded, and directed away from abutting property planned for residential use.

Table 5. State of California Land Use Compatibility Noise Criteria

Land Use Category	Community Noise Exposure (L _{dn} or CNEL, dBA)						Interpretation
	55	60	65	70	75	80	
Residential – Low Density Single Family, Duplex, Mobile Homes	[Noise exposure chart for Residential – Low Density Single Family, Duplex, Mobile Homes]						<div style="display: flex; flex-direction: column; gap: 10px;"> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #e0e0e0; margin-right: 5px;"></div> <p>Normally Acceptable Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.</p> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #808080; margin-right: 5px;"></div> <p>Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of noise reduction requirements and needed noise insulation features included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice.</p> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #404040; margin-right: 5px;"></div> <p>Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.</p> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #000000; margin-right: 5px;"></div> <p>Clearly Unacceptable New construction or development should generally not be undertaken</p> </div> </div>
Residential – Multiple Family	[Noise exposure chart for Residential – Multiple Family]						
Transient Lodging – Motels, Hotels	[Noise exposure chart for Transient Lodging – Motels, Hotels]						
Schools, Libraries, Churches, Hospitals, Nursing Homes	[Noise exposure chart for Schools, Libraries, Churches, Hospitals, Nursing Homes]						
Auditoriums, Concert Halls, Amphitheaters	[Noise exposure chart for Auditoriums, Concert Halls, Amphitheaters]						
Sports Arena, Outdoor Spectator Sports	[Noise exposure chart for Sports Arena, Outdoor Spectator Sports]						
Playgrounds, Neighborhood Parks	[Noise exposure chart for Playgrounds, Neighborhood Parks]						
Golf Courses, Riding Stables, Water Recreation, Cemeteries	[Noise exposure chart for Golf Courses, Riding Stables, Water Recreation, Cemeteries]						
Office Buildings, Business Commercial and Professional	[Noise exposure chart for Office Buildings, Business Commercial and Professional]						
Industrial, Manufacturing, Utilities, Agriculture	[Noise exposure chart for Industrial, Manufacturing, Utilities, Agriculture]						

Source: California GOPR 2017

The *City of Fowler General Plan Circulation Element* includes policies to reduce transportation noise impacts to community residents and sensitive land uses, including the designation of specified truck routes within the community and incorporation of increased setback distances, wall, landscaped berms, and other noise-reduction measures for land uses located along major transportation corridors (City of Fowler 2004).

City of Fowler Municipal Code

The City of Fowler Municipal Code (Title 5, Public Welfare, Chapter 21, Nuisances, Article 6, Unlawful Noise Related Nuisances) includes various provisions intended to protect community residents from prolonged unnecessary, excessive, and annoying sound levels that are detrimental to the public health, welfare, and safety, or are contrary to the public interest. Examples of noise sources subject to the City’s municipal Code include, but are not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment (City of Fowler 2021).

Noise sources associated with construction-related activities are typically exempt from the City’s nuisance ordinance provided that the activities do not take place between the hours of eight p.m. and seven a.m. or by special permit from the City Manager. Various other activities are also exempt, including, but not limited to, school entertainment and athletic events, mobile sources associated with agricultural activities, and emergency response activities (City of Fowler 2021).

In addition to the City’s nuisance ordinance, Article 14, Section 9-5.1417, Performance Standards, of the City’s zoning ordinance establishes exterior noise level standards for industrial uses. The City’s exterior noise standards are summarized in Table 5. These standards are applied at the property line of the receiving land use and vary by exposure duration and period of the day (City of Fowler 2021).

Table 6. City of Fowler Municipal Code Noise Level Standards - Industrial Uses

Receiving Land Use Category	Time Period	Noise Level (dBA) ¹
Residential	10:00 p.m. to 7:00 a.m.	50
	7:00 a.m. to 10:00 p.m.	60
Public Use ²	10:00 p.m. to 7:00 a.m.	55
	7:00 a.m. to 10:00 p.m.	60
Commercial	10:00 p.m. to 7:00 a.m.	60
	7:00 a.m. to 10:00 p.m.	65
Industrial	Anytime	70
<p><i>Applied at the property line of the receiving land use.</i> <i>The noise standard of a cumulative 30-minute period during any hour</i> <i>A 10 dB increase of the noise standard for a cumulative of 5, or more, minutes during any hour</i> <i>A 20 dB increase of the noise standard, or exceed maximum ambient noise level during any time period</i> <i>Includes schools, libraries, hospitals, churches, and parks.</i> <i>Noise standards do not apply to railroad operations, motor vehicles, including trucks, or to agricultural equipment used in the cultivation of any agricultural land in the M-I Zone. Noise standards are subject to review/amendment by the City</i></p>		

ENVIRONMENTAL IMPACTS

SIGNIFICANCE THRESHOLD CRITERIA

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

NOI-1: Result in exposure of persons or generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

NOI-2: Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

NOI-3: Expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan area or, where such a plan has not been adopted, or within two miles of a public airport or a public use airport.

The City is not located within an airport land use plan area or within two miles of a public or private use airport. Implementation of the proposed GPU would not expose people residing or working in the project area to excessive noise levels. As a result, no impact is anticipated to occur with regard to the exposure of sensitive receptors to aircraft noise levels. Therefore, impacts related to thresholds NOI-5 and NOI-6 are not discussed further in this report.

Methodology

A combination of use of existing literature and general application of accepted noise thresholds was used to determine the impact of ambient noise levels resulting from and on development within the GPU Planning Area. Short- and long-term impacts associated with transportation and non-transportation noise sources were qualitatively assessed based on potential increases in ambient noise levels anticipated to occur at noise-sensitive land uses. Traffic noise levels along major area roadways were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108.) The FHWA modeling was based upon the Calveno noise-emission factors for automobiles and medium- and heavy-duty trucks. Input data used in the model included average-daily traffic volumes, day/night percentages of automobiles and medium and heavy trucks, vehicle speeds, ground attenuation factors, roadway widths, and ground elevation data. Traffic volumes for major roadway segments within the City were derived from the traffic analysis prepared for this project. Projected year 2042 traffic noise levels were also quantified for nearby segments of SR-99 based on projected increases in traffic obtained from Kittelson & Associates.

Predicted train noise levels and corresponding distances to noise contours for the UPRR railroad corridor were calculated in accordance with the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* guidance (FTA 2018). Train noise levels were quantified for freight trains along the UPRR freight line. Predicted train volumes and operational data were obtained from the Fowler General Plan Element Preparation (City of Fowler 2014). Projected future 2042 train volumes for this corridor were unable to be obtained.

Relevant Proposed GPU Goals and Policies

The 2042 GPU includes a number of goals and policies that would reduce noise impacts on sensitive receptors. Some of the most relevant of these goals and policies include the following:

Policies

- CH-25** New development of the land uses shall be located, designed, and operated in such a way that external noise levels from stationary noise sources do not exceed the maximum identified. Noise levels shall be measured immediately within the property line of the affected land use. Where two land uses meet, the more restrictive standard shall be used.
- CH-26** New development shall be designed and operated in such a way that interior noise levels from both stationary and mobile noise sources do not exceed 45 dBA L_{dn} for adjacent residential uses or other uses where people normally sleep and 45 dBA L_{eq} at peak hour for adjacent office, school, church, or similar use.
- CH-27** New uses increasing stationary and/or mobile noise levels shall be subject to the following thresholds for CEQA significance:
- Where existing ambient noise levels are less than 60 dB, an increase of 5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant;
 - Where existing ambient noise levels are between 60 and 65 dB, an increase of 3 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant;
 - Where existing ambient noise levels are greater than 65 dB, an increase of 1.5 dB or more, measured at the outdoor activity area of a noise-sensitive use, shall be considered significant. (New)
- CH-28** Require noise generators to provide increased setbacks, walls, landscaped berms, other sound-absorbing barriers, or a combination thereof to prevent excessive noise exposure and reduce noise levels to acceptable levels, as needed.
- CH-29** Require noise reduction methods along major roadways in order to protect adjacent, noise-sensitive land uses against excessive noise. Noise reduction methods shall include design strategies, including setbacks, landscaped berms, and other sound-absorbing barriers, when possible, in lieu of sound walls, to mitigate noise impacts and enhance aesthetics. Sound walls may also be appropriate noise-reduction strategies.
- CH-30** When sound walls are proposed, encourage a combination of berms and/or landscaping and walls to produce a more visually pleasing streetscape.
- CH-31** Require roof-mounted and detached mechanical equipment to be acoustically buffered when adjacent to residential uses to prevent equipment noise in excess of 55dBA as measured at the nearest residential property line.
- CH-32** Purchase City vehicles and equipment with low noise generation. Maintain City vehicles to minimize noise.
- CH-33** Transportation and City infrastructure construction shall not be subject to typical noise standards so long as construction occurs between the hours of 7 AM and 7 PM, Monday through Friday, or between 8 AM and 5 PM on weekends and federal holidays. Construction may occur outside of these times if completing the work within these time frames is deemed infeasible.
- CH-34** The City shall require an assessment of construction noise impacts on nearby noise-sensitive land uses and associated activities to minimize those impacts as part of the discretionary review process.

- CH-35** Require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on current City or FTA criteria.
- CH-36** The City may require a project-specific vibration impact assessment and associated impact reduction measures for projects involving the use of major vibration-generating equipment which could result in vibration levels in excess of 0.2 in/sec peak particle velocity (PPV).

Impacts and Mitigation Measures

Impact N-1: *Would the General Plan result in exposure of persons or generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

The City of Fowler GPU consists of developing parcels that are currently vacant, or under-developed and have the potential for enhanced or further development. The building of the proposed scenario was calculated by Kittelson & Associates (Kittelson & Associates 2022). The buildout forecast represents the most likely amount of development under the proposed zoning rather than the maximum possible amount of development. Future development within the Fowler sphere of Influence would result in the construction of an estimated 16,414,061 square feet (sqft) of industrial land uses, 1,631,444 sqft of commercial land uses, 197,838 sqft of public facilities, and 12,494 additional dwelling units. This would result in a total of approximately 1,240,395 vehicle miles traveled (VMT) per day. Future development would result in a net increase of approximately 992,501,214 VMT. Short-term construction and long-term operational noise impacts associated with future development are discussed as follows:

Short-term Exposure to Construction Noise

Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation, erection) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Temporary increases in ambient noise levels, particularly during the nighttime hours, could result in increased levels of annoyance and potential sleep disruption. Although noise ranges were found to be similar for all construction phases, the grading phase tends to involve the most equipment and resulted in slightly higher average-hourly noise levels. Typical noise levels for individual pieces of construction equipment and distances to predicted noise contours are summarized in Table 7. As depicted, individual equipment noise levels typically range from approximately 74 to 88 dBA L_{eq} at 50 feet. Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Intermittent noise levels can range from approximately 77 to 95 dBA L_{max} , the loudest of which include the use of pile drivers and impact devices (e.g., hoe rams, impact hammers).

Assuming a construction noise level of 88 dBA L_{eq} and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 1,330 feet of noise-sensitive receptors could reach levels of approximately 60 dBA L_{eq} . Depending on distances from nearby noise-sensitive land uses and the specific construction activities conducted, construction activities may result in temporary and periodic increases in ambient noise levels at nearby receptors. Of particular concern, are activities that occur during the evening and nighttime hours. Construction activities that occur during these more noise-sensitive hours may result in increased levels of annoyance and potential sleep disruption to occupants of nearby noise-sensitive land uses (e.g., residential dwellings, schools). As

a result, because such increases could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies or neighboring jurisdictions, this impact is considered **potentially significant**.

Table 7. Typical Individual Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L _{eq})		
	L _{max}	L _{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Rock Drill	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Blasting	94	74	83	149	265
Boring Hydraulic Jack/Power Unit	80	77	118	210	374
Compactor (Ground)	80	73	74	133	236
Concrete Batch Plant	83	75	94	167	297
Concrete Mixer Truck	85	81	187	334	594
Concrete Mixer (Vibratory)	80	73	74	133	236
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Drill Rig Truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic Break Ram	90	80	167	297	529
Jack Hammer	85	78	133	236	420
Impact Hammer/Hoe Ram (Mounted)	90	83	236	420	748
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pile Driver (Impact/Vibratory)	95	88	420	748	1,330
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529
Sources: FTA 2018, FHWA 2008					

Proposed General Plan Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to further reduce criteria noise impacts on receptors. Relevant policies include policies: CH-33, CH-34, CH-35, CH-36.

Due to the short-term and intermittent frequency of construction noise, and the required compliance with the City’s municipal code and GPU Policy CH-33, CH-34, CH-35, and CH-36 which would require compliance with applicable standards and procedures for the control of noise impacts, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. As a result, this impact would be considered **less than significant**.

Mitigation Measures

None required.

Long-term Exposure to Non-Transportation Noise

The proposed 2042 GPU would primarily facilitate new residential, commercial, industrial, and public land uses within the city limits. Potential noise/land use conflicts would occur at the interface between planned residential and commercial land uses due to noise sources typically associated with commercial activities, such as rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Other noise sources associated with commercial activities include delivery trucks, parking lot sweepers, leaf blowers, and mowers. The city has adopted specific standards for noise level standards (see Table 5). Noise level could potentially exceed the specific standards and would, therefore, be considered to have a **potentially significant** impact.

Proposed General Plan Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to further reduce criteria noise impacts on receptors. Relevant policies include policies: CH-25, CH-26, CH-27, CH-28, CH-30, CH-31, and CH-32

Compliance with proposed policy CH-25, CH-26, CH-27, CH-28, CH-30, CH-31, and CH-32 would ensure specific projects adhere to the Municipal Code and would mitigate any significant nuisance noise from commercial activities, rooftop-mounted HVAC equipment, delivery trucks, car washes, and amplified sound. Therefore, implementation of the 2042 GPU would not result in ambient noise level environments at noise-sensitive uses that exceed the City's maximum allowable noise exposure standards set forth in Table 5. Consequently, future noise/land use conflicts between planned residential and commercial land would be **less than significant**.

Long-term Exposure to Transportation Noise

Major noise sources in the planning area consist predominantly of vehicle traffic on area roadways. Major roadway segments in the City include, but are not limited to, SR-99, Golden State Boulevard, Clovis Avenue, Manning Avenue, and Merced Street. In addition, as noted earlier in this report, rail traffic along the UPRR also contributes to transportation noise levels in the community. Roadway traffic noise and UPRR noise impacts are discussed in greater detail, as follows:

Roadway Traffic Noise

Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction model (FHWA-RD-77-108) for existing and future cumulative (year 2042) conditions. Predicted future cumulative traffic noise levels and distances to projected noise contours are summarized in Tables 10. It is important to note that predicted noise contours are approximate and do not take into account shielding or reflection of noise due to intervening terrain or structures. As a result, predicted noise contours should be considered to represent bands of similar noise exposure along roadway segments, rather than absolute lines of demarcation. Although these predicted noise contours are not considered site-specific, they are useful for determining potential land use conflicts. Predicted increases in future cumulative traffic noise levels, in comparison to existing traffic noise levels, are summarized in Table 11.

Under future cumulative conditions with buildout of the GPU and in comparison, to existing conditions (Table 11), the GPU would contribute to significant increases in traffic noise levels along segments of American Avenue, Adams Avenue, Sumner Avenue, Manning Avenue, Clovis Avenue, South Fowler Avenue, Golden State Boulevard, Merced Street, and SR-99 (Refer to Table 11). In addition, development of future land uses within the proposed focus areas would likely occur along major roadways. Depending on the type of land uses proposed, distances from area roadways, and site conditions, future development

could be exposed to traffic noise levels in excess of the City's current noise standards for land use compatibility (refer to Table 5). As a result, exposure to vehicular traffic noise on area roadways would be considered a **potentially significant** impact.

Table 8. 2042 GPU Buildout Roadway Traffic Noise Levels & Contour Distances

Roadway Segment	ADT Volumes	CNEL at 50 ft. from Near-travel-lane Centerline	Distance to CNEL Contour (Feet from Road Centerline)		
			70	65	60
American Ave, SR-99 to Golden State Blvd	15,022	69.8	54.3	116.5	250.6
Adams Ave, SR-99 to Golden State Blvd	17,352	67.7	WR	88.7	190.4
Adams Ave, Golden State Blvd to 7th St	11,407	62.9	WR	WR	90.8
Adams Ave, East of 5th St	7,694	61.1	WR	WR	70
Adams Ave, Armstrong Ave to Temperance Ave	6,277	59.8	WR	WR	62.3
Adams Ave, Temperance Ave to Locan Ave	5,079	59.3	WR	WR	53.5
Sumner Ave, Sunnyside Ave to Merced St	11,485	64.6	WR	54.5	116.4
Manning Ave, W of 99 SB Ramps	29,134	71.5	70.6	151.7	326.6
Manning Ave, E of 99 NB Ramps	39,103	71.0	90.4	186.4	397.5
Manning Ave, E of Golden State	32,092	70.1	80.5	164	348.7
Clovis Ave, S of Lincoln Ave	36,041	72.2	99.3	209.3	448.8
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	39,075	72.2	105.8	221.3	473.6
Clovis Ave, SR 99 SB off to Adams Ave	16,123	70.1	56.9	122.1	262.7
Clovis Ave, Adams Ave to Summer Ave	17,174	70.4	59.3	127.3	274
Clovis Ave, Summer Ave to South	9,493	67.8	WR	85.9	184.6
Clovis Ave, South Ave to Parlier Ave	6,719	66.3	WR	68.3	146.7
S Fowler Ave, Merced St. to Fresno St.	19,438	68.5	WR	95.4	205.3
S Fowler Ave, Fresno St. to South Ave.	15,352	68.8	WR	99.1	213.2
S Fowler Ave, South Ave to Parlier Ave	16,055	70.1	56.8	121.7	261.9
Golden State Blvd, American Ave to Lincoln Ave	31,974	73.4	146.1	303.2	647.5
Golden State Blvd, Lincoln Ave to Clayton Ave	26,225	72.5	129.8	266.5	567.8
Golden State Blvd, Clayton Ave to Adams Ave	22,354	71.8	118.3	240.4	510.8
Golden State Blvd, Adams Ave to Merced St.	28,845	70.0	94.2	184.4	388.2
Golden State Blvd, Merced St. to South Ave	25,114	70.4	99.4	196.8	415.5
Golden State Blvd, South Ave to Temperance Ave	23,504	70.2	96	188.8	397.8
Golden State Blvd, Temperance Ave to Valley Dr	33,283	71.7	116.2	235.6	500.4
Golden State Blvd, Valley Dr of Manning Ave	35,200	71.9	120	244.3	519.3
Golden State Blvd, Manning Ave to Springfield Ave	27,929	69.9	92.6	180.7	380
Merced St, 10th St to 9th St	23,946	67.6	WR	88.5	189.8
Merced St, 9th St to 8th St	21,045	67.1	WR	81.3	174.1
Merced St, 7th St to 6th St	12,100	65.0	WR	56.2	120.4
Merced St, 6th St to 5th St	11,593	64.8	WR	54.6	117.1
SR-99, South of Merced St	139,306	84.1	660.5	1,421.4	3,061.2
SR-99, Merced St to Adams Ave	146,209	84.3	682.1	1,468	3,161.5
SR-99, Adams Ave to Clovis Ave	152,422	84.5	701.3	1,509.3	3,250.4

Traffic noise levels for area roadways were calculated based on data obtained from the traffic analysis prepared for this project. Does not include shielding provided by intervening terrain or structures.
 Projected roadway traffic noise contours for SR-99 are depicted in Figure 7,8,& 9.
 WR = Contour is located within road right-of-way
 Source: Kittelson & Associates 2022

**Table 9. Traffic Noise Levels
Existing Compared to Year 2042 with General Plan Update Buildout**

Roadway Segment	CNEL at 50 ft. from Near-travel-lane Centerline			Potentially Significant? ¹
	Existing Conditions	GPU Buildout	Increase	
American Ave, SR-99 to Golden State Blvd	64.31	69.8	5.5	Yes
Adams Ave, SR-99 to Golden State Blvd	63.15	67.7	4.6	Yes
Adams Ave, Golden State Blvd to 7th St	58.56	62.85	4.3	No
Adams Ave, East of 5th St	57.61	61.14	3.5	No
Adams Ave, Armstrong Ave to Temperance Ave	57.43	59.77	2.3	No
Adams Ave, Temperance Ave to Locan Ave	56.52	59.29	2.8	No
Sumner Ave, Sunnyside Ave to Merced St	58.91	64.59	5.7	Yes
Manning Ave, W of 99 SB Ramps	64.52	71.53	7.0	Yes
Manning Ave, E of 99 NB Ramps	68.4	70.95	2.6	Yes
Manning Ave, E of Golden State	67.18	70.09	2.9	Yes
Clovis Ave, S of Lincoln Ave	68.61	72.17	3.6	Yes
Clovis Ave, N of SR 99 NB Ramps, S of Golden State Blvd Frontage Connector Road	68.48	72.16	3.7	Yes
Clovis Ave, SR 99 SB off to Adams Ave	64.58	70.11	5.5	Yes
Clovis Ave, Adams Ave to Summer Ave	63.95	70.38	6.4	Yes
Clovis Ave, Summer Ave to South	63.39	67.81	4.4	Yes
Clovis Ave, South Ave to Parlier Ave	63.04	66.31	3.3	Yes
S Fowler Ave, Merced St. to Fresno St.	64.33	68.5	4.2	Yes
S Fowler Ave, Fresno St. to South Ave.	63.52	68.75	5.2	Yes
S Fowler Ave, South Ave to Parlier Ave	63.59	70.09	6.5	Yes
Golden State Blvd, American Ave to Lincoln Ave	66.49	73.35	6.9	Yes
Golden State Blvd, Lincoln Ave to Clayton Ave	65.73	72.49	6.8	Yes
Golden State Blvd, Clayton Ave to Adams Ave	65.72	71.8	6.1	Yes
Golden State Blvd, Adams Ave to Merced St.	63.73	69.99	6.3	Yes
Golden State Blvd, Merced St. to South Ave	65.94	70.44	4.5	Yes
Golden State Blvd, South Ave to Temperance Ave	66.13	70.16	4.0	Yes
Golden State Blvd, Temperance Ave to Valley Dr	66.69	71.67	5.0	Yes
Golden State Blvd, Valley Dr of Manning Ave	66.24	71.91	5.7	Yes
Golden State Blvd, Manning Ave to Springfield Ave	65.91	69.85	3.9	Yes
Merced St, 10th St to 9th St	64.58	67.63	3.1	Yes
Merced St, 9th St to 8th St	64.23	67.07	2.8	No
Merced St, 7th St to 6th St	60.4	65.02	4.6	Yes
Merced St, 6th St to 5th St	59.83	64.84	5.0	Yes
SR-99, South of Merced St	82.41	84.12	1.7	Yes
SR-99, Merced St to Adams Ave	82.55	84.33	1.8	Yes
SR-99, Adams Ave to Clovis Ave	82.64	84.51	1.9	Yes

Traffic noise levels were calculated based on traffic volumes derived from the traffic analysis prepared for this project.

1. Significant increases are based on the following thresholds (Refer to Table 1):

- 5.0, or greater, where the existing noise level is less than 60 dBA
- 3.0, or greater, where the existing noise level is 60-65 dBA
- 1.5, or greater, where the existing noise level is greater than 65 dBA

Source: Kittelson & Associates 2022

Railroad Traffic Noise

The UPRR line runs northwest southeast through the City, adjacent to Golden State Boulevard. Roughly 35 freight trains currently travel along this rail corridor on a daily basis. By year 2042, freight trains traveling along this corridor are likely to increase but no reliable projections could be found in order to analysis future conditions.

Existing train noise levels and distance to noise contours are summarized in Table 3. Based on a conservative estimate of 35 trains per day, average-daily noise levels along the railroad corridor could reach levels of approximately 79 dBA CNEL at 100 feet from the rail corridor centerline. Although the proposed GPU would not result in an increase in train traffic, the development of future land uses near the train tracks, and could be exposed to train noise levels in excess of the City’s current noise standards for land use compatibility (refer to Table 5). Train noise events can also be a source of intermittent noise, including noise generated by locomotive engines, wheel squeal, and warning horns. These instantaneous noise events can contribute to increased levels of annoyance to occupants of nearby noise-sensitive land uses. As a result, exposure to railroad traffic noise levels would be considered a **potentially significant** impact.

Table 10. Future Railroad Traffic Noise Levels

Train Type	Number of Trains/Day	CNEL at 100 feet from Rail Corridor Centerline	Distance to CNEL Contours (feet) from Rail Corridor Centerline		
			70	65	60
UPRR Freight	35	79	263	468	830
<i>UPRR freight trains distributed equally over a 24-hour period. Does not include shielding provided by intervening terrain or structures. Predicted noise contours do not include shielding by intervening structures.</i>					

Major Surface Transportation Noise Contours

As previously noted, major surface transportation noise sources in the City of Fowler include SR 99 and the UPRR, which parallels SR 99 to the east in a general northwest to southeast direction. Vehicle traffic along Golden State Boulevard also contribute to projected noise contours along this same general corridor. Combined projected future noise contours for these surface transportation noise sources are depicted in Figures 7, 8 and 9.

Proposed General Plan Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to reduce potential surface transportation noise impacts to noise-sensitive land uses. Relevant policies include policies: CH-25, CH-26, CH-27, CH-28, CH-29, CH-30, and CH-32.

Implementation of the proposed GPU policies would reduce potential transportation noise impacts. Future development projects would be required to analyze project-related noise impacts and incorporate necessary noise-reduction measures. Noise-reduction measures typically implemented to reduce traffic noise include increased insulation, setbacks, and construction of sound barriers. Additional policies have been proposed to promote alternative means of transportation and to limit heavy truck traffic to designated truck routes, which would help to reduce transportation-related noise levels along area roadways. Implementation of these policies and actions will help to reduce impacts associated with future development. The proposed GPU Noise Element does not identify noise standards applicable to transportation noise sources that are typically used for determination of land use compatibility. To further

ensure the compatibility of future land uses within noise environments influenced by transportation noise sources, the following additional mitigation measure is recommended:

Proposed Mitigation Measures

MM N-1: Ensure that future development exposed to transportation noise sources complies with the City’s noise standards for determination of land use compatibility. The exterior and interior noise standards identified in Table 11 are recommended.

Table 11. Maximum Allowable Noise Exposure for Transportation Noise Sources

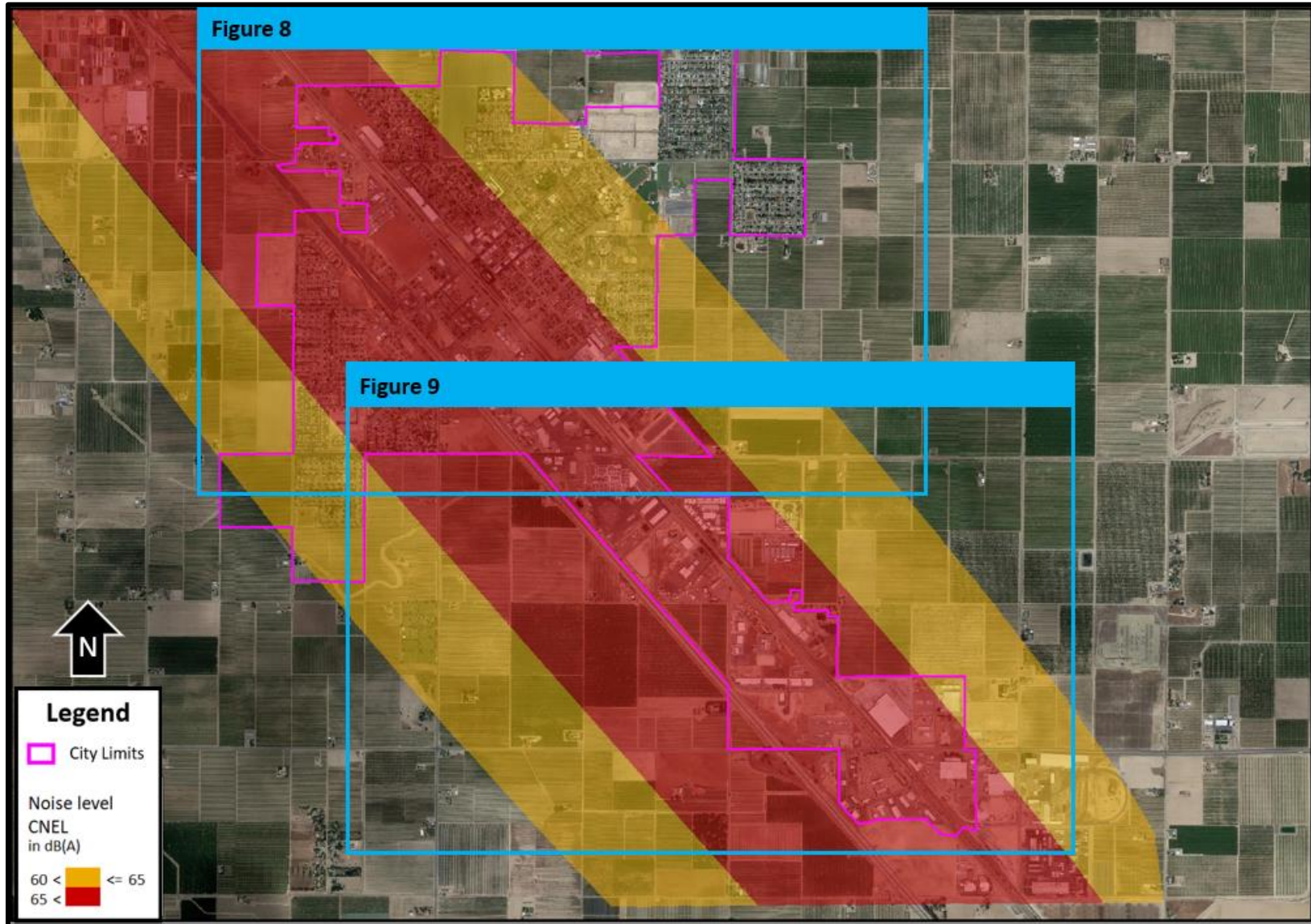
Land Use	Interior Occupied Spaces (dBA)		Outdoor Activity Areas (dBA) ¹
	CNEL	Leq ⁶	
Residential	45 ⁴		65 ^{2,3}
Convalescent Care Facilities, Hospitals	45 ⁴		70 ^{2,3}
Transient Lodging	45		65 ^{2,3}
Schools, Libraries, Museums and Places of Worship	--	45	--
Playgrounds, Neighborhood Parks	--		70 ⁵
Office Buildings	--	45	70 ³
Commercial Retail & Light Industrial	--		75

1. To be applied at outdoor activity areas. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use.
2. Where it is not possible to reduce exterior noise levels to 65 dBA CNEL, or less, an exterior noise level of 70 dBA CNEL may be allowed provided that an acoustical analysis has been prepared for the project to identify available exterior noise-reduction measures to be incorporated and interior noise levels are in compliance with this table.
3. Where outdoor activity areas are not included in the project design, only the interior noise level standard shall apply.
4. In locations where railroad noise is the predominant noise source, the interior noise standard for residential land uses shall be reduced by 5 dB to account for the increased potential for sleep disruption to building occupants.
5. Where quiet is a basis for use.
6. This standard is intended to apply to land uses with operational hours predominantly during the daytime hours. The interior noise standard applies to a typical worst-case hour during the period of use.

Significance After Mitigation

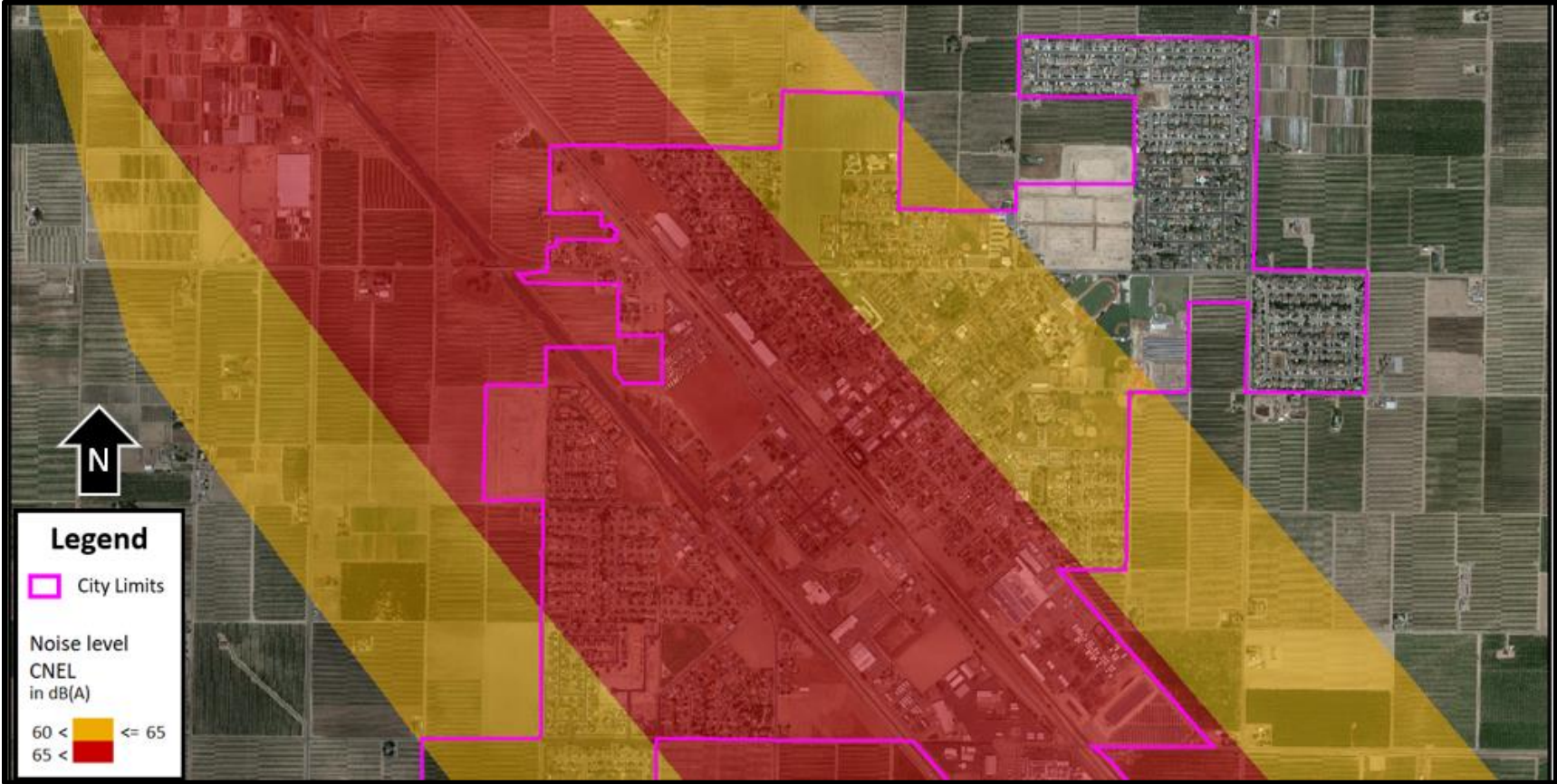
The noise standards identified in Table 11 have been adapted from the State of California General Plan Guidelines for land use compatibility (refer to Table 5). However, for some land uses with operations that are limited primarily to the daytime hours, such as schools and office buildings, the application of an average-daily noise standard may not provide adequate protection with regard to activity interference. For these land uses, an average-hourly interior noise level standard is recommended. Furthermore, in locations that are exposed to railroad noise the recommended interior noise standard should be reduced to account for the increased potential for sleep disruption commonly associated with railroad activities and related noise events. With implementation of the proposed GPU policies and the above recommended mitigation measure, this impact would be considered **less than significant**.

Figure 7. Future Noise Contours – Major Surface Transportation Noise Sources



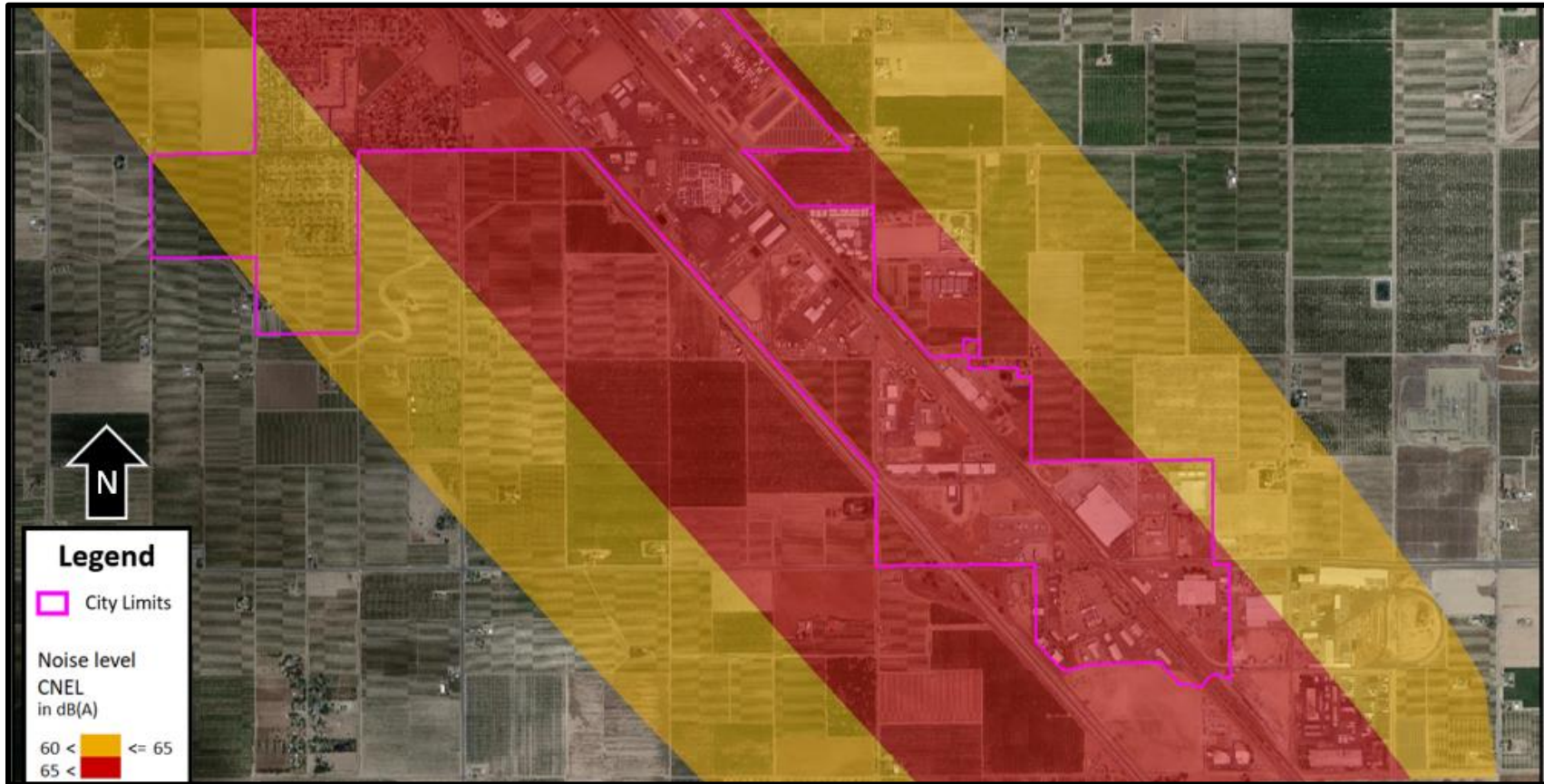
Includes State Route 99, Golden State Boulevard, and Union Pacific Railroad

Figure 8. Future Noise Contours - North Portion of the City of Fowler



Includes State Route 99, Golden State Boulevard, and Union Pacific Railroad

Figure 9. Future Noise Contours - South Portion of the City of Fowler



Includes State Route 99, Golden State Boulevard, and Union Pacific Railroad

Impact N-2: Would the General Plan result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. The effects of ground vibration are influenced by the duration of the vibration and the distance from the vibration source.

Table 12. Summary of Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of “architectural” damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of “architectural” damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of “architectural” damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

*The vibration levels are based on peak particle velocity in the vertical direction for continuous vibration sources, which includes most construction activities.
Source: Caltrans 2020*

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Below 0.10 in/sec there is “virtually no risk of ‘architectural’ damage to normal buildings.” Damage to historic or ancient buildings could occur at levels of 0.08 in/sec ppv. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 in/sec ppv can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2020).

Groundborne vibration sources located within the City that could potentially affect future development would be primarily associated with construction activities. With the exception of pavement breaking and pile driving, construction activities and related equipment typically generate groundborne vibration levels of less than 0.2 in/sec, which is the architectural damage risk threshold recommended by Caltrans. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec, or one half of the architectural damage risk level, at 10 feet. The highest vibration level associated with a pavement breaker was 2.88 in/sec at 10 feet. During

pile driving, vibration levels near the source depend mainly on the soil's penetration resistance as well as the type of pile driver used. Impact pile drivers tend to generate higher vibration levels than vibratory or drilled piles. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Caltrans indicates that the distance to the 0.2 in/sec ppv criterion for pile driving activities would occur at a distance of approximately 50 feet. However, as with construction-generated noise levels, pile driving can result in a high potential for human annoyance from vibrations, and pile-driving activities are typically considered as potentially significant if these activities are performed within 200 feet of occupied structures (Caltrans, 2020). As a result, short-term exposure to vibration levels would be considered a **potentially significant impact**.

Proposed General Plan Policies that Provide Mitigation

The proposed GPU includes numerous goals and policies that would help to further reduce short-term noise and vibration impacts to nearby sensitive land uses. Relevant policies include policies: CH-33, CH-34, CH-35, and CH-36.

Due to the short-term nature of construction vibrations, the intermittent frequency of construction vibrations, and the required compliance with the City's hourly restrictions related to construction activities, construction vibration level increases will not result in exposure of persons to or generation of excessive groundborne vibration that would result in a significant increase in annoyance. By restricting the hours of construction to avoid vibrations during times when it could potentially be more of a nuisance, the impact of new construction vibration is reduced to a **less-than-significant** level through the application of the GPU's mitigating policies. In addition, individual development projects will be subject to site-specific environmental review, which will necessitate identification of site-specific mitigation in the event that significant impacts are identified.

Mitigation Measures

None required.

Impact N-3: Would the General Plan expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan area or, where such a plan has not been adopted, or within two miles of a public airport or a public use airport?

The nearest active airport to the City of Fowler is the Selma Airport, located about 1.5 miles to the south. The City of Fowler is not located within the Selma Airport planning area or the projected noise contours of this airport (County of Fresno 1983). As a result, implementation of the 2042 GPU would not subject residents or workers to excessive noise levels. As a result, impacts from air travel would be considered **less than significant**.

REFERENCES

- California Department of Transportation (Caltrans). 2020. *Transportation and Construction-Induced Vibration Guidance Manual*.
- California Department of Transportation (Caltrans). 2022. *EIR/EA Annotated Outline*.
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- City of Fowler. Accessed: March 2021. *Fowler Municipal Code*. Available at website url: https://library.municode.com/ca/fowler/codes/code_of_ordinances?nodeId=TIT5PUWE_CH21NU_ART6UNNORENU_5-21.601UNNO.
- City of Fowler. December 2014. *Fowler General Plan Element Preparation, Open Space and Conservation Element; Hazards Management Element*.
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- Federal Highway Administration (FHWA). December 8, 2008. Roadway Construction Noise Model, version 1.1.
- Federal Interagency Committee on Noise (FICON). October 22, 2000. Discussion of Methodologies of Measuring Noise Impact.
- Fowler. 2021. *Fowler Community Report*. Available at website url: <http://fowlercivcity.org/wp-content/uploads/2021/03/10032019-Fowler-Community-Report.pdf>
- Kittlelson & Associates. 2022. City of Fowler General Plan Update- Vehicle Miles Travels Impact Assessment.
- Kittlelson & Associates. 2022. City of Fowler General Plan Update- Land Use Assumptions
- U.S. Department of Transportation, Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*.
- U.S. Environmental Protection Agency (U.S. EPA). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*.
- U.S. Environmental Protection Agency (U.S. EPA). 1974. *Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*.

APPENDIX A
Transportation Noise Modeling



NOISE MEASUREMENT SURVEY FORM

SHEET 1 OF 4

DATE:	3/24/2021
PROJECT:	Fowler GP
LOCATION:	Fowler, CA
MONITORING STAFF:	Jon Pambakian

LOCATION MAP: (Include a map of noise measurement locations AND photographs for measurement locations on attached worksheet. Include additional sheets as necessary. Where possible include GPS coordinates.)



NOISE MEASUREMENT CONDITIONS & EQUIPMENT

MET CONDITIONS & MONITORING EQUIPMENT:	TEMP: 50 - 61 F. | HUMIDITY: 46 - 78% | WIND SPEED: 6 MPH | WIND DIR: NW | GROUND: Dry
	CLOUD COVER BY CLASS (OC=OVERCAST): 3 (1. HEAVY OC, 2. LIGHT OC, 3. SUNNY, 4. CLEAR NIGHT, 5. OC NIGHT)
	MET. METER: Kestrel 5500
NOISE MONITORING EQUIPMENT:	LARSON DAVIS SLM MODEL: LxT S/N: 5741
	MICROPHONE: S/N: 2744
	CALIBRATOR: CAL200 S/N: 2744
NOISE MONITORING SETUP:	WITHIN 10 FT OF REFLECTIVE SURFACE?: NO | MICROPHONE HEIGHT AGL (FT): 5
	CALIBRATED PRIOR TO AND UPON COMPLETION OF MEASUREMENTS: | METER SETTINGS: A-WHT SLOW

NOISE & TRAFFIC MEASUREMENTS

MEASUREMENT		DURATION (Minutes)	MEASUREMENT LOCATION	PRIMARY NOISE SOURCES NOTED	MEASURED NOISE LEVELS		
LOCATION	DATE/TIME				LEQ	LMIN	LMAX
ST1	9:53 - 10:03	10	355 N. Jonna Ave.	Birds	47.6		
ST2	10:08 - 10:18	10	800 block E. Adams Ave.	traffic, reverse beeps	62.5		
ST3	10:27 - 10:37	10	Panzak Park	traffic, birds	52.3		
ST4	10:43 - 10:53	10	229 S. 3rd St.	traffic, birds, bus idle	54		
ST5	11:00 - 11:10	10	1540 E. Sumner Ave.	birds, dod	48.4		
ST6	11:16 - 11:26	10	519 S. 7th St.	birds, industrial fans	54.3		
ST7	11:34 - 11:44	10	106 E. Main St.	traffic	54.7		
ST8	11:50 - 12:00	10	314 N. 5th St.	birds	49.9		
ST9	12:06 - 12:16	10	81 Carter Ave.	birds	47.9		
ST10	12:56 - 13:06	10	Valley Childrens Park	traffic	55.5		
ST11	13:14 - 13:24	10	1362 E. South Ave	industrial fans, speaker	60.8		
ST12	13:45 - 13:55	10	E. Valley Dr./Felix	traffic, forklift	54.8		
ST13	14:06 - 14:16	10	1122 W. Jameson Ave.	traffic, birds	58.9		
ST14	14:31 - 14:41	10	Donny Wright Park	traffic, birds, train horn, people	59.7		
ST15	14:51 - 15:01	10	Sandy Ave./Clara Ct.		48.0		

TRAFFIC COUNTS		DURATION (Minutes)	TRAFFIC DIRECTION/ LANE ASSIGNMENT	VEHICLE CLASSIFICATION				AVG. VEHICLE SPEEDS
LOCATION	DATE/TIME			LDV	MDV	HDV	BUS	

VEHICLE COUNTS: MANUALLY VIDEO

VEHICLE SPEEDS: IN TRAFFIC RADAR



NOISE MEASUREMENT SURVEY FORM

SHEET 2 OF 4

DATE:	
PROJECT:	
LOCATION:	
MONITORING STAFF:	

SITE PHOTO(S): (Refer to data sheets for noise measurement locations)

MEASUREMENT LOCATION 1		MEASUREMENT LOCATION 2	
	 Fowler, California, United States 970 Ahronian Ave, Fowler, CA 93625, USA Lat N 36° 38' 16.3932" Long W -119° 40' 5.6532" 03/23/21 10:01		 Fowler, California, United States 960 E Adams Ave, Fowler, CA 93625, USA Lat N 36° 38' 4.4952" Long W -119° 40' 11.136" 03/23/21 10:09
MEASUREMENT LOCATION 3		MEASUREMENT LOCATION 4	
	 Fowler, California, United States 108 N 3rd St, Fowler, CA 93625, USA Lat N 36° 37' 59.1456" Long W -119° 40' 32.8764" 03/23/21 10:28		 Fowler, California, United States 229 S 3rd St, Fowler, CA 93625, USA Lat N 36° 37' 51.6468" Long W -119° 40' 24.4056" 03/23/21 10:43
MEASUREMENT LOCATION 5		MEASUREMENT LOCATION 6	
	 Fowler, California, United States 895 Christopher Ct, Fowler, CA 93625, USA Lat N 36° 37' 37.9236" Long W -119° 40' 8.9364" 03/23/21 11:01		 Fowler, California, United States 1540 E Summer Ave, Fowler, CA 93625, USA Lat N 36° 37' 38.064" Long W -119° 40' 9.4044" 03/23/21 11:10
	 Fowler, California, United States 519 S 7th St, Fowler, CA 93625, USA Lat N 36° 37' 30.6928" Long W -119° 40' 30.3996" 03/23/21 11:27		 Fowler, California, United States 519 S 7th St, Fowler, CA 93625, USA Lat N 36° 37' 30.9504" Long W -119° 40' 30.4752" 03/23/21 11:27



NOISE MEASUREMENT SURVEY FORM

SHEET 3 OF 4

DATE:	
PROJECT:	
LOCATION:	
MONITORING STAFF:	

SITE PHOTO(S): (Refer to data sheets for noise measurement locations)

MEASUREMENT LOCATION 7		MEASUREMENT LOCATION 8	
<p>Fowler, California, United States 106 E Main St, Fowler, CA 93625, USA Lat N 36° 37' 44.2416" Long W -119° 40' 44.112" 03/23/21 11:35</p>	<p>Fowler, California, United States 106 E Main St, Fowler, CA 93625, USA Lat N 36° 37' 44.1552" Long W -119° 40' 44.1804" 03/23/21 11:44</p>	<p>Fowler, California, United States 308 N 5th St, Fowler, CA 93625, USA Lat N 36° 38' 0.7908" Long W -119° 40' 49.2384" 03/23/21 11:52</p>	<p>Fowler, California, United States 308 N 5th St, Fowler, CA 93625, USA Lat N 36° 38' 0.0089" Long W -119° 40' 49.242" 03/23/21 12:00</p>
MEASUREMENT LOCATION 9		MEASUREMENT LOCATION 10	
<p>Fowler, California, United States 81 Carter Ave, Fowler, CA 93625, USA Lat N 36° 38' 15.1404" Long W -119° 41' 11.9076" 03/23/21 12:12</p>	<p>Fowler, California, United States 13 Valley MHP, Fowler, CA 93625, USA Lat N 36° 37' 56.7228" Long W -119° 41' 6.6408" 03/23/21 13:06</p>	<p>Fowler, California, United States Fowler @ Valley Childrens, Fowler, CA 93625, USA Lat N 36° 37' 30.8678" Long W -119° 40' 46.8408" 03/23/21 13:06</p>	
MEASUREMENT LOCATION 11		MEASUREMENT LOCATION 12	
<p>Fowler, California, United States 1362 E South Ave, Fowler, CA 93625, USA Lat N 36° 37' 12.3492" Long W -119° 40' 24.9132" 03/23/21 13:15</p>	<p>Fowler, California, United States 1362 E South Ave, Fowler, CA 93625, USA Lat N 36° 37' 12.252" Long W -119° 40' 24.8812" 03/23/21 13:24</p>	<p>Fowler, California, United States 2320 E Valley Dr, Fowler, CA 93625, USA Lat N 36° 36' 28.692" Long W -119° 39' 38.4732" 03/23/21 13:46</p>	<p>Fowler, California, United States 2320 E Valley Dr, Fowler, CA 93625, USA Lat N 36° 36' 28.6848" Long W -119° 39' 38.4984" 03/23/21 13:55</p>



NOISE MEASUREMENT SURVEY FORM

SHEET 4 OF 4

DATE:	
PROJECT:	
LOCATION:	
MONITORING STAFF:	

SITE PHOTO(S): (Refer to data sheets for noise measurement locations)

MEASUREMENT LOCATION 13



Fowler, California, United States
1103 W Walter Ave, Fowler, CA 93625, USA
Lat N 36° 37' 43.9428"
Long W -119° 41' 19.8892"
03/23/21 14:07

Fowler, California, United States
1103 W Walter Ave, Fowler, CA 93625, USA
Lat N 36° 37' 43.8616"
Long W -119° 41' 20.2416"
03/23/21 14:17

MEASUREMENT LOCATION 14



Fowler, California, United States
309 W Fresno St, Fowler, CA 93625, USA
Lat N 36° 37' 22.4004"
Long W -119° 41' 6.2844"
03/23/21 14:32

Fowler, California, United States
309 W Fresno St, Fowler, CA 93625, USA
Lat N 36° 37' 22.4904"
Long W -119° 41' 6.3276"
03/23/21 14:41

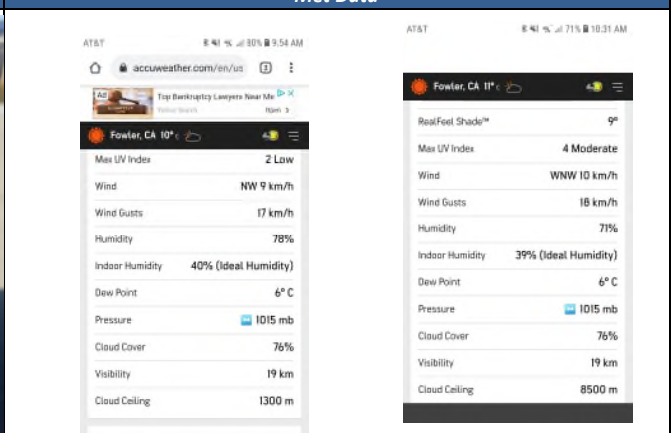
MEASUREMENT LOCATION 15



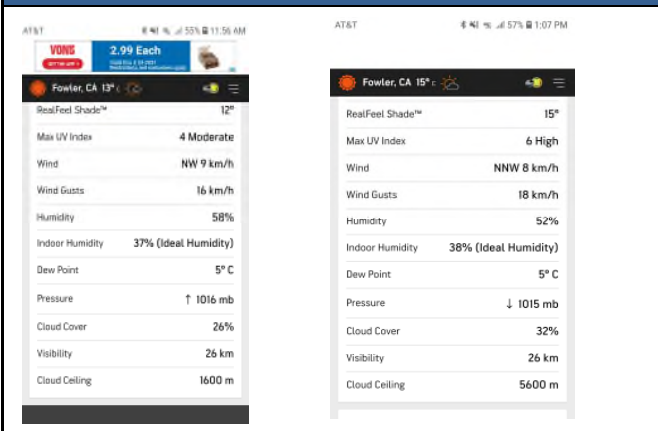
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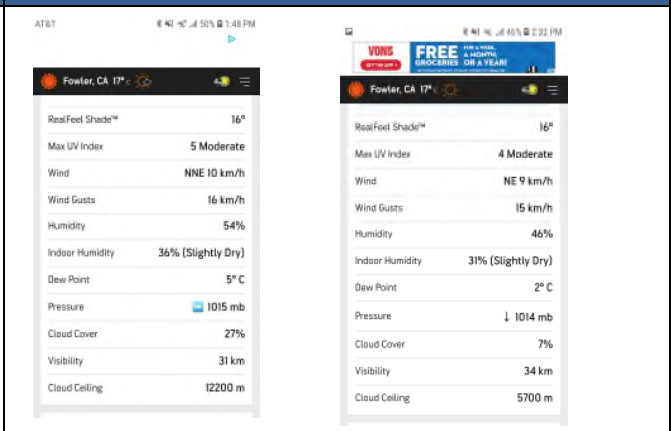
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2019									
Road Segment	ADT Volumes	Speed	AHW	CNEL at 50ft. From Near travel-lane Centerline	CNEL Contour 70	CNEL Contour 65	CNEL Contour 60	CNEL Contour 55	
American Ave,SR-99 to Golden State Blvd	4238	50	6	64.3	0	50.4	108	232.2	
Adams Ave,SR-99 to Golden State Blvd	4539	40	9	63.2	0	0	95	203.9	
Adams Ave,Golden State Blvd to 7th St	4247	30	9	58.6	0	0	0	101.1	
Adams Ave,East of 5th St	3412	30	9	57.6	0	0	0	87.5	
Adams Ave,Armstrong Ave to Temperance Ave	3667	30	14.5	57.4	0	0	0	92.4	
Adams Ave,Temperance Ave to Locan Ave	2685	30	9.5	56.5	0	0	0	74.8	
Sumner Ave,Sunnyside Ave to Merced St	3108	35	8	58.9	0	0	0	105	
Manning Ave,W of 99 SB Ramps	5802	45	6	64.5	0	52.1	111.5	240	
Manning Ave,E of 99 NB Ramps	21738	45	29.5	68.4	64.9	127.9	269.6	578	
Manning Ave,E of Golden State	16414	45	29.5	67.2	0	107.3	224.2	479.7	
Clovis Ave,S of Lincoln Ave	15876	50	23	68.6	60.5	122.6	260.5	559.4	
Clovis Ave,N of SR 99 NB Ramps, S of GS Fronta	16736	50	28.5	68.5	64.5	127.9	270.1	579.3	
Clovis Ave,SR 99 SB off to Adams Ave	4513	50	6	64.6	0	52.5	112.6	242.6	
Clovis Ave,Adams Ave to Summer Ave	3904	50	6	64.0	0	0	102.2	219.9	
Clovis Ave,Summer Ave to South	3428	50	6	63.4	0	0	93.8	201.7	
Clovis Ave,South Ave to Parlier Ave	3163	50	6	63.0	0	0	88.9	191.2	
S Fowler Ave,Merced St. to Fresno St.	7448	40	6	64.3	0	50.6	108.4	233.2	
S Fowler Ave,Fresno St. to South Ave.	4607	45	6	63.5	0	0	95.7	205.9	
S Fowler Ave,South Ave to Parlier Ave	3596	50	6	63.6	0	0	96.8	208.2	
Golden State Blvd,American Ave to Lincoln Ave	6584	65	44.25	66.5	0	113.6	229.6	113.6	
Golden State Blvd,Lincoln Ave to Clayton Ave	5525	65	44.25	65.7	0	103.1	205.3	434.1	
Golden State Blvd,Clayton Ave to Adams Ave	5509	65	44.25	65.7	0	102.9	204.9	433.2	
Golden State Blvd,Adams Ave to Merced St.	6084	50	40.25	63.7	0	75.2	142.5	297.2	
Golden State Blvd,Merced St. to South Ave	8524	55	40.25	65.9	0	101.7	205.1	435.1	
Golden State Blvd,South Ave to Temperance Av	8846	55	39.75	66.1	0	103.7	210	445.9	
Golden State Blvd,Temperance Ave to Valley Dr	10058	55	39.75	66.7	0	111.6	228.1	485.5	
Golden State Blvd,Valley Dr of Manning Ave	9065	55	39.75	66.2	0	105.1	213.3	453.2	
Golden State Blvd,Manning Ave to Springfield A	10722	50	39.75	65.9	0	100.8	203.4	431.5	
SR-99,South of Merced	94000	65	32	82.4	508.6	1093.7	2355.1	5072.6	
SR-99,Merced St to Adams Ave	97000	65	32	82.6	519.3	1116.9	2405	5179.9	
SR-99,Adams Ave to Clovis Ave	99000	65	32	82.6	526.4	1132.2	2437.9	5250.9	

Road Segment	ADT Volumes	Speed	AHW	CNEL at 50ft. From Near travel-lane Centerline	CNEL Contour 70	CNEL Contour 65	CNEL Contour 60
American Ave,SR-99 to Golden State Blvd	15022	50	6	69.8	54.3	116.5	250.6
Adams Ave,SR-99 to Golden State Blvd	17352	40	9	67.7	0	88.7	190.4
Adams Ave,Golden State Blvd to 7th St	11407	30	9	62.9	0	0	90.8
Adams Ave,East of 5th St	7694	30	9	61.1	0	0	70
Adams Ave,Armstrong Ave to Temperance Ave	6277	30	14.5	59.8	0	0	62.3
Adams Ave,Temperance Ave to Locan Ave	5079	30	9.5	59.3	0	0	53.5
Sumner Ave,Sunnyside Ave to Merced St	11485	35	8	64.6	0	54.5	116.4
Manning Ave,W of 99 SB Ramps	29134	45	6	71.5	70.6	151.7	326.6
Manning Ave,E of 99 NB Ramps	39103	45	29.5	71.0	90.4	186.4	397.5
Manning Ave,E of Golden State	32092	45	29.5	70.1	80.5	164	348.7
Clovis Ave,S of Lincoln Ave	36041	50	23	72.2	99.3	209.3	448.8
Clovis Ave,N of SR 99 NB Ramps, S of GS Frontage Connector	39075	50	28.5	72.2	105.8	221.3	473.6
Clovis Ave,SR 99 SB off to Adams Ave	16123	50	6	70.1	56.9	122.1	262.7
Clovis Ave,Adams Ave to Summer Ave	17174	50	6	70.4	59.3	127.3	274
Clovis Ave,Summer Ave to South	9493	50	6	67.8	0	85.9	184.6
Clovis Ave,South Ave to Parlier Ave	6719	50	6	66.3	0	68.3	146.7
S Fowler Ave,Merced St. to Fresno St.	19438	40	6	68.5	0	95.4	205.3
S Fowler Ave,Fresno St. to South Ave.	15352	45	6	68.8	0	99.1	213.2
S Fowler Ave,South Ave to Parlier Ave	16055	50	6	70.1	56.8	121.7	261.9
Golden State Blvd,American Ave to Lincoln Ave	31974	65	44.25	73.4	146.1	303.2	647.5
Golden State Blvd,Lincoln Ave to Clayton Ave	26225	65	44.25	72.5	129.8	266.5	567.8
Golden State Blvd,Clayton Ave to Adams Ave	22354	65	44.25	71.8	118.3	240.4	510.8
Golden State Blvd,Adams Ave to Merced St.	28845	50	40.25	70.0	94.2	184.4	388.2
Golden State Blvd,Merced St. to South Ave	25114	55	40.25	70.4	99.4	196.8	415.5
Golden State Blvd,South Ave to Temperance Ave	23504	55	39.75	70.2	96	188.8	397.8
Golden State Blvd,Temperance Ave to Valley Dr	33283	55	39.75	71.7	116.2	235.6	500.4
Golden State Blvd,Valley Dr of Manning Ave	35200	55	39.75	71.9	120	244.3	519.3
Golden State Blvd,Manning Ave to Springfield Ave	27929	50	39.75	69.9	92.6	180.7	380
SR-99,South of Merced	139,306	65	32	84.1	660.5	1421.4	3061.2
SR-99,Merced St to Adams Ave	146,209	65	32	84.3	682.1	1468	3161.5
SR-99,Adams Ave to Clovis Ave	152,422	65	32	84.5	701.3	1509.3	3250.4

Appendix I: Traffic Study

TRAFFIC STUDY

Proposed Fowler General Plan

Fowler, California

Prepared For:

Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, California 93291

Date:

August 26, 2022

Job No.:

20-062.01



PETERS ENGINEERING GROUP

A CALIFORNIA CORPORATION

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TRAFFIC STUDY

Proposed Fowler General Plan

Fowler, California

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1.0 – INTRODUCTION

1.1 – Purpose

This report presents the results of traffic analyses performed for the proposed Fowler General Plan Update. The traffic analyses were prepared to investigate anticipated traffic conditions with implementation of the proposed General Plan. This analysis focuses on the projected roadway operations and investigates the adequacy of the proposed Circulation Plan, primarily as it pertains to vehicle traffic on the planned roadways. In addition, the report includes analysis of intersections at freeway ramp intersections to identify possible interchange improvements that may be required in the future.

1.2 – Project Description

The proposed Project is an update of the City of Fowler General Plan. The City of Fowler is located in Fresno County, California in the central San Joaquin Valley. The location of Fowler, California is presented in Figure 1.1, Site Vicinity Map, following the text of this report.

The proposed Land Use and Circulation Map included in the proposed General Plan identifies the locations of the various land uses and identifies the location of the physical circulation system planned throughout the city. The map is presented in Figure 1.2, Land Use and Circulation Map.

Tables 1.1 through 1.3 present the proposed street designations, the planned number of lanes, and the existing number of lanes for the major streets included in the General Plan. It should be noted that in some cases where the existing number of lanes equals the planned number of lanes, the road may not be currently developed to the full planned cross section.

1.3 – List of Abbreviations

The following is a list of abbreviations that may be used in the text of this report.

NB – Northbound	Ave – Avenue
SB – Southbound	St – Street
Dr – Drive	Blvd – Boulevard
LOS – Level of service	SR – State Route
OWS – One-way stop control	sec – seconds
AWS – All-way stop control	PHF – Peak Hour Factor
HCM – Highway Capacity Manual	VMT – vehicle miles traveled
COG – Council of Fresno County Governments	
RTP – 2022 Fresno County Regional Transportation Plan	

1.4 – Study Scenarios

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The peak hours were analyzed for the following scenarios:

- Existing Conditions; and
- General Plan Buildout Conditions.

Table 1.1
East-West Street Designations

Road	Segments	Designation	Number of Lanes	
			Existing	Planned
American Ave	SR 99 to Golden State Blvd	Arterial	2	4
American Ave	Golden State Blvd to Clovis Ave	Arterial	2	4
Lincoln Ave	SR 99 to Golden State Blvd	Collector	2	2
Lincoln Ave	Clovis Ave to Fowler Ave.	Collector	2	2
Lincoln Ave	Fowler Ave to Armstrong Ave	Collector	2	2
Lincoln Ave	Armstrong Ave to Temperance Ave	Collector	2	2
Clayton Ave	Golden State Blvd to Fowler Ave	Collector	2	2
Adams Ave	West of Clovis Ave	Collector	2	2
Adams Ave	Clovis Ave to SR 99	Collector	2	2
Adams Ave	SR 99 to Golden State Blvd	Collector	2	2
Adams Ave	Golden State Blvd to 7 th St	Collector	2	2
Adams Ave	East of 5 th St	Collector	2	2
Adams Ave	W of Armstrong	Collector	2	2
Adams Ave	Armstrong Ave to Temperance Ave	Collector	2	2
Adams Ave	Temperance Ave to Locan Ave	Collector	2	2
Walter Ave	W of Temperance	Collector	2	2
Walter Ave	Temperance Ave to Locan Ave	Collector	2	2
Sumner Ave	Clovis Ave to Sunnyside Ave.	Collector	2	2
Sumner Ave	Sunnyside Ave to Merced St	Collector	2	2
South Ave	Clovis Ave to Sunnyside Ave	Collector	2	2
South Ave	Sunnyside Ave to Stanford Ave	Collector	4	2
South Ave	Stanford Ave to S. Fowler Ave	Collector	2	2
South Ave	West of Golden State Blvd	Collector	2	2
South Ave	Golden State Blvd to Harris Ave	Collector	2	2
Parlier Ave	Clovis Ave to Sunnyside Ave	Collector	2	2
Parlier Ave	Sunnyside Ave to Fowler Ave	Collector	2	2
Parlier Ave	Fowler Ave to SR 99	Collector	2	2
Manning Ave	West of 99 SB Ramps	Arterial	2	4
Manning Ave	East of 99 NB Ramps	Arterial	4	4
Manning Ave	East of Golden State	Arterial	4	4
Springfield Ave	West of Temperance	Collector	2	2

Table 1.2
North-South Street Designations

Road	Segments	Designation	Number of Lanes	
			Existing	Planned
Clovis Ave	South of Lincoln Ave	Arterial	4	4
Clovis Ave	North of SR 99 NB Ramps, South of Golden St Frontage Connector Road	Arterial	4	4
Clovis Ave	SR 99 SB off to Adams Ave	Arterial	2	4
Clovis Ave	Adams Ave to Summer Ave	Arterial	2	4
Clovis Ave	Summer Ave to South	Arterial	2	4
Clovis Ave	South Ave to Parlier Ave	Arterial	2	4
Fowler Ave	Lincoln Ave to Clayton Ave	Collector	2	2
Fowler Ave	Clayton Ave to Adams Ave	Collector	2	2
Fowler Ave	Merced St to Fresno St	Arterial	2	4
Fowler Ave	Fresno St to South Ave	Arterial	2	4
Fowler Ave	South Ave to Parlier Ave	Arterial	2	4
Armstrong Ave	Lincoln Ave to Clayton Ave	Collector	2	2
Armstrong Ave	Clayton Ave to Adams Ave	Collector	2	2
Temperance Ave	Lincoln Ave to Clayton Ave	Expressway	2	4
Temperance Ave	Clayton Ave to Adams Ave	Expressway	2	4
Temperance Ave	Adams Ave to Walter Ave	Expressway	2	4
Temperance Ave	Walter Ave to Mott Ave	Expressway	2	4
Temperance Ave	Mott Ave to South Ave	Expressway	2	4
Temperance Ave	South of South Ave	Expressway	2	4
Temperance Ave	Manning Ave to Springfield Ave	Collector	2	2

Table 1.3
Diagonal Street Designations

Road	Segments	Designation	Number of Lanes	
			Existing	Planned
Golden State Blvd	American Ave to Lincoln Ave	Expressway	4	4
Golden State Blvd	Lincoln Ave to Clayton Ave	Expressway	4	4
Golden State Blvd	Clayton Ave to Adams Ave	Expressway	4	4
Golden State Blvd	Adams Ave to Merced St	Expressway	4	4
Golden State Blvd	Merced St to South Ave	Expressway	4	4
Golden State Blvd	South Ave to Temperance Ave	Expressway	4	4
Golden State Blvd	Temperance Ave to Valley Dr	Expressway	4	4
Golden State Blvd	Valley Dr to Manning Ave	Expressway	4	4
Golden State Blvd	Manning Ave to Springfield Ave	Expressway	4	4
10 th St	Main St to Fresno St	Collector	2	2
7 th St	Tuolumne St to Merced St	Collector	2	2
5 th St	Tuolumne St to Merced St	Collector	2	2
5 th St	Fresno St to Vine St	Collector	2	2
Merced St	10 th St to 9 th St	Collector	2	2
Merced St	9 th St to 8 th St	Collector	2	2
Merced St	7 th St to 6 th St	Collector	2	2
Merced St	6 th St to 5 th St	Collector	2	2
Merced St	2 nd St to 1 st St	Collector	2	2
Fresno St	5 th St to 4 th St	Collector	2	2

2.0 – TRANSPORTATION IMPACT ANALYSIS

The City of Fowler has adopted transportation impact criteria based on vehicle miles traveled (VMT) as presented in the *Fresno County SB 743 Implementation Regional Guidelines* dated January 2021 by the Fresno Council of Governments.

The Fresno Council of Governments (COG) maintains a travel model that is typically used to forecast traffic volumes for roadways within Fresno County. COG has developed a list of consultants that are qualified and approved to use the travel model. Kittelson & Associates is on the COG consultant list and was engaged to perform traffic modeling for the proposed General Plan. Technical memoranda describing the model validation, land use assumptions, and VMT results are presented in Appendix A.

Implementation of the General Plan is expected to result in per-capita and per-employee VMT below the significance threshold adopted by the City of Fowler. Therefore, the General Plan will cause a less-than-significant transportation impact.

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3.0 – OPERATIONAL ANALYSIS METHODOLOGY

3.1 – Level of Service

The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, Policy MOB-5 of the proposed General Plan encourages LOS C throughout the local circulation network, while allowing LOS D during peak hours at intersections of major streets, at SR 99 interchanges, and along street segments where additional improvements are not feasible. LOS E may be permitted during peak hours on certain intersections and segments where pedestrian and bicycle activity are prioritized.

The Transportation Research Board *Highway Capacity Manual, 6th Edition*, (HCM) defines LOS as, “A quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler’s perspective and LOS F the worst.” Automobile mode LOS characteristics for both unsignalized and signalized intersections are presented in Tables 3.1 and 3.2.

Table 3.1
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Table 3.2
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is no greater than 1.0. Progression is exceptionally favorable or the cycle length is very short.	<10
B	Volume-to-capacity ratio is no greater than 1.0. Progression is highly favorable or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable or cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference for Tables 3.1 and 3.2: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016

Automobile mode LOS characteristics for road segments are presented in Table 3.3.

Table 3.3
Level of Service Characteristics for Road Segments

Level of Service	Description
A	Free-flow operations. High operating speeds with a small amount of platooning.
B	Reasonably free-flow operations. Speed reductions are present and platooning becomes noticeable.
C	Most vehicles traveling in platoons and freedom to maneuver noticeably restricted.
D	Platooning increases significantly and speeds begin to decline.
E	Demand approaching capacity. Speeds seriously curtailed.
F	Demand exceeds capacity and heavy congestion exists. Unstable flow.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2016

3.2 – Road Segment Analysis Methodology

Road segment levels of service were determined based on procedures outlined in the HCM utilizing tables presented in the 2020 Florida Department of Transportation (FDOT) Quality/Level of Service Handbook (Florida tables). It should be noted that the Florida tables present generalized correlations between traffic volumes and LOS based on the nationally-utilized and accepted HCM; the Florida tables are frequently utilized throughout California for road segment analyses. The Florida tables present LOS criteria based on the type of roadway being analyzed and the regional setting (i.e., urban areas or transitioning areas). The appropriate Florida table is dependent upon the setting. The applicable Florida tables are presented in Appendix B.

3.3 – Intersection Analysis Methodology

The levels of service and 95th-percentile queue lengths at the study intersections were determined using the computer program Synchro 11, which is based on HCM procedures for calculating levels of service.

4.0 – EXISTING CONDITIONS

4.1 – Existing Traffic Volumes

Existing traffic volumes on the study road segments were determined by performing 24-hour road segment counts. Peak-hour traffic volumes at intersections with freeway ramps at SR 99 interchanges were determined by performing manual turning-movement counts between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on a weekday. The traffic count data sheets are presented in Appendix C and indicate the dates the counts were taken.

The existing 24-hour and peak-hour traffic volumes at the study road segments are summarized in Table D-1 in Appendix D.

The existing peak-hour turning movement volumes used in the analyses are presented in Figure 4.1, Existing Peak-Hour Traffic Volumes.

4.2 – Existing-Conditions Road Segment Analysis

The results of the road segment analyses for the existing conditions are summarized in Table D-1 in Appendix D. All of the study road segments are currently operating at acceptable LOS during the peak hours.

4.3 – Existing-Conditions Intersection Analysis

The results of the intersection analyses for the existing conditions are summarized in Table 4.1. The intersection analysis sheets are presented in Appendix E.

Table 4.1
Interchange Intersection Analysis Summary – Existing Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Clovis/ SR 99 NB on	Yield	12.2	B	18.5	C
Clovis/ SR 99 NB off	OWS	13.5	B	14.5	B
Clovis / SR 99 SB	OWS	95.8	F	186.7	F
Adams / SR 99 SB off	OWS	9.4	A	10.3	B
Merced / SR 99 SB / Fowler	AWS	22.3	C	18.2	C
Merced / SR 99 NB	TWS	20.0	C	22.9	C
Fowler / SR 99 SB	OWS	11.3	B	10.7	B
Manning / SR 99 SB	OWS	17.1	C	27.7	D
Manning / SR 99 NB	OWS	32.2	D	52.7	F

AWS: all-way stop OWS: one-way stop TWS: two-way stop

5.0 – GENERAL PLAN BUILDOUT CONDITIONS (YEAR 2042)

5.1 – General Plan Buildout Traffic Volumes

An increment method was applied to forecast future traffic volumes. The increment method forecasts future traffic volumes in two general steps:

1. estimating the additional increment of trips that will result from regional growth by taking the difference between the horizon year and base year traffic volumes as calculated by the travel model on each study road segment
2. adding the additional increment of trips to the existing traffic volumes.

The projected 24-hour and peak-hour traffic volumes at the study road segments are summarized in Table D-1 in Appendix D.

Future turning movements at intersections are forecast based on the methods presented in Chapter 8 of the Transportation Research Board National Cooperative Highway Research Program Report 255 entitled “*Highway Traffic Data for Urbanized Area Project Planning and Design.*”

The projected General Plan buildout peak-hour turning movement volumes used in the analyses are presented in Figure 5.1, General Plan Buildout Peak-Hour Traffic Volumes.

5.2 – General Plan Buildout Road Segment Analysis

The results of the road segment analyses for the General Plan buildout conditions are summarized in Table D-2 in Appendix D.

The analyses suggest that the following road segments will operate below the target LOS during the peak hours:

- Golden State Boulevard between Valley Drive and Manning Avenue
- Merced Street between 8th Street and 9th Street
- Merced Street between 9th Street and 10th Street

In order to operate at the target LOS, the roadways would require widening with additional through lanes. However, with constrained conditions limited the potential for widening, it is recommended that the General Plan consider accepting the constrained LOS at these locations.

5.3 – General Plan Buildout Intersection Analysis

The results of the intersection analyses using General Plan buildout traffic volumes and the existing lane configurations at the interchanges are summarized in Table 5.1. The intersection analysis sheets are presented in Appendix E.

Table 5.1
Interchange Intersection Analysis Summary – General Plan Buildout Volumes

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Clovis/ SR 99 NB on	Yield	209.7	F	>300	F
Clovis/ SR 99 NB off	OWS	>300	F	>300	F
Clovis / SR 99 SB	OWS	>300	F	>300	F
Adams / SR 99 SB off	OWS	16.1	C	19.5	C
Merced / SR 99 SB / Fowler	AWS	267.7	F	235.2	F
Merced / SR 99 NB	TWS	>300	F	>300	F
Fowler / SR 99 SB	OWS	32.5	D	38.4	E
Manning / SR 99 SB	OWS	>300	F	>300	F
Manning / SR 99 NB	OWS	>300	F	>300	F

AWS: all-way stop OWS: one-way stop TWS: two-way stop

In order to operate at acceptable LOS with manageable queues contained within available storage lanes, major interchange improvements are expected to be required at the following interchanges:

- Clovis Avenue / SR 99
- Merced Street / Fowler Avenue / SR 99
- Manning Avenue / SR 99

The Adams Avenue interchange currently includes only a northbound on ramp and a southbound off ramp serving traffic on Adams Avenue that travels east of the freeway. In order to accommodate development west of the freeway, improve circulation and accessibility, and alleviate conditions at the interchanges at Clovis Avenue and Merced Street, consideration should be given to expanding the Adams Avenue interchange to provide full access to both directions of the freeway. Development of new local streets connecting to Adams Avenue and Clovis Avenue should take into consideration the future expansion of the Adams Avenue interchange.

Project-specific analyses will be required for all interchange improvements, with Caltrans involvement, to determine the actual improvements to be constructed and potential funding sources. The improvements to be constructed would be required to conform to typical Caltrans requirements for a design life extending beyond the opening year of the improvements. As such, the design year may be well beyond 2042 and the design traffic volumes are likely to differ from the General Plan buildout traffic volumes presented herein.

5.4 – Potential Intersection Control Improvements

The following list identifies intersections that are currently stop-sign controlled but will likely require additional intersection control, typically in the form of traffic signals or roundabouts, with buildout of the General Plan.

1. American Avenue / Golden State Boulevard
2. Jefferson Avenue / Golden State Boulevard
3. Lincoln Avenue / Golden State Boulevard
4. Lincoln Avenue / Clovis Avenue
5. Lincoln Avenue / Fowler Avenue
6. Lincoln Avenue / Armstrong Avenue
7. Lincoln Avenue / Temperance Avenue
8. SR 99 NB ramps / Clovis Avenue
9. SR 99 SB ramps / Clovis Avenue
10. Clayton Avenue / Fowler Avenue
11. Adams Avenue / Clovis Avenue
12. Adams Avenue / Fowler Avenue
13. Adams Avenue / Armstrong Avenue
14. Adams Avenue / Temperance Avenue (programmed in the RTP)
15. Sumner Avenue / Clovis Avenue
16. Merced Street / Sumner Avenue / Fowler Avenue
17. Merced Street / SR 99 SB ramps
18. Merced Street / SR 99 NB ramps
19. Merced Street / 10th Street (programmed in the RTP)
20. Merced Street / 7th Street
21. Merced Street / 5th Street
22. Fresno Street / Fowler Avenue
23. SR 99 SB on ramp / Fowler Avenue
24. South Avenue / Clovis Avenue
25. South Avenue / Fowler Avenue
26. South Avenue / Golden State Boulevard
27. South Avenue / Temperance Avenue
28. Golden State Boulevard / Temperance Avenue (programmed in the RTP)
29. Manning Avenue / SR 99 SB ramps
30. Manning Avenue / SR 99 NB ramps
31. Manning Avenue / DeWolf Avenue

6.0 – CONCLUSIONS

Generally-accepted traffic engineering principles and methods were employed to determine the existing traffic volumes, to analyze the existing traffic conditions, to project future traffic volumes, and to analyze the traffic conditions projected to occur in the future.

Implementation of the General Plan is expected to result in per-capita and per-employee VMT below the significance threshold adopted by the City of Fowler. Therefore, the General Plan will cause a less-than-significant transportation impact.

A majority of the major streets in the City of Fowler are expected to operate at acceptable LOS (complying to Policy MOB-5) with implementation of the General Plan. The following road segments are expected to operate below the target LOS:

- Golden State Boulevard between Valley Drive and Manning Avenue
- Merced Street between 8th Street and 9th Street
- Merced Street between 9th Street and 10th Street

In order to operate at acceptable LOS with manageable queues contained within available storage lanes, major interchange improvements are expected to be required at the following interchanges:

- Clovis Avenue / SR 99
- Merced Street / Fowler Avenue / SR 99
- Manning Avenue / SR 99

In order to accommodate development west of the freeway, improve circulation and accessibility, and alleviate conditions at the interchanges at Clovis Avenue and Merced Street, consideration should be given to expanding the Adams Avenue interchange to provide full access to both directions of the freeway. Development of new local streets connecting to Adams Avenue and Clovis Avenue should take into consideration the future expansion of the Adams Avenue interchange.

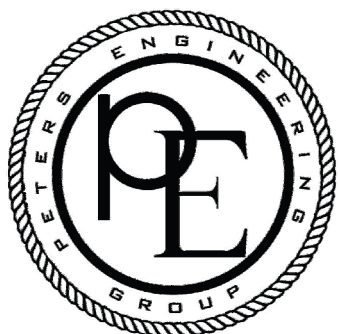
With buildout of the General Plan, it is estimated that approximately 31 intersections that are currently stop-sign controlled will likely require additional intersection control, typically in the form of traffic signals or roundabouts.

FIGURES



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SITE VICINITY MAP
 Proposed Fowler General Plan
 Fowler, California



NOT TO SCALE

Figure 1.1



CIRCULATION MAP
 Proposed Fowler General Plan
 Fowler, California

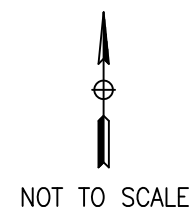
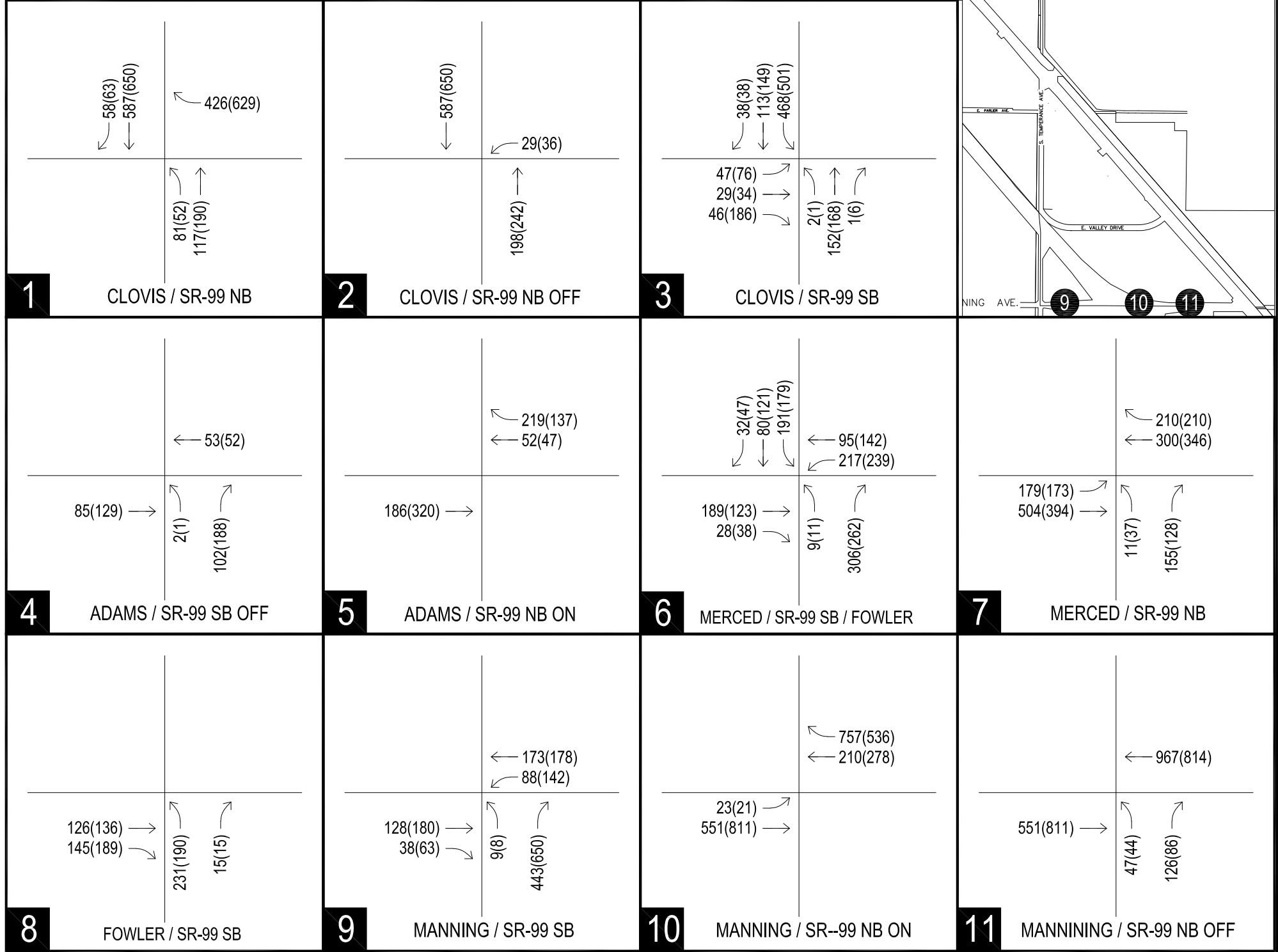
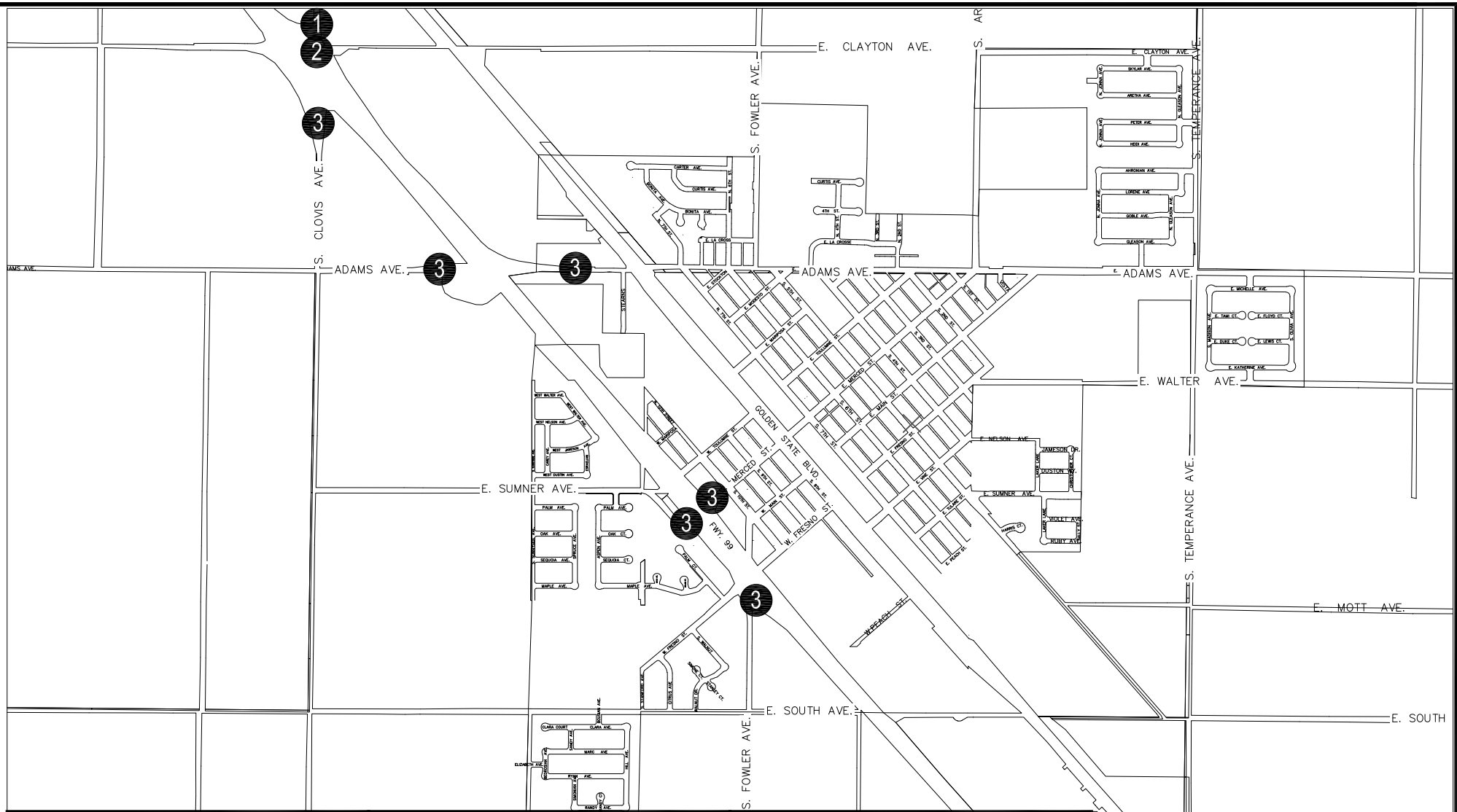


Figure 1.2



LEGEND

- XX** STUDY AREA INTERSECTIONS
- XX (YY) AM (PM) VOLUMES



EXISTING PEAK-HOUR TRAFFIC VOLUMES
Proposed Fowler General Plan
Fowler, California

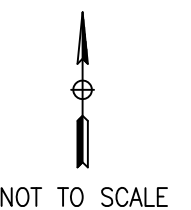
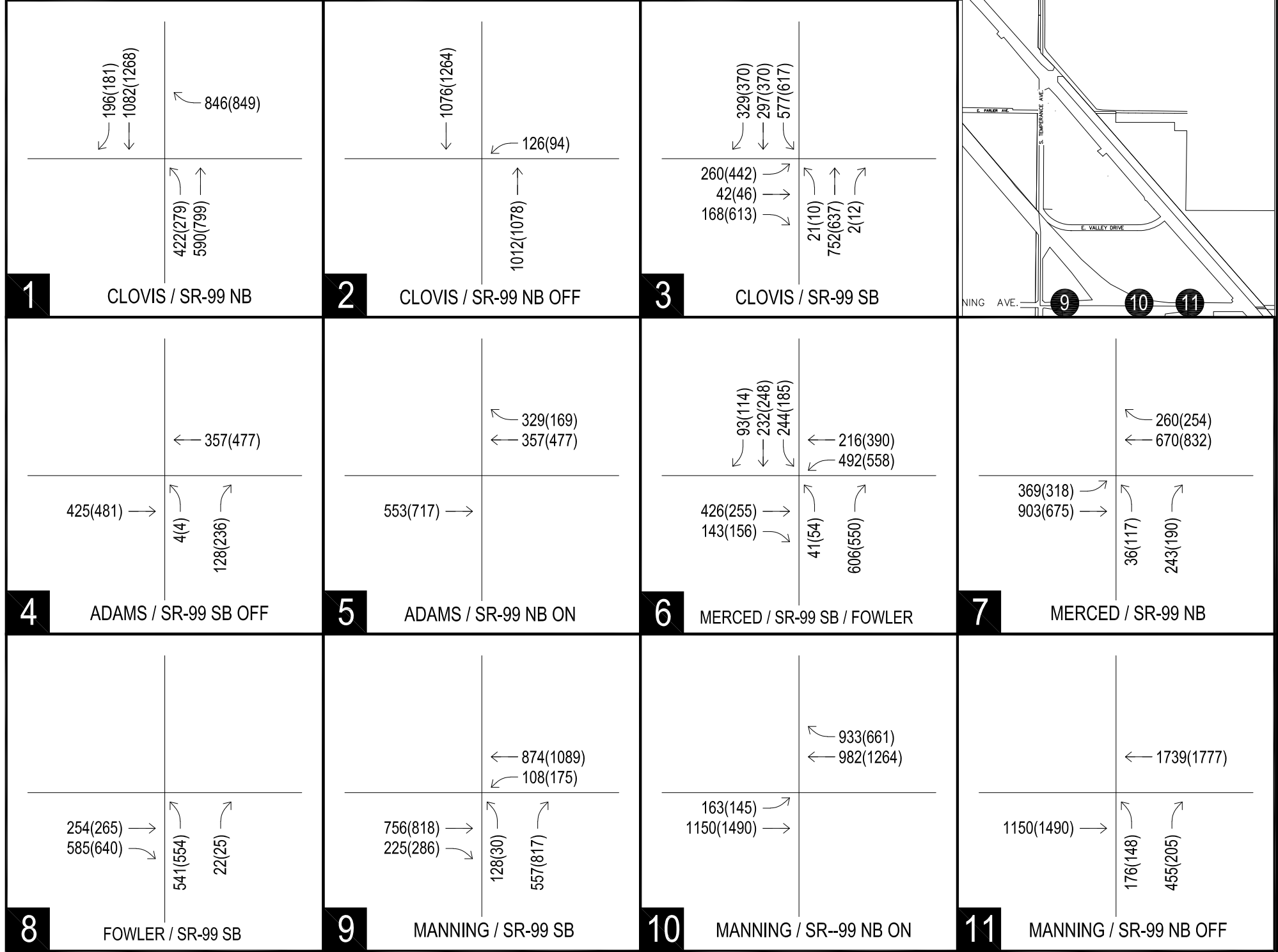
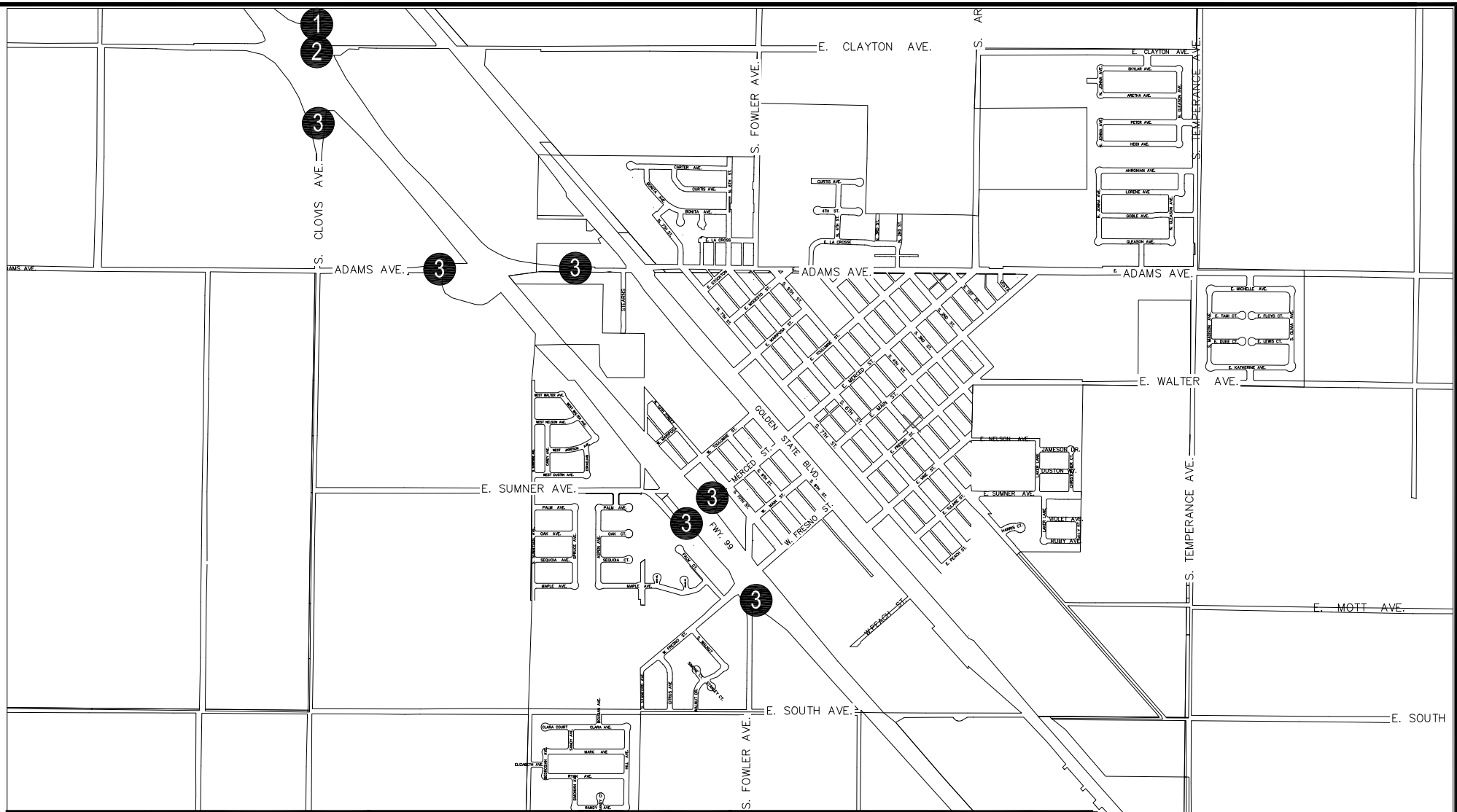


Figure 4.1



LEGEND

- XX** STUDY AREA INTERSECTIONS
- XX (YY) AM (PM) VOLUMES



**GENERAL PLAN BUILDOUT
PEAK-HOUR TRAFFIC VOLUMES**
Proposed Fowler General Plan
Fowler, California



NOT TO SCALE

Figure 5.1

APPENDIX A

TRAFFIC MODELING



PETERS ENGINEERING GROUP

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Technical Memorandum

June 24, 2022

Project# 26268

To: Sara Allinder, Provost & Pritchard Consulting Group
John Rowland, Peters Engineering Group

From: Anusha Musunuru, PhD; Mike Aronson, PE; Sam Liu; Kittelson & Associates, Inc.

RE: City of Fowler General Plan Update – Land Use Assumptions

Introduction

Kittelison & Associates (Kittelison) has prepared this memorandum to describe the land uses that we assumed for the full buildout scenario of the City of Fowler General Plan Update to be used in the Fresno Council of Governments Activity Based Travel Demand Model (Fresno COG ABM).

Kittelison calculated the full buildout scenario that represents a high development amount and could result in the identification of maximum infrastructure requirements. The full buildout scenario assumed 15,718 households and 30,104 employees within the City Planning Area boundary in 2042.

Methodology

The land use assumptions for full buildout were developed by Provost & Pritchard (P&P) in coordination with the City of Fowler. P&P provided the acreages and proposed land use designations for each parcel within the Fowler planning area. The land uses were provided in a GIS format.

Kittelison reviewed the land uses that were provided by P&P and confirmed the land use assumptions and development levels to assume for transportation infrastructure in the City. The parcels were associated with both the transportation analysis zones (TAZs) and smaller micro-analysis zones (MAZs) used in the travel model, shown in Figure 1. For each land use designation, Kittelison identified an assumed density of number of housing units or square feet of non-residential building per acre. The square footages of non-residential uses were then converted to typical numbers of employees by job type that are used in the travel model to estimate trip generation.

Land Use Assumptions

Kittelison calculated the buildout forecast which could be used to identify infrastructure requirements and inform the CEQA documentation. The buildout forecast represents a most likely amount of development under the proposed zoning rather than the maximum possible amount of development. This provides more reasonable estimates of future traffic activity for planning of infrastructure needs. Individual parcels may still be developed to the maximum allowable levels, but typically other parcels will develop at lower densities or not be fully developed at all.

The buildout forecast is based on the following assumptions:

- Residential: Use 80% of the allowable densities for each zoning category rather than maximum densities, and

- Non-Residential: Assume that most of the parcels would develop at a typical non-central-business-district (CBD) floor area ratios (FARs) rather than maximum FARs.

The full buildout development capacity is shown in Table 1 (Residential) and Table 2 (Non-Residential). The City of Fowler General Plan Update would have the capacity of about 15,718 housing units and 30,104 employees, if developed at the above assumed densities.

Table 1: City of Fowler General Plan Update Housing Units

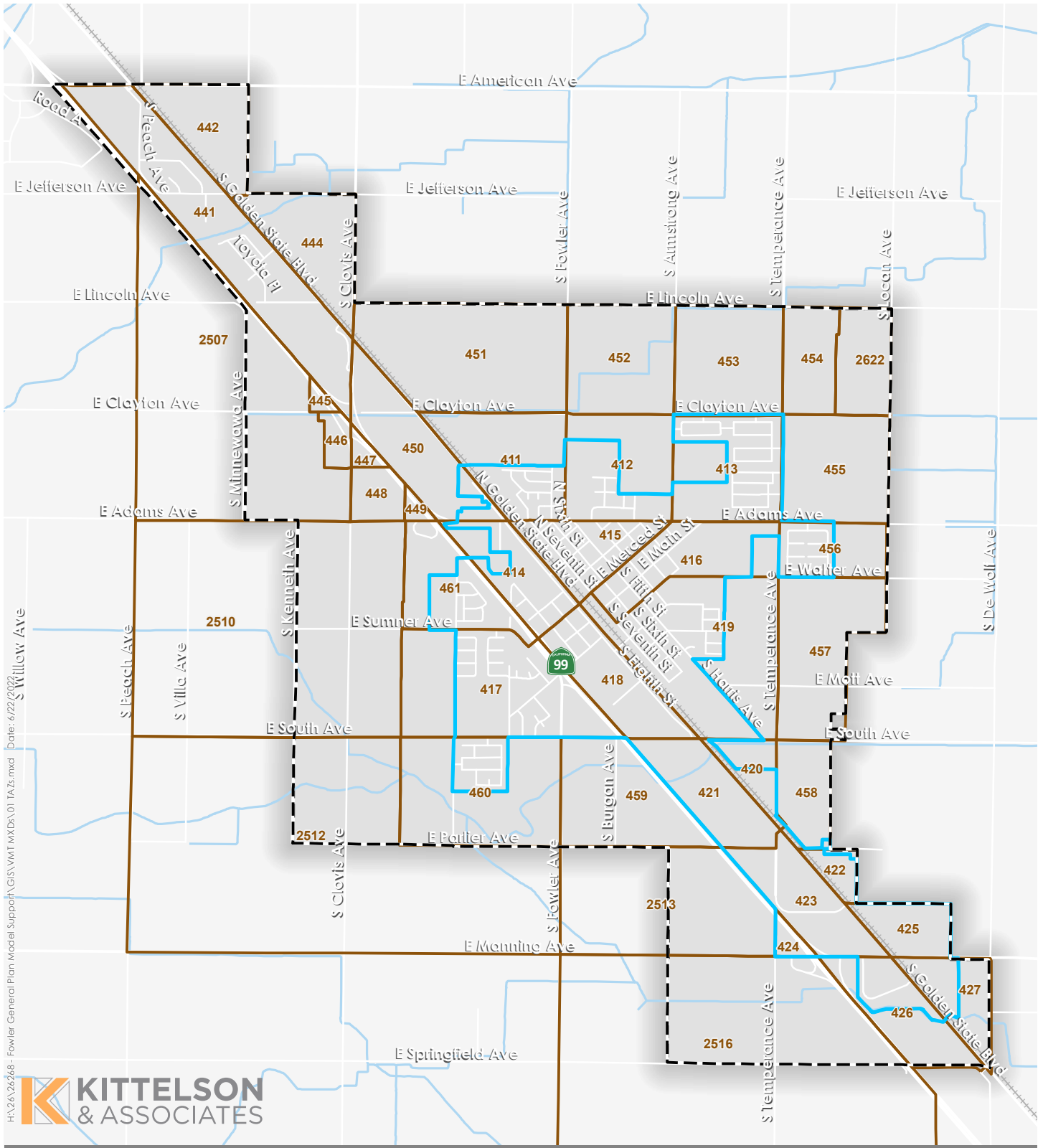
General Plan Land Use Designations (and Density/Intensity)	Acres	Assumed Development per Full Buildout Scenario	
		Units per Acre	Dwelling Units
Residential			
Low (0-3.6 DU/AC)	789.77	2.88	2,275
Medium Low (3.7-5.5 DU/AC)	936.80	4.40	4,122
Medium (5.6-8.1 DU/AC)	733.31	6.48	4,752
Medium High (8.2-13.5 DU/AC)	203.09	10.80	2,193
High (13.6-21.8 DU/AC)	83.08	17.44	1,449
<i>Subtotal - Residential</i>	<i>2,746.06</i>		<i>14,791</i>
Mixed Use			
Community Commercial (13.6-21.8 DU/AC)	53.14	17.44	927
<i>Subtotal - Mixed Use</i>	<i>53.14</i>		<i>927</i>
TOTAL	2,799.20		15,718

Source: P&P, Kittelson & Associates, Inc., 2022

Table 2: City of Fowler General Plan Update Non-Residential Uses

General Plan Land Use Designations (and Density/Intensity)	Acres	Assumed Development per Full Buildout Scenario		
		FAR	Non-Residential SF	Estimated Employees
Commercial				
Neighborhood (0.4 Max FAR; 729 sq ft/employee)	28.38	0.2	247,246.56	339
Community (13.6-21.8 DU/AC; 0.4 Max FAR; 504 sq ft/employee)	53.14	0.2	925,998.48	918
General (0.4 Max FAR; 504 sq ft/employee)	209.62	0.2	1,826,209.44	3,624
<i>Subtotal - Commercial</i>	<i>291.14</i>		<i>2,999,454.48</i>	<i>4,881</i>
Industrial				
Light (0.6 Max FAR; 615 sq ft/employee)	595.66	0.3	7,784,084.88	12,657
Heavy (0.6 Max FAR; 1,154 sq ft/employee)	1,105.15	0.3	14,442,100.20	12,515
<i>Subtotal – Industrial</i>	<i>1,700.82</i>		<i>22,226,185.08</i>	<i>25,172</i>
Public Facilities				
Parks/Open Space (0.25 Max FAR)	55.03	0.025	59,927.67	2
Public Facilities (0.25 Max FAR)	123.30	0.1	537,094.80	49
<i>Subtotal – Public Facilities</i>	<i>178.34</i>		<i>597,022.47</i>	<i>51</i>
TOTAL	2,170.30		25,822,662.03	30,104

Source: P&P, Kittelson & Associates, Inc., 2022



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- TAZs (Labeled with TAZ number)
- Sphere of Influence
- Fowler City Limits

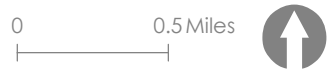


Figure 1

Transportation Analysis Zones (TAZs) Fowler, California

Technical Memorandum

June 24, 2022

Project# 26268

To: Sara Allinder, Provost & Pritchard Consulting Group
John Rowland, Peters Engineering Group

From: Anusha Musunuru, PhD; Mike Aronson, PE; Sam Liu; Kittelson & Associates, Inc.

RE: City of Fowler General Plan Update Base Year Model Validation

Introduction

Kittelison & Associates (Kittelison) has prepared this memorandum to present the base year validation results of the Fresno Council of Governments Activity Based Travel Demand Model (Fresno COG ABM). This validation focuses only on roads within the Fowler Planning Area and does not evaluate the validation for the full study area of the travel model which covers all of Fresno County.

Base Year Validation

Model validation refers to comparing the travel model outputs (i.e., estimated traffic volumes) to observed conditions (i.e., traffic counts). During validation, adjustments are primarily made to model inputs, such as the road network and base year land uses rather than calibrated parameters such as trip generation rates or peak factors. Once validated, the model can be used to predict future travel patterns with a greater degree of confidence.

MODEL UPDATES

Kittelison compared the current roadway network from Google Earth to the travel demand model roadway network as provided by Fresno COG. Kittelison made changes and updates as necessary to reflect the current conditions, including adding key local road connections and adjusting assumed speeds.

No changes were made to the land uses within the City of Fowler Planning Area boundary for the 2019 base year. The land use inputs provided by Fresno COG were examined and appeared to accurately represent the locations and quantities of existing land uses in Fowler.

TRAFFIC COUNTS

Peters Engineering Group (PEG) provided traffic count data at select locations throughout the City of Fowler. The traffic counts for each location were provided as directional counts for AM peak hour (7-8 AM), PM peak hour (5-6 PM), and daily time periods for representing a 2021 base year. Given a general lack of regional traffic growth between 2019 and 2021, it is assumed that the 2021 traffic counts can be used to compare to the travel model 2019 base year.

Kittelison manually identified the travel model segments that correspond to each traffic count location and added the travel model node ID information to the traffic count database to facilitate direct comparisons.

TRAFFIC VALIDATION

The Fresno COG travel model validation is based on several criteria, including volume by road type and correlation coefficient. The validation tests are based on example guidelines provided by the Federal Highway Administration (FHWA)¹.

Traffic Volume by Facility Type

Traffic model estimates are compared to traffic counts for all road segments with available traffic count data. The results are compared for daily total traffic and each peak period.

The FHWA has published suggested error limits for total error by functional classification (facility type)²:

- Minor arterials – Less than 15 percent
- Collectors – Less than 25 percent
- Frontage Roads – Less than 25 percent

The 2019 base year validation results were compared to the 2021 traffic counts for the daily, AM peak hour, and PM peak hour time periods included in the model (Table 1).

Table 1: Traffic Validation by Facility Type

Facility Type	Criteria	Daily	AM Peak Hour	PM Peak Hour
Arterial	+/- 15%	8%	66%	48%
Collector	+/- 25%	-42%	-38%	-21%
Local	+/- 25%	-33%	-29%	-15%
All Roads	+/- 5%	-5%	33%	31%

For the daily time period, the model meets the validation criteria for arterial roads and all roads combined. The model estimates volumes lower than traffic counts on collector and local roads. This indicates that the model may not have enough geographic detail (size of transportation analysis zones that are used to group land uses) to accurately assign traffic to individual collector and local road segments. Adjusting the geographic detail of the model TAZs requires changes to many model steps and was not considered to be practical within the constraints of this General Plan Update process.

For the peak hours, the model estimates traffic volumes on collector and local streets that are closer to traffic counts, and meet the validation criteria for the PM peak hour. The peak hour model volumes are much higher than traffic counts on all roads combined and on arterials. Upon detailed review, it was found that these high model volumes are not related to the model's estimates of traffic within Fowler, but instead are due to very high estimates of regional traffic volumes passing through Fowler on roads such as Manning

¹ Federal Highway Administration, *Travel Model Validation and Reasonability Checking Manual Second Edition*, 2010.

² Federal Highway Administration, *Calibration and Adjustment of System Planning Models*, 1990.

Avenue and Temperance Avenue. Adjustments to the model network assumptions would not resolve these high regional volumes. Therefore, it was determined that an adjustment process would be used to compensate for the high volume estimates, as described below.

Correlation Coefficient

The FHWA guidelines include a guideline based on the statistical correlation coefficient (r). The correlation coefficient is based on the comparison of traffic counts and model volumes on each segment. The Fresno model correlation coefficient exceeds the minimum criteria of 0.88 for daily but does not exceed the minimum criteria for AM and PM peak hours (Table 2). This indicates that the model is generally reliable for the magnitude of daily traffic volumes but requires additional adjustments to be applied for peak hour volumes, as described below.

Table 2: Traffic Validation by Correlation Coefficient

Volume Group	Criteria	Daily	AM Peak Hour	PM Peak Hour
All Roads	>0.88	0.909	0.837	0.858

Conclusions

The Fresno COG model for the City of Fowler Planning Area meets traffic validation criteria and correlation coefficient criteria for the daily time period. The model is more accurate on collector and local streets for the peak hours, particularly the PM peak hour, but overall tends to overestimate peak hour volumes particularly along arterial roads that serve regional traffic patterns.

ADJUSTMENTS

As with any travel model, it is recommended that traffic forecasts on specific roadway segments use an adjustment process that accounts for validation errors. Where base year traffic counts are available, forecast volumes are recommended to be calculated based on the increment between the base year and future year model results:

$$\text{Adjusted Forecast Volume} = \text{Base Year Count} + (\text{Model Forecast Volume} - \text{Base Year Model Volume})$$

Where base year traffic counts are not available (for example, on a roadway that will only exist in the future), direct model forecast volumes can be used with appropriate reasonableness checks.

Technical Memorandum

June 24, 2022

Project# 26268

To: Sara Allinder, Provost & Pritchard Consulting Group
John Rowland, Peters Engineering Group

From: Anusha Musunuru, PhD; Mike Aronson, PE; Kittelson & Associates, Inc.

RE: City of Fowler General Plan Update – Vehicle Miles Traveled (VMT) Impact Assessment

INTRODUCTION

Kittelison & Associates (Kittelison) has prepared this vehicle miles traveled (VMT) impact assessment for the City of Fowler General Plan update. This VMT assessment is based on the Full Buildout land use scenario that was developed by Provost & Pritchard (P&P) in coordination with the City of Fowler (City). Kittelison conducted the travel demand modeling with Fresno Council of Governments (Fresno COG) Activity Based Model (ABM). The VMT assessment is based on the SB 743 requirements and Fresno County VMT guidelines and regionwide VMT thresholds.

The Full Buildout scenario of the General Plan update includes a total of 15,718 households and 30,104 employees within the City of Fowler and its sphere of influence (SOI), i.e., the planning area. Travel forecasts were prepared for both the existing 2019 model year and future 2042 cumulative model year conditions. VMT were extracted by individual transportation analysis zone (TAZ) and also at the citywide total level based on the efficiency metrics, VMT per Capita and VMT per Employee. The results were compared to the Fresno County regional average to determine if the General Plan Full Buildout scenario would contribute to a VMT impact under SB 743 and Fresno County regionwide VMT thresholds.

SUMMARY

Kittelison evaluated the General Plan Full Buildout scenario using an overall systemwide VMT assessment, i.e., considering all the TAZs within the planning area for evaluating VMT impacts. The overall effect of increasing the Fowler planning area to 15,718 housing units and 30,104 employees in the locations identified by the General Plan would be to provide more opportunities for needs to be met within Fowler, shorten average trip lengths, promote mode choice to non-auto modes and reduce VMT per Capita and VMT per Employee for the City under 2042 plus cumulative project, i.e., Full Buildout conditions compared to existing conditions.

VMT THRESHOLDS

VMT thresholds are defined using recommendations from the California Office of Planning and Research (OPR) based on their advisory report, dated December 2018. Cities and counties could opt to develop their own methods, but CEQA impact criteria are generally consistent with OPR recommendations. The City of Fowler has not yet adopted specific VMT criteria and thresholds, hence Kittelison used the VMT thresholds developed by Fresno COG as potential guidance for all jurisdictions in Fresno County. This CEQA impact analysis is based on the COG VMT policy, guidelines, and supplemented with OPR recommendations (where applicable and necessary).

Kittelson compared the VMT metrics for the Fowler General Plan update Full buildout scenario to the Fresno County regionwide average. Based on the OPR and Fresno regionwide thresholds and guidelines, any development that does not immediately screen out for a VMT per capita and VMT per employee assessment should produce a VMT per capita or VMT per employee of 13% less than the baseline regionwide average.

In Fresno County, the screening criteria for CEQA Exemptions include the following for land use development projects:

1. Within ½ mile of a transit priority area or a high-quality transit area,
2. All projects that involve local-serving retail space of less than 50,000 square feet (sf),
3. Projects containing a high-level of affordable housing units (these affordable-housing requirements are to be determined by each Fresno COG jurisdiction),
4. All projects that generate fewer than 500 average daily trips (ADT),
5. All projects that include additions to existing structures of up to 10,000 sf, if the project is in an area where public infrastructure is available to allow for maximum planned development,
6. All projects that involve institutional/government and public service uses, i.e., police stations, fire stations, community centers, refuse stations, etc. are exempt, and
7. All projects located in the low VMT areas, in a TAZ that has the VMT per capita and VMT per employee that is 13% lower than the baseline regional average.

VMT RESULTS

For Fowler, VMT metrics are compared to the Fresno regionwide average, and an impact is assessed if the project VMT per capita would be higher than the established threshold of 13% below the regionwide average.

At the aggregate level, Table 1 and Table 2 indicate that the Full Buildout scenario of the General Plan Update would result in decreased VMT per capita and VMT per employee in comparison to the 2019 baseline condition, also shown in Figures 1 through 5. VMT per capita would decrease by 39% from 20.0 in 2019 to 12.3 in 2042 and would be below the impact threshold of 14.0. Non-residential VMT per employee would decrease by 53% from 35.6 in 2019 to 16.7 in 2042 and would be below the impact threshold of 22.3. Both metrics, VMT per capita and VMT per employee would produce an impact that is **less than significant**. These VMT reductions indicate that the future full buildout scenario and development would allow Fowler residents and employees to access jobs and services within the city and within shorter distances compared to existing conditions.

Table 1: 2019 & 2042 City and Countywide VMT per Capita

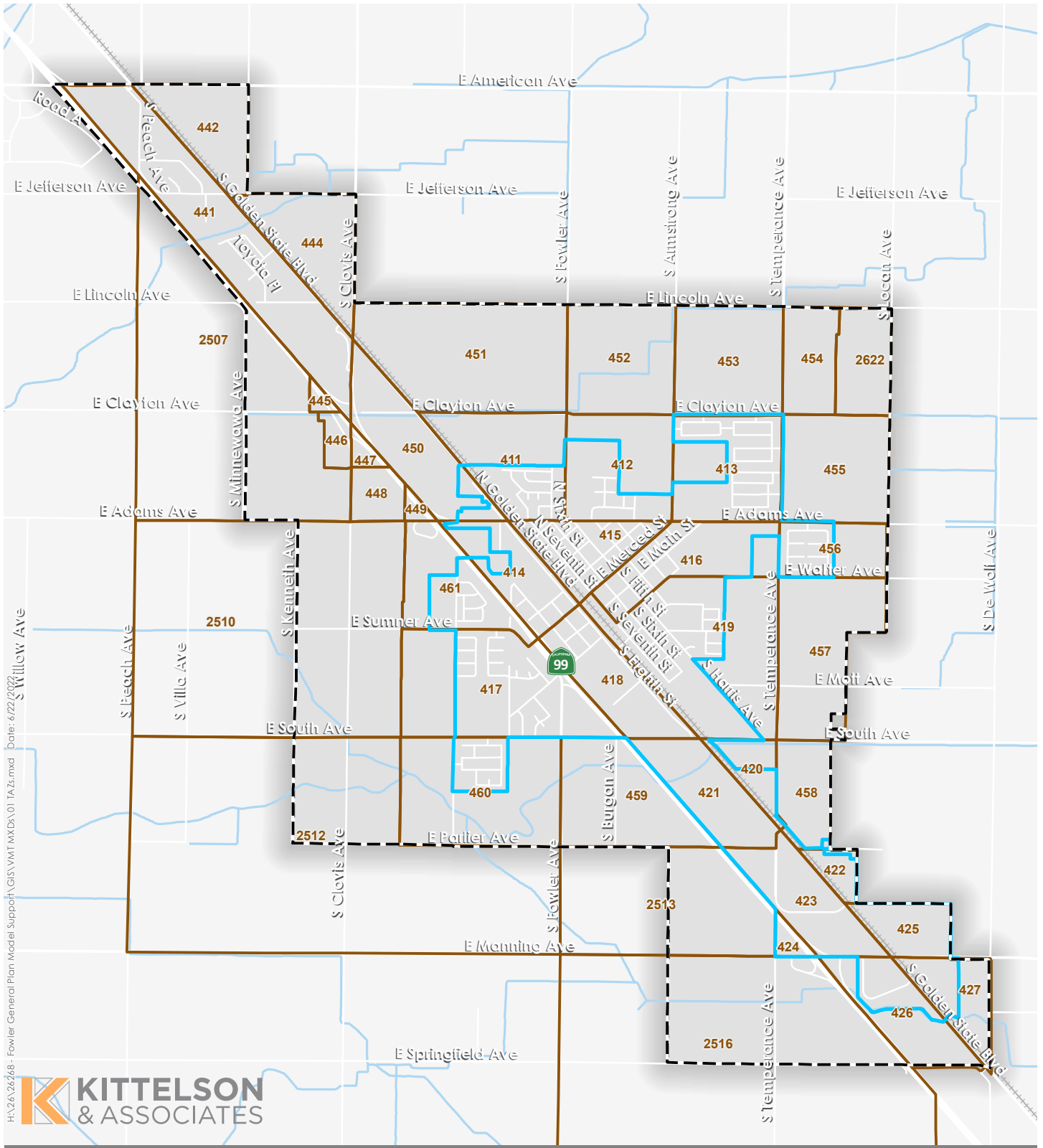
Scenario	Year	Population	Residential VMT	VMT per Capita	Impact Threshold*
Fresno County	2019	1,010,400	16,267,400	16.1	14.0
Fowler Planning Area	2019	6,808	136,275	20.0	14.0
Fowler Planning Area	2042	48,404	594,121	12.3	14.0

*: 13% below regionwide average (16.1); Source: Fresno COG ABM, Kittelson & Associates, Inc.

Table 2: 2019 & 2042 City and Countywide VMT per Employee




Scenario	Year	Employees	Employee VMT	VMT per Employee	Impact Threshold*
Fresno County	2019	404,100	10,345,340	25.6	22.3
Fowler Planning Area	2019	3,340	118,857	35.6	22.3
Fowler Planning Area	2042	30,102	502,225	16.7	22.3

*: 13% below regionwide average (25.6); Source: Fresno COG ABM, Kittelson & Associates, Inc.



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-  TAZs (Labeled with TAZ number)
-  Sphere of Influence
-  Fowler City Limits

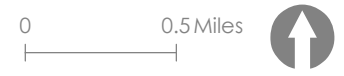
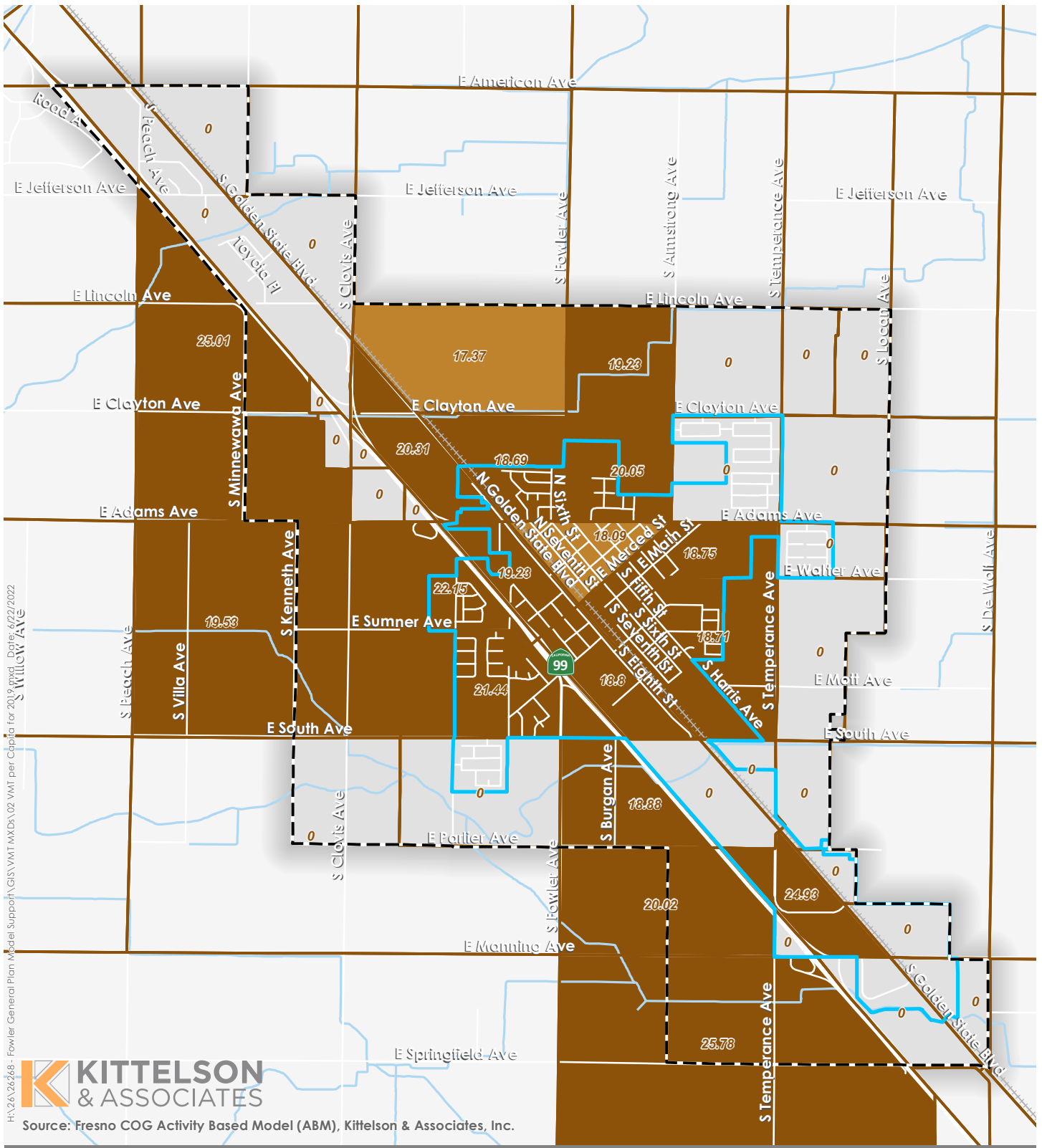


Figure 1

Transportation Analysis Zones (TAZs) Fowler, California



2019 VMT per Capita by TAZ

- No Data
- Less than 13% Below Regional Average
- 13% Below to Regional Average
- Regional Average to 13% Above
- More than 13% above Regional Average

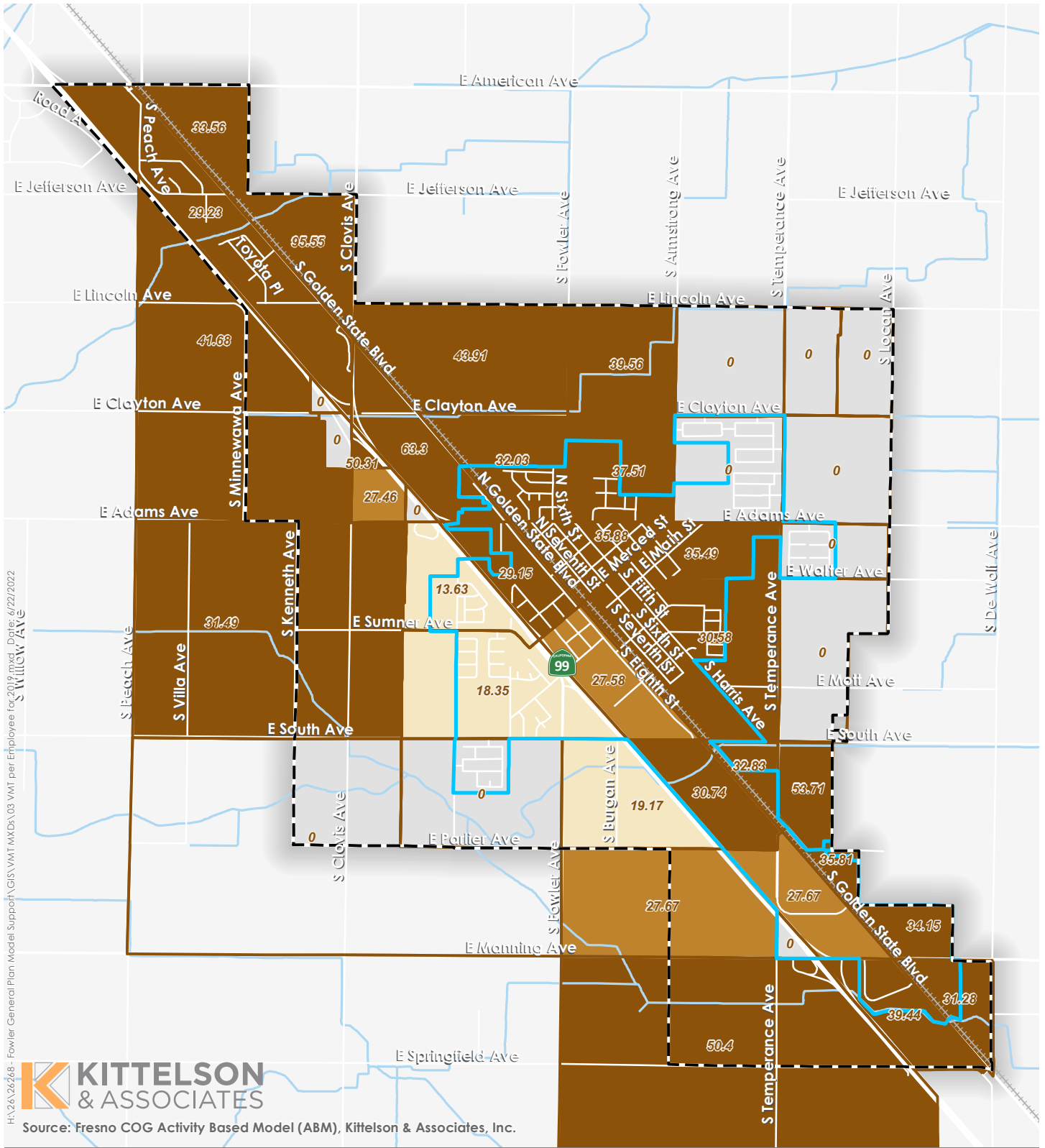
VMT Per Capita Regional Average = 16.1

- Sphere of Influence
- Fowler City Limits



Figure 2

**VMT per Capita for 2019
Fowler, California**



2019 VMT per Employee by TAZ

- No Data
- Less than 13% Below Regional Average
- 13% Below to Regional Average
- Regional Average to 13% Above
- More than 13% above Regional Average

VMT Per Employee Regional Average = 25.6

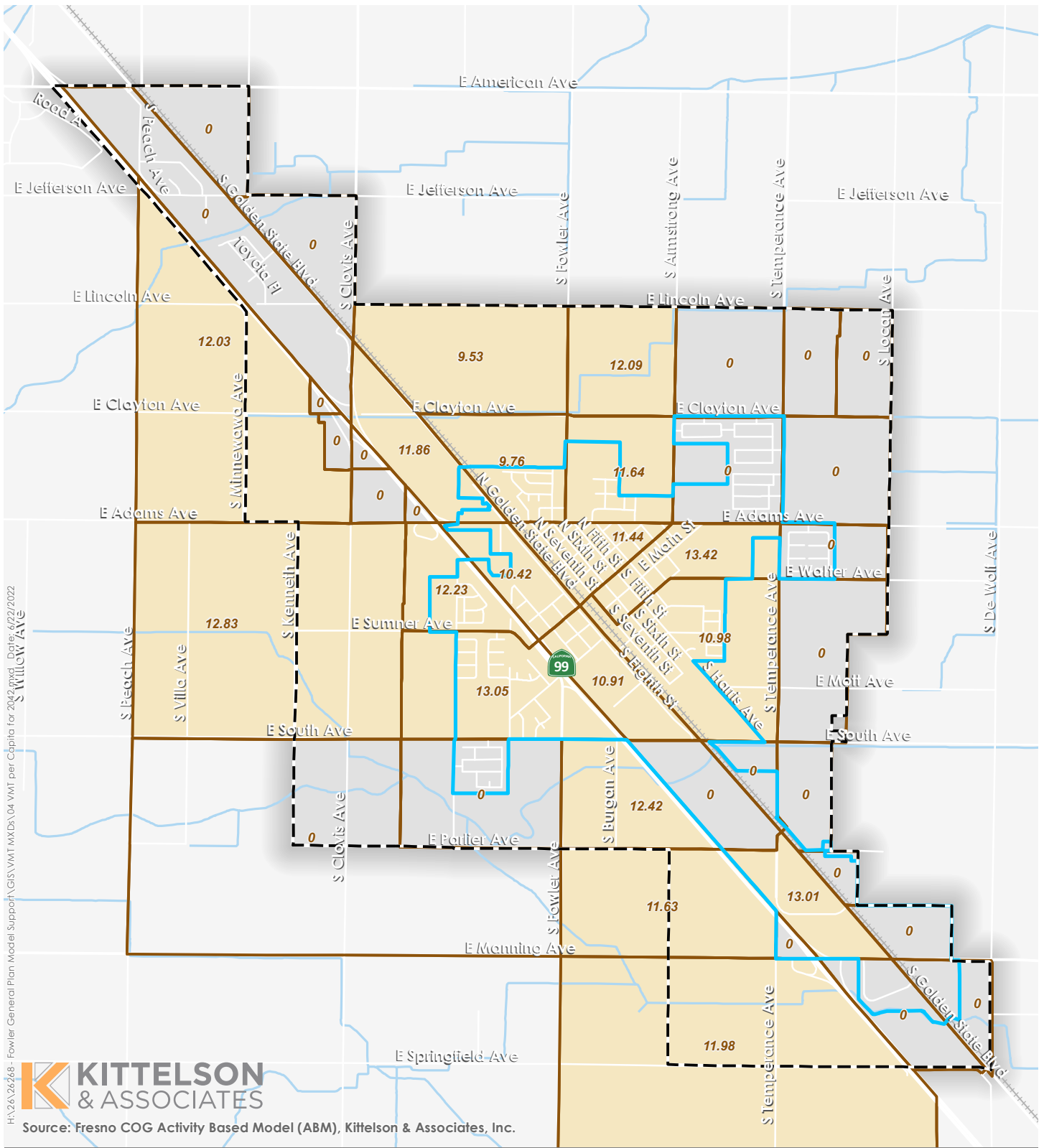
- Sphere of Influence
- Fowler City Limits

0 0.5 Miles



Figure 3

**VMT per Employee for 2019
Fowler, California**



2042 VMT per Capita by TAZ

- No Data
- Less than 13% Below Regional Average
- 13% Below to Regional Average
- Regional Average to 13% Above
- More than 13% above Regional Average

VMT Per Capita Regional Average = 16.1

- Sphere of Influence
- Fowler City Limits

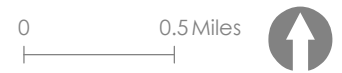
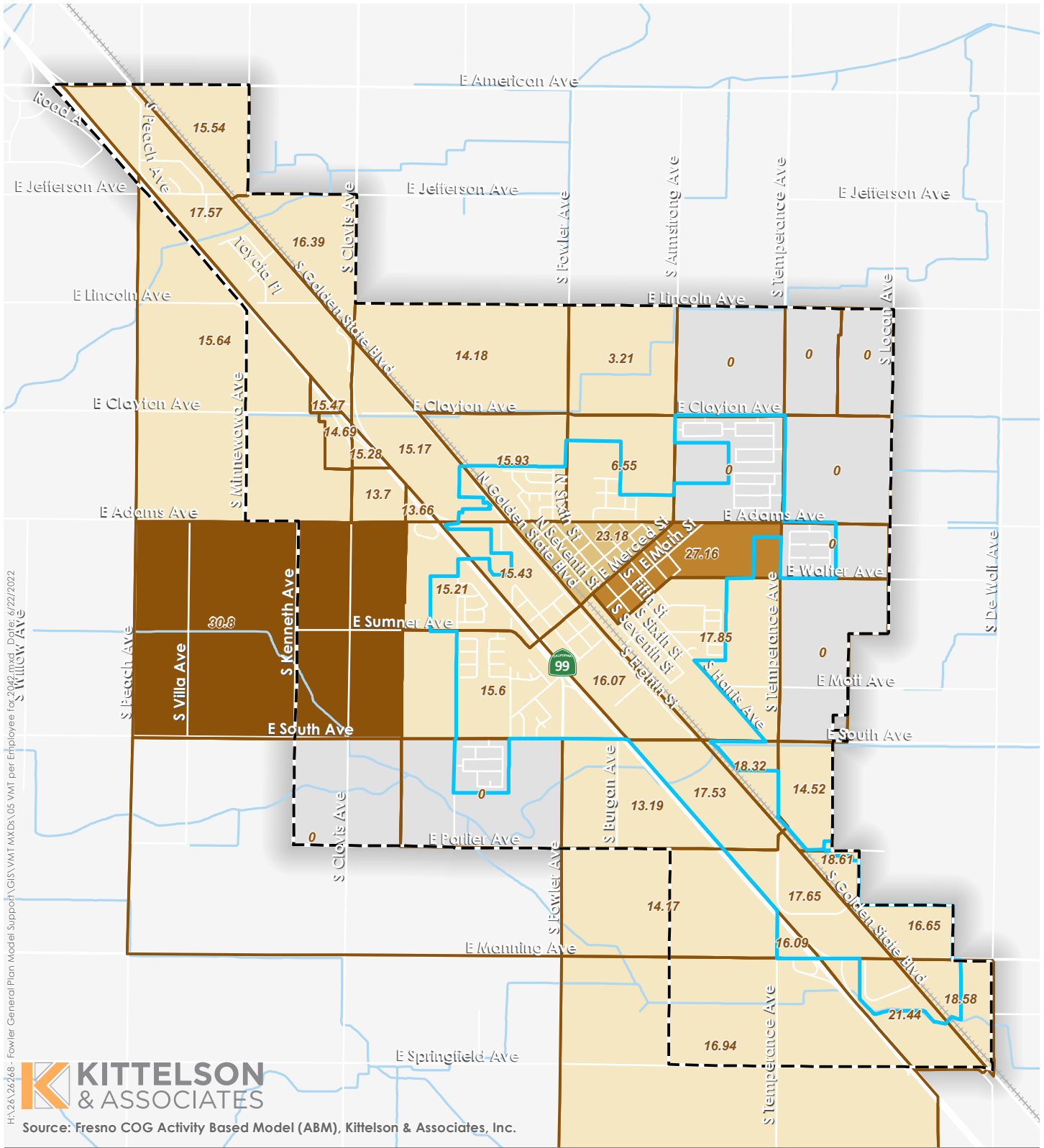


Figure 4

**VMT per Capita for 2042
Fowler, California**



2042 VMT per Employee by TAZ

- No Data
- Less than 13% Below Regional Average
- 13% Below to Regional Average
- Regional Average to 13% Above
- More than 13% above Regional Average

- Sphere of Influence
- Fowler City Limits



VMT Per Employee Regional Average = 25.6

**VMT per Employee for 2042
Fowler, California**

Figure 5

APPENDIX B

FLORIDA TABLES



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TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's
Urbanized Areas¹

January 2020

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	1,510	1,600	**	4	4,050	5,640	6,800	7,420	
4	Divided	*	3,420	3,580	**	6	5,960	8,310	10,220	11,150	
6	Divided	*	5,250	5,390	**	8	7,840	10,960	13,620	14,850	
8	Divided	*	7,090	7,210	**	10	9,800	13,510	17,040	18,580	
						12	11,600	16,350	20,930	23,200	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	660	1,330	1,410	4	4,130	5,640	7,070	7,690	
4	Divided	*	1,310	2,920	3,040	6	6,200	8,450	10,510	11,530	
6	Divided	*	2,090	4,500	4,590	8	8,270	11,270	13,960	15,380	
8	Divided	*	2,880	6,060	6,130	10	10,350	14,110	17,310	19,220	
Non-State Signalized Roadway Adjustments (Alter corresponding state volumes by the indicated percent.)						Freeway Adjustments					
Non-State Signalized Roadways - 10%						Auxiliary Lanes Present in Both Directions + 1,800					
						Ramp Metering + 5%					
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	1,050	1,620	2,180	2,930
2	Undivided	No	No	-20%		4	Divided	3,270	4,730	5,960	6,780
Multi	Undivided	Yes	No	-5%		6	Divided	4,910	7,090	8,950	10,180
Multi	Undivided	No	No	-25%		Uninterrupted Flow Highway Adjustments					
-	-	-	Yes	+ 5%		Lanes	Median	Exclusive left lanes	Adjustment factors		
One-Way Facility Adjustment Multiply the corresponding two-directional volumes in this table by 0.6						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE² (Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						¹ Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.					
Paved						² Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.					
Shoulder/Bicycle						³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.					
Lane Coverage	B	C	D	E		* Cannot be achieved using table input value defaults.					
0-49%	*	260	680	1,770		** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
50-84%	190	600	1,770	>1,770		<i>Source:</i> Florida Department of Transportation Systems Implementation Office https://www.fdot.gov/planning/systems/					
85-100%	830	1,700	>1,770	**							
PEDESTRIAN MODE² (Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	250	850							
50-84%	*	150	780	1,420							
85-100%	340	960	1,560	>1,770							
BUS MODE (Scheduled Fixed Route)³ (Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							

TABLE 4
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's
Urbanized Areas

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities						
	Freeways	Core Freeways	Highways	State Arterials				Class I		
				Class I	Class II	Bicycle	Pedestrian			
ROADWAY CHARACTERISTICS										
Area type (urban, rural)	urban	urban								
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (d, twlt, n, nr, r)				d	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	3	3	5	5	2	2	1.9	1.8	2	2
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	0.95	0.95	0.95	0.95	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	2,400	1,700	2,200	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Speed Adjustment Factor (SAF)	0.975	0.975		0.975						
Capacity Adjustment Factor (CAF)	0.968	0.968		0.968						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (a, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, t, u)									t	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n
LEVEL OF SERVICE THRESHOLDS										
Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus		
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.		
		%ffs	Density						ats	ats
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6		
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4		
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3		
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2		

% ffs = Percent free flow speed ats = Average travel speed

APPENDIX C

TRAFFIC COUNT DATA SHEETS



PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION



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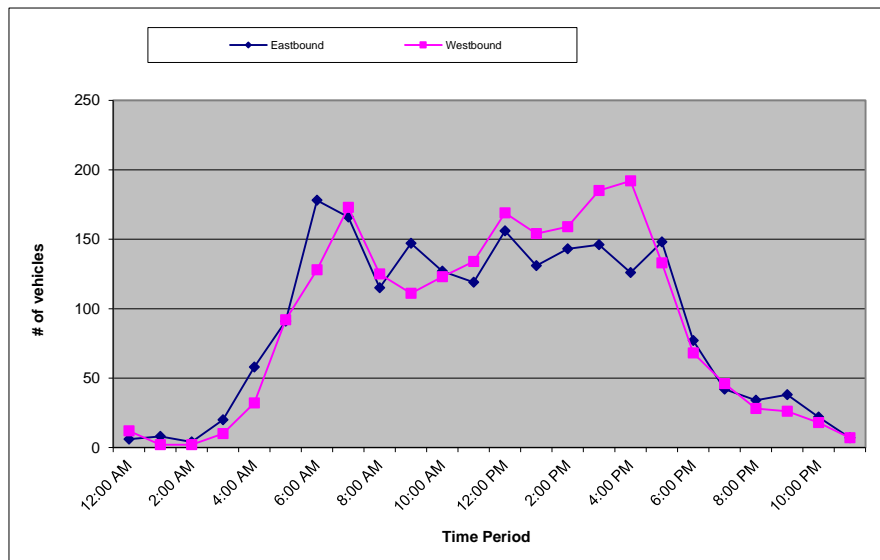
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET American Ave **LATITUDE** 36.6635987
SEGMENT SR-99 to Golden State Blvd **LONGITUDE** -119.7204444
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	3	3	0	6	1	4	6	1	12	18
1:00 AM	1	1	1	5	8	2	0	0	0	2	10
2:00 AM	2	1	0	1	4	0	2	0	0	2	6
3:00 AM	2	1	7	10	20	2	6	1	1	10	30
4:00 AM	10	18	14	16	58	8	8	2	14	32	90
5:00 AM	15	11	23	42	91	8	16	27	41	92	183
6:00 AM	51	36	38	53	178	30	13	35	50	128	306
7:00 AM	37	36	35	58	166	31	42	47	53	173	339
8:00 AM	32	32	22	29	115	44	25	33	23	125	240
9:00 AM	45	37	32	33	147	24	30	25	32	111	258
10:00 AM	31	21	30	45	127	28	35	31	29	123	250
11:00 AM	20	29	33	37	119	30	31	34	39	134	253
12:00 PM	39	33	52	32	156	43	37	44	45	169	325
1:00 PM	28	32	34	37	131	40	34	45	35	154	285
2:00 PM	50	32	29	32	143	42	43	51	23	159	302
3:00 PM	34	30	39	43	146	38	37	54	56	185	331
4:00 PM	31	26	41	28	126	58	33	58	43	192	318
5:00 PM	51	38	28	31	148	58	28	28	19	133	281
6:00 PM	23	20	18	16	77	22	19	10	17	68	145
7:00 PM	13	4	9	16	42	13	11	14	8	46	88
8:00 PM	11	7	7	9	34	6	10	6	6	28	62
9:00 PM	11	8	7	12	38	4	8	12	2	26	64
10:00 PM	15	3	2	2	22	6	0	6	6	18	40
11:00 PM	1	3	1	2	7	0	2	2	3	7	14
Total	49.8%				2109	50.2%				2129	4238

AM% 46.8% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 53.2% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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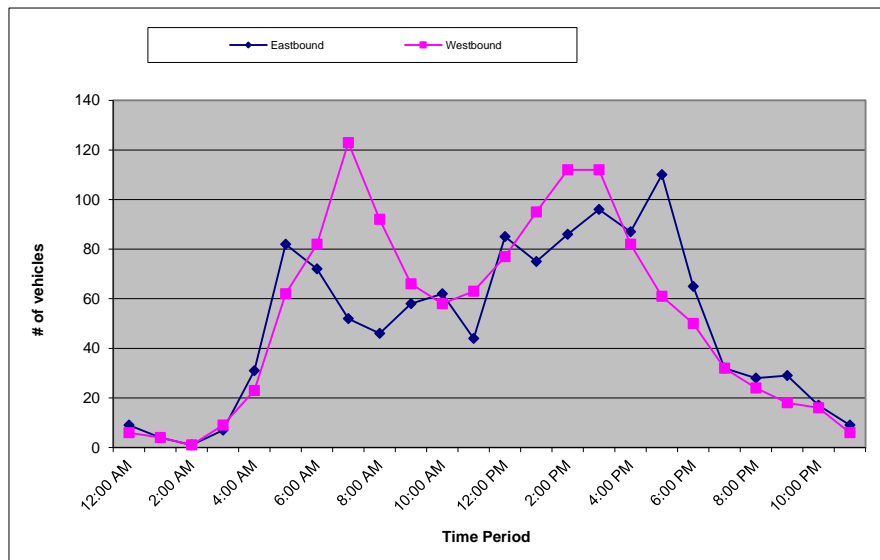
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET American Ave **LATITUDE** 36.6636271
SEGMENT Golden State Blvd to Clovis Ave **LONGITUDE** -119.7163916
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	1	7	0	9	0	2	3	1	6	15
1:00 AM	1	2	0	1	4	2	0	1	1	4	8
2:00 AM	1	0	0	0	1	0	0	0	1	1	2
3:00 AM	0	1	1	5	7	0	1	4	4	9	16
4:00 AM	3	9	9	10	31	3	4	1	15	23	54
5:00 AM	7	14	26	35	82	7	11	21	23	62	144
6:00 AM	26	14	15	17	72	12	15	21	34	82	154
7:00 AM	12	11	15	14	52	22	28	37	36	123	175
8:00 AM	12	13	7	14	46	34	17	18	23	92	138
9:00 AM	16	20	14	8	58	13	19	22	12	66	124
10:00 AM	19	9	17	17	62	8	20	15	15	58	120
11:00 AM	11	12	12	9	44	12	27	13	11	63	107
12:00 PM	12	23	29	21	85	16	15	20	26	77	162
1:00 PM	13	19	21	22	75	17	23	32	23	95	170
2:00 PM	32	17	20	17	86	26	37	26	23	112	198
3:00 PM	26	13	34	23	96	31	24	29	28	112	208
4:00 PM	24	20	22	21	87	19	18	26	19	82	169
5:00 PM	32	27	25	26	110	18	15	16	12	61	171
6:00 PM	15	22	13	15	65	19	14	9	8	50	115
7:00 PM	15	3	4	10	32	9	6	10	7	32	64
8:00 PM	9	9	6	4	28	6	7	6	5	24	52
9:00 PM	8	6	6	9	29	5	6	6	1	18	47
10:00 PM	10	2	3	2	17	2	1	5	8	16	33
11:00 PM	2	2	2	3	9	0	3	2	1	6	15
Total	48.2%				1187	51.8%				1274	
2461											

AM% 43.0% **AM Peak** 187 7:15 am to 8:15 am **AM P.H.F.** 0.90
PM% 57.0% **PM Peak** 208 3:00 pm to 4:00 pm **PM P.H.F.** 0.83





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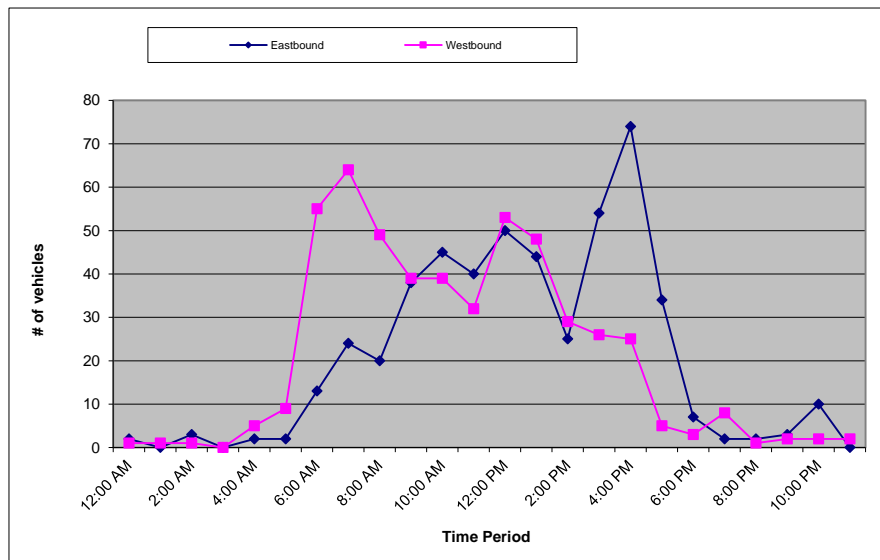
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Lincoln Ave **LATITUDE** 36.649041
SEGMENT SR-99 to Golden State Blvd **LONGITUDE** -119.7037005
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	1	0	0	2	0	1	0	0	1	3
1:00 AM	0	0	0	0	0	0	0	0	1	1	1
2:00 AM	0	3	0	0	3	1	0	0	0	1	4
3:00 AM	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	2	2	0	1	2	2	5	7
5:00 AM	1	1	0	0	2	0	0	2	7	9	11
6:00 AM	4	1	2	6	13	7	3	11	34	55	68
7:00 AM	3	8	3	10	24	9	15	14	26	64	88
8:00 AM	10	4	3	3	20	18	10	12	9	49	69
9:00 AM	9	10	9	10	38	12	4	16	7	39	77
10:00 AM	12	11	11	11	45	13	6	13	7	39	84
11:00 AM	11	8	9	12	40	4	5	11	12	32	72
12:00 PM	19	13	4	14	50	18	15	10	10	53	103
1:00 PM	24	6	7	7	44	6	13	19	10	48	92
2:00 PM	7	4	8	6	25	9	6	9	5	29	54
3:00 PM	7	7	18	22	54	5	13	2	6	26	80
4:00 PM	22	12	27	13	74	12	3	8	2	25	99
5:00 PM	19	8	4	3	34	1	1	0	3	5	39
6:00 PM	3	3	1	0	7	2	1	0	0	3	10
7:00 PM	2	0	0	0	2	0	2	0	6	8	10
8:00 PM	1	1	0	0	2	0	0	1	0	1	3
9:00 PM	0	0	2	1	3	1	0	0	1	2	5
10:00 PM	3	2	3	2	10	2	0	0	0	2	12
11:00 PM	0	0	0	0	0	0	0	2	0	2	2
Total	49.7%				494	50.3%				499	993

AM% 48.7% **AM Peak** 104 7:15 am to 8:15 am **AM P.H.F.** 0.72
PM% 51.3% **PM Peak** 103 12:00 pm to 1:00 pm **PM P.H.F.** 0.70





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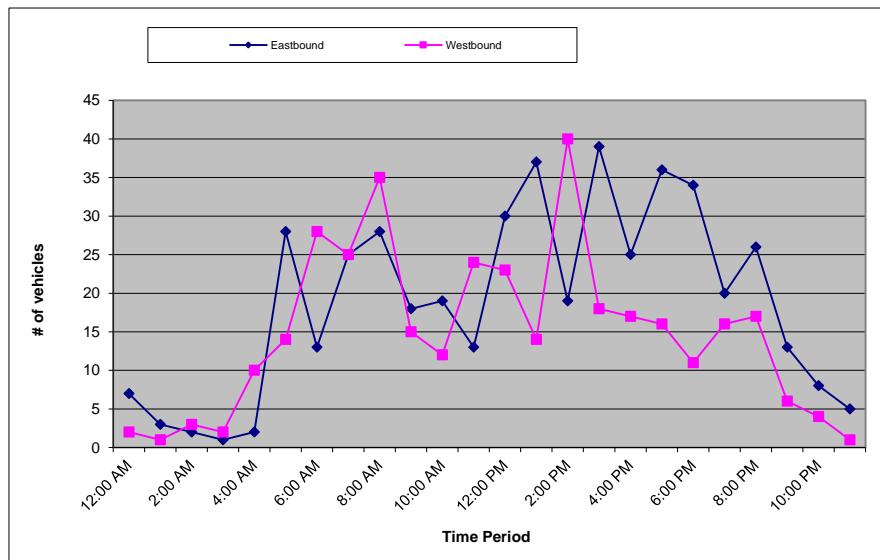
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Lincoln Ave **LATITUDE** 36.6490815
SEGMENT Clovis Ave to Fowler Ave. **LONGITUDE** -119.6841735
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	2	4	0	7	0	2	0	0	2	9
1:00 AM	1	0	2	0	3	0	0	1	0	1	4
2:00 AM	1	0	0	1	2	2	0	0	1	3	5
3:00 AM	0	1	0	0	1	0	1	1	0	2	3
4:00 AM	1	1	0	0	2	0	3	3	4	10	12
5:00 AM	3	4	10	11	28	5	5	1	3	14	42
6:00 AM	6	3	2	2	13	4	4	10	10	28	41
7:00 AM	7	7	4	7	25	5	8	4	8	25	50
8:00 AM	6	11	6	5	28	8	13	8	6	35	63
9:00 AM	4	6	2	6	18	2	6	4	3	15	33
10:00 AM	1	5	8	5	19	2	4	5	1	12	31
11:00 AM	1	7	3	2	13	9	4	7	4	24	37
12:00 PM	12	8	5	5	30	10	1	8	4	23	53
1:00 PM	6	7	15	9	37	3	5	1	5	14	51
2:00 PM	4	2	3	10	19	7	8	19	6	40	59
3:00 PM	7	8	2	22	39	3	7	4	4	18	57
4:00 PM	5	10	5	5	25	2	6	6	3	17	42
5:00 PM	16	5	6	9	36	5	1	4	6	16	52
6:00 PM	8	9	9	8	34	1	4	4	2	11	45
7:00 PM	7	3	3	7	20	1	4	7	4	16	36
8:00 PM	5	8	4	9	26	2	6	3	6	17	43
9:00 PM	3	6	2	2	13	3	2	1	0	6	19
10:00 PM	3	1	2	2	8	2	0	1	1	4	12
11:00 PM	1	4	0	0	5	0	0	1	0	1	6
Total	56.0%				451	44.0%				354	805

AM% 41.0% **AM Peak** 67 7:45 am to 8:45 am **AM P.H.F.** 0.70
PM% 59.0% **PM Peak** 63 2:30 pm to 3:30 pm **PM P.H.F.** 0.72





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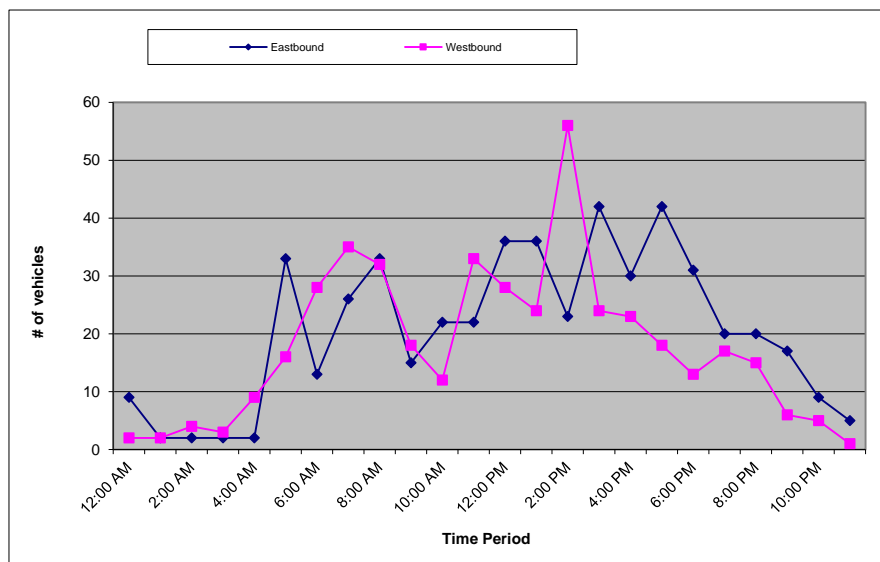
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Lincoln Ave **LATITUDE** 36.6490558
SEGMENT Fowler Ave to Armstrong Ave **LONGITUDE** -119.6801368
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	2	2	4	9	0	2	0	0	2	11
1:00 AM	1	1	0	0	2	1	0	1	0	2	4
2:00 AM	1	0	0	1	2	2	0	0	2	4	6
3:00 AM	0	2	0	0	2	0	1	2	0	3	5
4:00 AM	1	1	0	0	2	0	3	3	3	9	11
5:00 AM	3	4	12	14	33	5	6	1	4	16	49
6:00 AM	6	3	3	1	13	5	4	9	10	28	41
7:00 AM	5	8	5	8	26	9	8	10	8	35	61
8:00 AM	10	8	9	6	33	9	13	4	6	32	65
9:00 AM	2	5	5	3	15	2	6	5	5	18	33
10:00 AM	2	7	10	3	22	4	1	5	2	12	34
11:00 AM	4	7	6	5	22	11	8	9	5	33	55
12:00 PM	14	6	6	10	36	12	2	8	6	28	64
1:00 PM	6	9	10	11	36	5	7	6	6	24	60
2:00 PM	3	3	7	10	23	8	12	22	14	56	79
3:00 PM	9	9	5	19	42	4	9	6	5	24	66
4:00 PM	5	14	6	5	30	3	8	6	6	23	53
5:00 PM	17	4	10	11	42	6	1	4	7	18	60
6:00 PM	7	7	9	8	31	2	5	4	2	13	44
7:00 PM	8	3	2	7	20	4	3	7	3	17	37
8:00 PM	4	5	3	8	20	2	3	6	4	15	35
9:00 PM	3	8	2	4	17	4	1	1	0	6	23
10:00 PM	4	1	2	2	9	2	0	1	2	5	14
11:00 PM	1	3	1	0	5	0	0	1	0	1	6
Total	53.7%				492	46.3%				424	916

AM% 40.9% **AM Peak** 71 **7:30 am to 8:30 am** **AM P.H.F.** 0.85
PM% 59.1% **PM Peak** 84 **2:30 pm to 3:30 pm** **PM P.H.F.** 0.72





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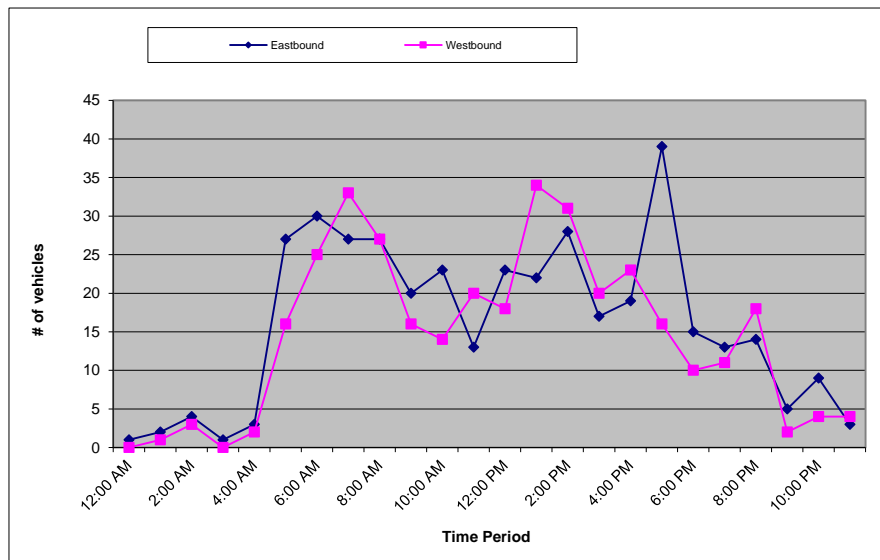
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Lincoln Ave **LATITUDE** 36.6490392
SEGMENT Armstrong Ave to Temperance Ave **LONGITUDE** -119.6723564
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	0	1	0	1	0	0	0	0	0	1
1:00 AM	0	0	2	0	2	0	1	0	0	1	3
2:00 AM	1	1	0	2	4	1	2	0	0	3	7
3:00 AM	0	0	0	1	1	0	0	0	0	0	1
4:00 AM	2	1	0	0	3	0	0	1	1	2	5
5:00 AM	3	8	8	8	27	5	2	6	3	16	43
6:00 AM	6	5	7	12	30	4	6	10	5	25	55
7:00 AM	7	8	10	2	27	6	7	15	5	33	60
8:00 AM	9	8	9	1	27	7	12	3	5	27	54
9:00 AM	4	8	5	3	20	2	3	5	6	16	36
10:00 AM	6	10	4	3	23	3	2	6	3	14	37
11:00 AM	2	4	7	0	13	6	5	3	6	20	33
12:00 PM	4	6	8	5	23	2	5	6	5	18	41
1:00 PM	9	4	4	5	22	8	2	10	14	34	56
2:00 PM	7	2	5	14	28	9	3	13	6	31	59
3:00 PM	4	3	7	3	17	6	6	3	5	20	37
4:00 PM	7	4	7	1	19	5	9	4	5	23	42
5:00 PM	16	7	8	8	39	0	2	5	9	16	55
6:00 PM	9	1	3	2	15	6	2	2	0	10	25
7:00 PM	3	3	3	4	13	1	4	2	4	11	24
8:00 PM	2	6	0	6	14	4	8	0	6	18	32
9:00 PM	2	0	0	3	5	1	0	0	1	2	7
10:00 PM	2	1	4	2	9	1	1	2	0	4	13
11:00 PM	0	2	1	0	3	1	2	1	0	4	7
Total	52.5%				385	47.5%				348	733

AM% 45.7% **AM Peak 70** 6:45 am to 7:45 am **AM P.H.F.** 0.70
PM% 54.3% **PM Peak 59** 2:00 pm to 3:00 pm **PM P.H.F.** 0.74





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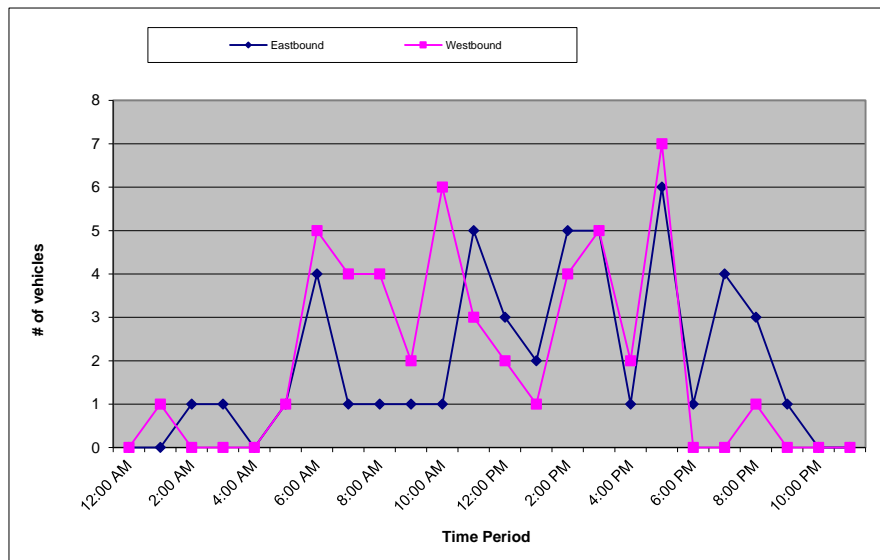
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clayton Ave **LATITUDE** 36.6417104
SEGMENT Golden State Blvd to Fowler Ave **LONGITUDE** -119.6841949
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	1	0	1	1	
2:00 AM	1	0	0	0	1	0	0	0	0	0	1	
3:00 AM	0	0	1	0	1	0	0	0	0	0	1	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	1	1	1	0	0	0	1	2	
6:00 AM	1	2	1	0	4	0	0	1	4	5	9	
7:00 AM	1	0	0	0	1	2	0	2	0	4	5	
8:00 AM	0	0	1	0	1	1	1	2	0	4	5	
9:00 AM	1	0	0	0	1	0	2	0	0	2	3	
10:00 AM	0	0	0	1	1	2	0	1	3	6	7	
11:00 AM	0	2	1	2	5	1	1	1	0	3	8	
12:00 PM	1	1	0	1	3	0	1	1	0	2	5	
1:00 PM	0	1	0	1	2	0	0	1	0	1	3	
2:00 PM	1	1	1	2	5	0	2	1	1	4	9	
3:00 PM	3	0	1	1	5	2	2	1	0	5	10	
4:00 PM	1	0	0	0	1	2	0	0	0	2	3	
5:00 PM	2	2	0	2	6	1	3	0	3	7	13	
6:00 PM	1	0	0	0	1	0	0	0	0	0	1	
7:00 PM	1	0	3	0	4	0	0	0	0	0	4	
8:00 PM	0	1	1	1	3	0	0	1	0	1	4	
9:00 PM	1	0	0	0	1	0	0	0	0	0	1	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	
Total	49.5%					47	50.5%					48
95												

AM% 44.2% **AM Peak 11** **6:15 am to 7:15 am** **AM P.H.F.** 0.69
PM% 55.8% **PM Peak 13** **5:00 pm to 6:00 pm** **PM P.H.F.** 0.65





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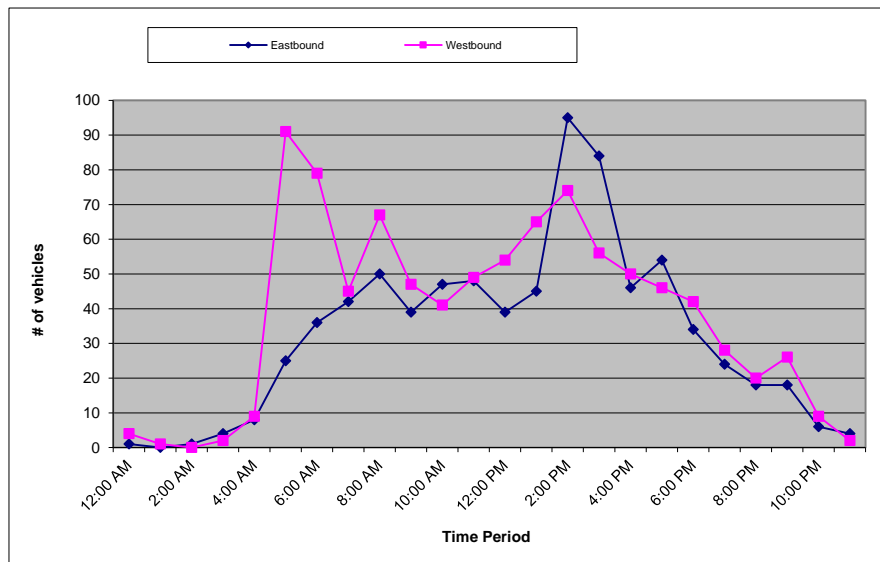
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6343969
SEGMENT W of Clovis Ave **LONGITUDE** -119.7019136
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	1	0	0	1	1	0	0	3	4	5
1:00 AM	0	0	0	0	0	0	1	0	0	1	1
2:00 AM	0	0	1	0	1	0	0	0	0	0	1
3:00 AM	0	0	1	3	4	0	0	2	0	2	6
4:00 AM	0	3	3	2	8	1	2	1	5	9	17
5:00 AM	5	2	8	10	25	1	13	36	41	91	116
6:00 AM	8	12	7	9	36	18	22	17	22	79	115
7:00 AM	10	6	13	13	42	11	12	7	15	45	87
8:00 AM	16	19	8	7	50	16	16	20	15	67	117
9:00 AM	7	6	15	11	39	10	13	13	11	47	86
10:00 AM	10	14	11	12	47	14	7	15	5	41	88
11:00 AM	14	4	13	17	48	10	16	12	11	49	97
12:00 PM	12	7	8	12	39	11	20	13	10	54	93
1:00 PM	9	13	6	17	45	14	14	18	19	65	110
2:00 PM	12	11	52	20	95	22	18	10	24	74	169
3:00 PM	37	18	12	17	84	8	11	15	22	56	140
4:00 PM	15	7	13	11	46	9	14	15	12	50	96
5:00 PM	19	14	12	9	54	16	7	12	11	46	100
6:00 PM	8	7	10	9	34	13	7	13	9	42	76
7:00 PM	7	9	6	2	24	3	5	10	10	28	52
8:00 PM	4	6	6	2	18	5	4	6	5	20	38
9:00 PM	8	6	4	0	18	8	10	5	3	26	44
10:00 PM	3	0	3	0	6	5	0	4	0	9	15
11:00 PM	0	3	0	1	4	0	1	0	1	2	6
Total	45.9%				768	54.1%				907	
1675											

AM% 43.9% **AM Peak** 123 **7:45 am to 8:45 am** **AM P.H.F.** 0.88
PM% 56.1% **PM Peak** 180 **2:30 pm to 3:30 pm** **PM P.H.F.** 0.73





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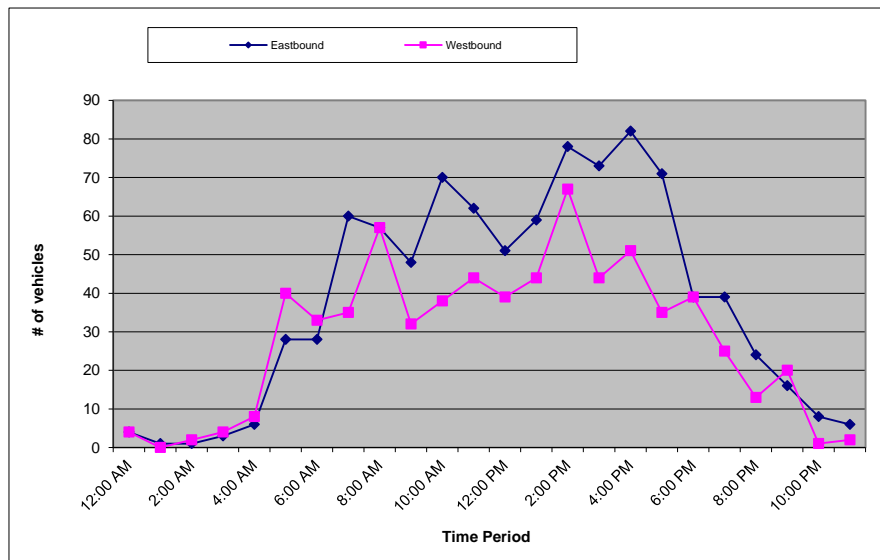
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344224
SEGMENT Clovis Ave to SR-99 **LONGITUDE** -119.6958949
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	1	0	1	4	0	1	0	3	4	8
1:00 AM	0	0	1	0	1	0	0	0	0	0	1
2:00 AM	0	0	0	1	1	0	0	2	0	2	3
3:00 AM	0	0	0	3	3	0	0	1	3	4	7
4:00 AM	1	1	0	4	6	0	2	2	4	8	14
5:00 AM	7	5	6	10	28	1	8	21	10	40	68
6:00 AM	4	6	7	11	28	8	9	6	10	33	61
7:00 AM	4	16	16	24	60	11	6	8	10	35	95
8:00 AM	17	23	11	6	57	13	19	14	11	57	114
9:00 AM	16	3	14	15	48	8	6	11	7	32	80
10:00 AM	12	25	18	15	70	8	9	12	9	38	108
11:00 AM	13	7	15	27	62	5	18	9	12	44	106
12:00 PM	10	12	11	18	51	6	12	10	11	39	90
1:00 PM	11	16	10	22	59	10	10	12	12	44	103
2:00 PM	17	18	27	16	78	13	15	17	22	67	145
3:00 PM	18	21	17	17	73	10	13	5	16	44	117
4:00 PM	20	27	18	17	82	9	16	18	8	51	133
5:00 PM	14	21	22	14	71	13	8	8	6	35	106
6:00 PM	12	12	3	12	39	9	6	10	14	39	78
7:00 PM	8	16	7	8	39	2	6	8	9	25	64
8:00 PM	4	8	5	7	24	3	5	2	3	13	37
9:00 PM	6	4	5	1	16	7	6	4	3	20	36
10:00 PM	3	2	2	1	8	1	0	0	0	1	9
11:00 PM	2	1	1	2	6	0	2	0	0	2	8
Total	57.4%				914	42.6%				677	1591

AM% 41.8% **AM Peak** 131 **7:45 am to 8:45 am** **AM P.H.F.** 0.78
PM% 58.2% **PM Peak** 145 **2:00 pm to 3:00 pm** **PM P.H.F.** 0.82





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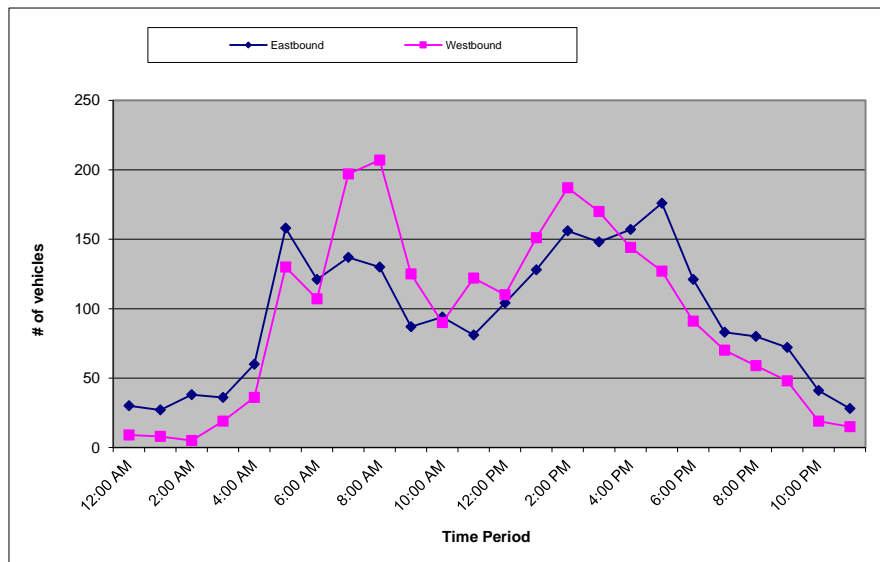
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344512
SEGMENT SR-99 to Golden State Blvd **LONGITUDE** -119.6892629
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	7	10	8	5	30	3	2	2	2	9	39
1:00 AM	8	5	6	8	27	3	2	1	2	8	35
2:00 AM	5	9	14	10	38	2	0	2	1	5	43
3:00 AM	10	7	8	11	36	4	4	9	2	19	55
4:00 AM	15	16	15	14	60	6	7	14	9	36	96
5:00 AM	25	43	49	41	158	26	34	39	31	130	288
6:00 AM	29	31	28	33	121	15	18	46	28	107	228
7:00 AM	30	26	26	55	137	48	40	57	52	197	334
8:00 AM	55	35	16	24	130	64	74	35	34	207	337
9:00 AM	25	32	19	11	87	33	35	29	28	125	212
10:00 AM	31	17	25	21	94	29	15	17	29	90	184
11:00 AM	19	21	24	17	81	15	29	35	43	122	203
12:00 PM	30	27	27	20	104	23	35	28	24	110	214
1:00 PM	30	34	28	36	128	27	37	33	54	151	279
2:00 PM	50	25	30	51	156	47	51	45	44	187	343
3:00 PM	44	45	28	31	148	36	45	47	42	170	318
4:00 PM	49	37	32	39	157	35	47	31	31	144	301
5:00 PM	54	50	35	37	176	28	32	39	28	127	303
6:00 PM	26	34	27	34	121	24	22	26	19	91	212
7:00 PM	18	19	27	19	83	20	20	12	18	70	153
8:00 PM	19	22	20	19	80	19	15	6	19	59	139
9:00 PM	21	18	18	15	72	19	5	9	15	48	120
10:00 PM	12	11	6	12	41	3	5	3	8	19	60
11:00 PM	6	5	9	8	28	5	3	4	3	15	43
Total	50.5%				2293	49.5%				2246	4539

AM% 45.3% **AM Peak** 418 **7:30 am to 8:30 am** **AM P.H.F.** 0.88
PM% 54.7% **PM Peak** 343 **2:00 pm to 3:00 pm** **PM P.H.F.** 0.88





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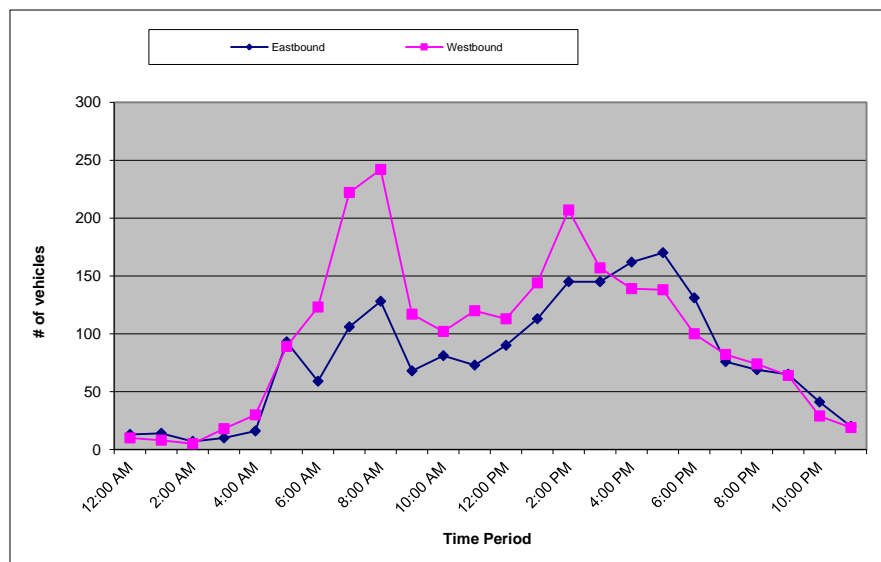
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344795
SEGMENT Golden State Blvd to 7th St **LONGITUDE** -119.6856023
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	5	4	0	13	4	3	2	1	10	23
1:00 AM	4	4	4	2	14	4	0	3	1	8	22
2:00 AM	1	2	3	1	7	1	1	2	1	5	12
3:00 AM	2	3	4	1	10	2	4	9	3	18	28
4:00 AM	2	4	6	4	16	3	6	10	11	30	46
5:00 AM	10	28	34	21	93	9	24	30	26	89	182
6:00 AM	13	15	15	16	59	19	23	49	32	123	182
7:00 AM	22	25	19	40	106	51	41	72	58	222	328
8:00 AM	58	34	17	19	128	82	91	38	31	242	370
9:00 AM	14	20	23	11	68	26	25	38	28	117	185
10:00 AM	24	18	20	19	81	25	16	20	41	102	183
11:00 AM	16	19	16	22	73	19	30	37	34	120	193
12:00 PM	31	22	24	13	90	22	25	34	32	113	203
1:00 PM	28	25	31	29	113	22	35	39	48	144	257
2:00 PM	38	40	30	37	145	59	61	39	48	207	352
3:00 PM	37	35	36	37	145	40	46	40	31	157	302
4:00 PM	49	41	33	39	162	32	43	34	30	139	301
5:00 PM	47	44	44	35	170	41	39	33	25	138	308
6:00 PM	38	38	22	33	131	24	21	31	24	100	231
7:00 PM	24	12	24	16	76	24	14	18	26	82	158
8:00 PM	22	20	13	14	69	26	18	12	18	74	143
9:00 PM	18	15	18	14	65	22	15	12	15	64	129
10:00 PM	14	13	7	7	41	9	8	7	5	29	70
11:00 PM	4	5	7	4	20	5	6	4	4	19	39
Total	44.6%				1895	55.4%				2352	
4247											

AM% 41.3% **AM Peak** 454 **7:30 am to 8:30 am** **AM P.H.F.** 0.81
PM% 58.7% **PM Peak** 352 **2:00 pm to 3:00 pm** **PM P.H.F.** 0.87





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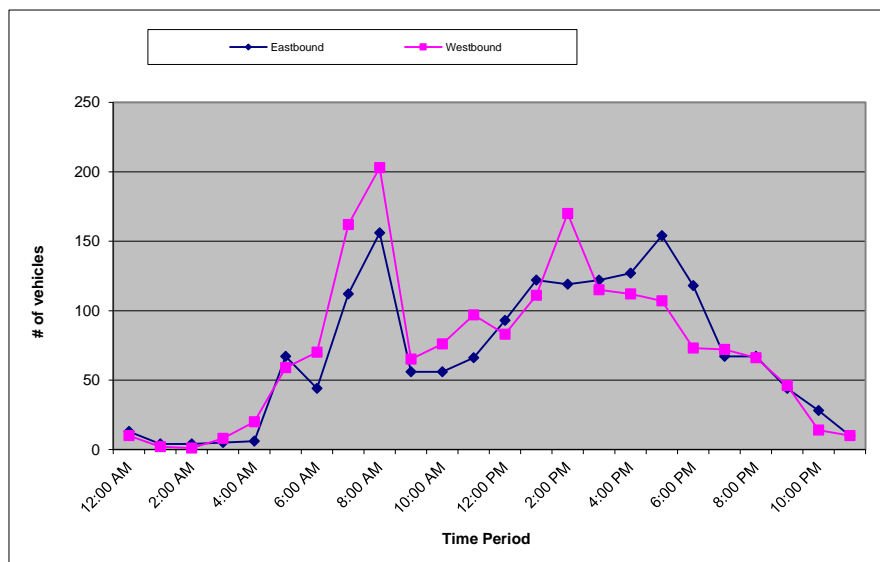
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344975
SEGMENT East of 5th St **LONGITUDE** -119.6808703
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	6	3	2	2	13	2	2	4	2	10	23
1:00 AM	2	1	0	1	4	2	0	0	0	2	6
2:00 AM	0	0	4	0	4	0	0	1	0	1	5
3:00 AM	0	3	1	1	5	1	2	4	1	8	13
4:00 AM	2	1	2	1	6	4	5	6	5	20	26
5:00 AM	9	18	24	16	67	6	15	19	19	59	126
6:00 AM	9	10	14	11	44	14	8	27	21	70	114
7:00 AM	17	24	27	44	112	37	26	54	45	162	274
8:00 AM	78	45	16	17	156	70	83	27	23	203	359
9:00 AM	9	19	21	7	56	15	14	18	18	65	121
10:00 AM	18	14	9	15	56	19	17	15	25	76	132
11:00 AM	21	12	18	15	66	16	24	28	29	97	163
12:00 PM	23	26	21	23	93	16	26	19	22	83	176
1:00 PM	27	25	32	38	122	17	35	30	29	111	233
2:00 PM	33	33	21	32	119	66	40	31	33	170	289
3:00 PM	29	26	29	38	122	19	36	34	26	115	237
4:00 PM	33	33	26	35	127	25	36	23	28	112	239
5:00 PM	44	43	31	36	154	35	27	24	21	107	261
6:00 PM	31	30	26	31	118	16	20	21	16	73	191
7:00 PM	23	12	15	17	67	19	12	15	26	72	139
8:00 PM	19	15	17	16	67	15	12	16	23	66	133
9:00 PM	14	12	12	6	44	17	10	6	13	46	90
10:00 PM	14	3	6	5	28	3	4	4	3	14	42
11:00 PM	3	2	4	1	10	3	3	1	3	10	20
Total	48.7%				1660	51.3%				1752	
3412											

AM% 39.9% **AM Peak** 446 **7:30 am to 8:30 am** **AM P.H.F.** 0.75
PM% 60.1% **PM Peak** 301 **1:30 pm to 2:30 pm** **PM P.H.F.** 0.76





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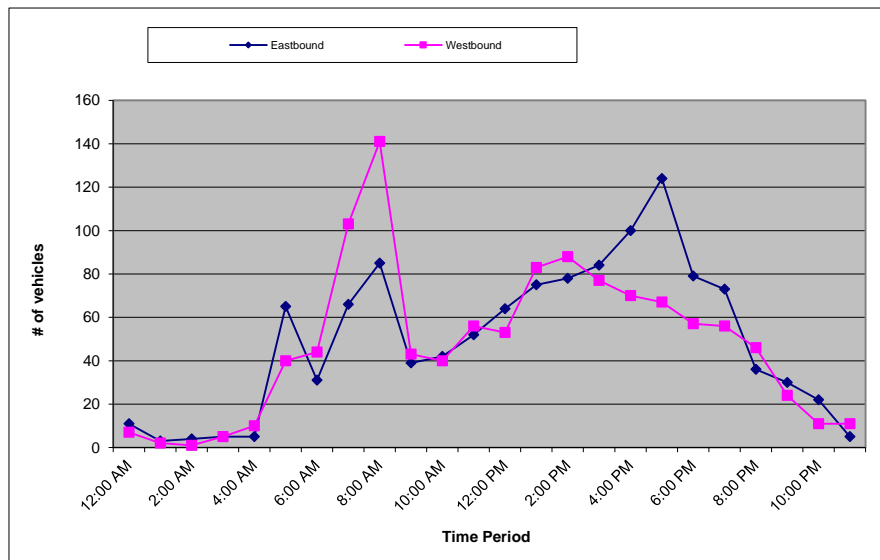
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344967
SEGMENT W of Armstrong **LONGITUDE** -119.6739722
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	5	2	2	2	11	1	2	4	0	7	18
1:00 AM	2	1	0	0	3	1	0	0	1	2	5
2:00 AM	1	0	3	0	4	0	0	0	1	1	5
3:00 AM	0	3	1	1	5	1	1	2	1	5	10
4:00 AM	2	0	2	1	5	3	3	2	2	10	15
5:00 AM	6	21	23	15	65	4	11	10	15	40	105
6:00 AM	5	7	9	10	31	8	10	8	18	44	75
7:00 AM	12	15	15	24	66	18	20	33	32	103	169
8:00 AM	41	29	9	6	85	70	42	15	14	141	226
9:00 AM	9	14	9	7	39	7	10	13	13	43	82
10:00 AM	12	5	13	12	42	13	10	7	10	40	82
11:00 AM	19	10	16	7	52	14	11	21	10	56	108
12:00 PM	15	21	11	17	64	6	16	13	18	53	117
1:00 PM	17	17	19	22	75	9	22	28	24	83	158
2:00 PM	16	20	20	22	78	26	22	20	20	88	166
3:00 PM	24	17	17	26	84	12	26	25	14	77	161
4:00 PM	25	27	18	30	100	16	21	22	11	70	170
5:00 PM	35	35	23	31	124	24	18	8	17	67	191
6:00 PM	19	23	12	25	79	10	14	19	14	57	136
7:00 PM	20	16	15	22	73	13	7	12	24	56	129
8:00 PM	10	7	9	10	36	12	9	8	17	46	82
9:00 PM	8	12	7	3	30	10	4	1	9	24	54
10:00 PM	12	4	2	4	22	3	4	2	2	11	33
11:00 PM	2	2	0	1	5	5	1	1	4	11	16
Total	50.9%				1178	49.1%				1135	2313

AM% 38.9% **AM Peak 286** **7:30 am to 8:30 am** **AM P.H.F. 0.64**
PM% 61.1% **PM Peak 193** **4:30 pm to 5:30 pm** **PM P.H.F. 0.82**





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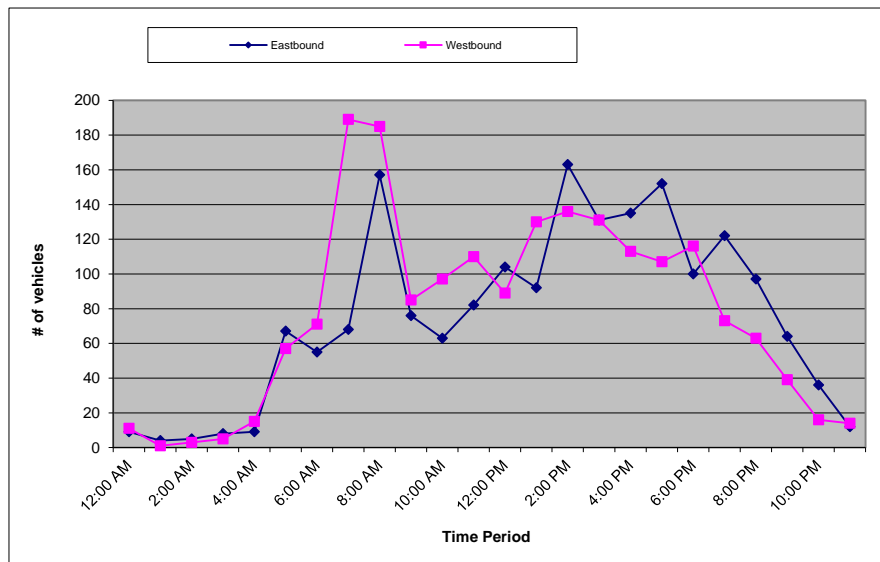
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6345062
SEGMENT Armstrong Ave to Temperance Ave **LONGITUDE** -119.6661069
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	2	3	1	9	3	3	4	1	11	20
1:00 AM	3	1	0	0	4	0	0	0	1	1	5
2:00 AM	2	0	2	1	5	1	0	0	2	3	8
3:00 AM	0	2	2	4	8	0	2	2	1	5	13
4:00 AM	3	1	2	3	9	4	4	3	4	15	24
5:00 AM	7	24	23	13	67	5	12	19	21	57	124
6:00 AM	12	11	18	14	55	13	11	15	32	71	126
7:00 AM	18	10	14	26	68	26	36	44	83	189	257
8:00 AM	64	61	18	14	157	85	56	21	23	185	342
9:00 AM	19	13	23	21	76	25	21	21	18	85	161
10:00 AM	13	13	20	17	63	23	25	26	23	97	160
11:00 AM	21	17	23	21	82	20	22	37	31	110	192
12:00 PM	27	28	25	24	104	24	21	22	22	89	193
1:00 PM	20	19	22	31	92	25	39	28	38	130	222
2:00 PM	68	36	31	28	163	40	35	32	29	136	299
3:00 PM	35	27	30	39	131	27	40	34	30	131	262
4:00 PM	35	38	28	34	135	29	30	30	24	113	248
5:00 PM	41	49	29	33	152	20	32	20	35	107	259
6:00 PM	24	27	24	25	100	24	24	28	40	116	216
7:00 PM	25	22	30	45	122	28	21	11	13	73	195
8:00 PM	25	18	17	37	97	16	15	21	11	63	160
9:00 PM	25	12	18	9	64	12	8	6	13	39	103
10:00 PM	18	11	2	5	36	3	3	5	5	16	52
11:00 PM	1	5	3	3	12	2	4	5	3	14	26
Total	49.4%				1811	50.6%				1856	3667

AM% 39.1% **AM Peak** 433 **7:30 am to 8:30 am** **AM P.H.F.** 0.73
PM% 60.9% **PM Peak** 311 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.72





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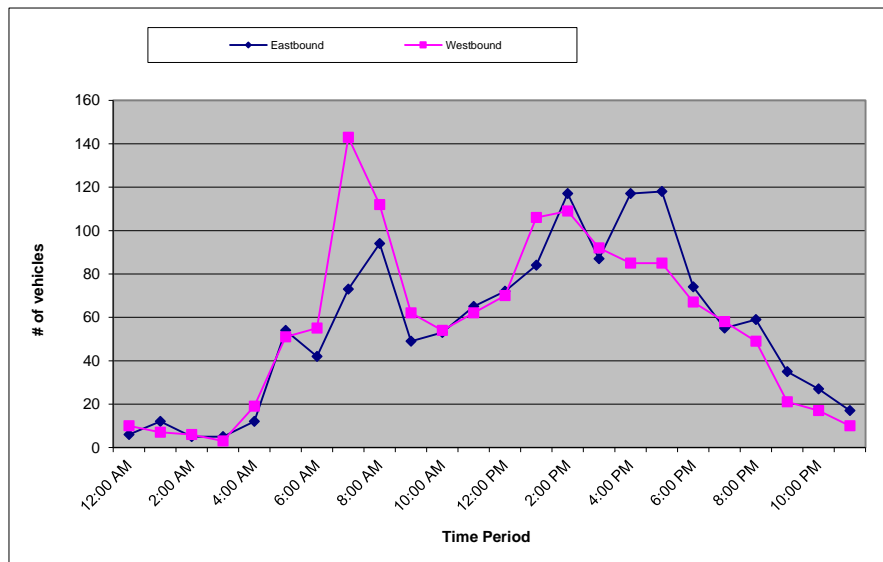
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Adams Ave **LATITUDE** 36.6344989
SEGMENT Temperance Ave to Locan Ave **LONGITUDE** -119.6624995
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	0	3	0	6	2	4	2	2	10	16
1:00 AM	2	4	4	2	12	1	2	1	3	7	19
2:00 AM	3	1	1	0	5	3	0	1	2	6	11
3:00 AM	2	1	2	0	5	0	0	3	0	3	8
4:00 AM	1	1	3	7	12	3	2	3	11	19	31
5:00 AM	3	13	20	18	54	6	16	16	13	51	105
6:00 AM	4	9	13	16	42	10	15	8	22	55	97
7:00 AM	13	22	18	20	73	27	31	31	54	143	216
8:00 AM	27	36	12	19	94	50	23	19	20	112	206
9:00 AM	12	13	10	14	49	18	13	15	16	62	111
10:00 AM	11	12	16	14	53	9	16	14	15	54	107
11:00 AM	17	9	20	19	65	13	16	14	19	62	127
12:00 PM	16	27	14	15	72	12	21	18	19	70	142
1:00 PM	15	20	26	23	84	19	34	29	24	106	190
2:00 PM	43	28	25	21	117	17	30	26	36	109	226
3:00 PM	18	26	16	27	87	26	27	19	20	92	179
4:00 PM	31	24	28	34	117	16	20	24	25	85	202
5:00 PM	30	39	28	21	118	20	23	18	24	85	203
6:00 PM	19	18	18	19	74	11	30	16	10	67	141
7:00 PM	14	13	16	12	55	12	13	11	22	58	113
8:00 PM	11	12	19	17	59	14	12	11	12	49	108
9:00 PM	16	7	7	5	35	6	6	7	2	21	56
10:00 PM	5	8	9	5	27	3	7	4	3	17	44
11:00 PM	6	3	4	4	17	3	4	2	1	10	27
Total	49.6%				1332	50.4%				1353	2685

AM% 39.3% **AM Peak** 259 **7:30 am to 8:30 am** **AM P.H.F.** 0.84
PM% 60.7% **PM Peak** 226 **2:00 pm to 3:00 pm** **PM P.H.F.** 0.94





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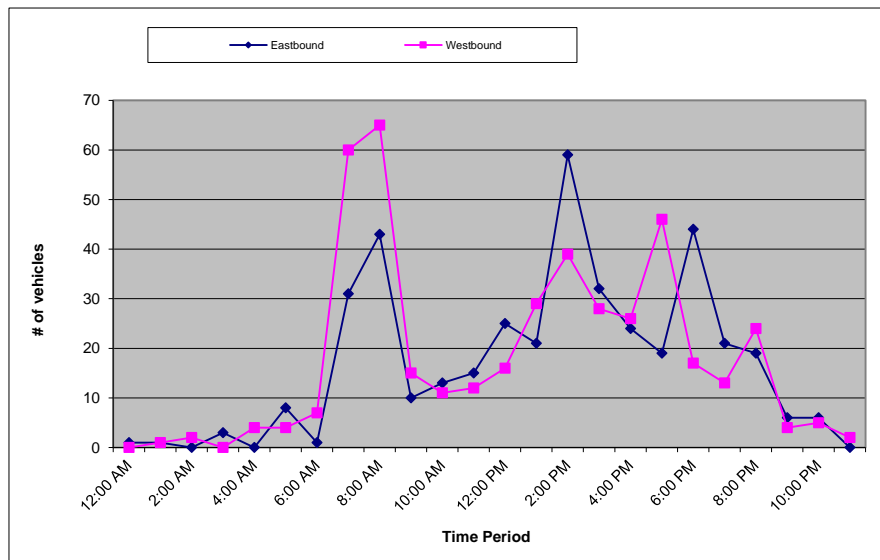
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Walter Ave **LATITUDE** 36.630854
SEGMENT W of Temperance **LONGITUDE** -119.6662321
COLLECTION DATE Thursday, May 13, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	1	0	1	0	0	0	0	0	1	
1:00 AM	0	1	0	0	1	1	0	0	0	1	2	
2:00 AM	0	0	0	0	0	0	0	1	1	2	2	
3:00 AM	0	1	1	1	3	0	0	0	0	0	3	
4:00 AM	0	0	0	0	0	1	1	1	1	4	4	
5:00 AM	1	4	0	3	8	1	2	1	0	4	12	
6:00 AM	0	1	0	0	1	2	1	1	3	7	8	
7:00 AM	2	3	10	16	31	6	8	15	31	60	91	
8:00 AM	24	13	3	3	43	48	10	4	3	65	108	
9:00 AM	3	4	0	3	10	2	5	5	3	15	25	
10:00 AM	4	2	5	2	13	4	5	0	2	11	24	
11:00 AM	4	4	4	3	15	2	1	5	4	12	27	
12:00 PM	8	7	5	5	25	6	2	6	2	16	41	
1:00 PM	4	4	5	8	21	6	6	5	12	29	50	
2:00 PM	42	2	6	9	59	17	8	5	9	39	98	
3:00 PM	7	3	13	9	32	8	7	6	7	28	60	
4:00 PM	5	4	7	8	24	7	4	7	8	26	50	
5:00 PM	4	2	7	6	19	10	11	12	13	46	65	
6:00 PM	6	10	4	24	44	8	3	3	3	17	61	
7:00 PM	10	7	3	1	21	4	4	4	1	13	34	
8:00 PM	9	4	3	3	19	5	11	4	4	24	43	
9:00 PM	1	2	2	1	6	0	2	1	1	4	10	
10:00 PM	3	1	2	0	6	2	1	2	0	5	11	
11:00 PM	0	0	0	0	0	0	1	0	1	2	2	
Total	48.3%					402	51.7%					430
832												

AM% 36.9% **AM Peak** 167 **7:30 am to 8:30 am** **AM P.H.F.** 0.58
PM% 63.1% **PM Peak** 100 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.42





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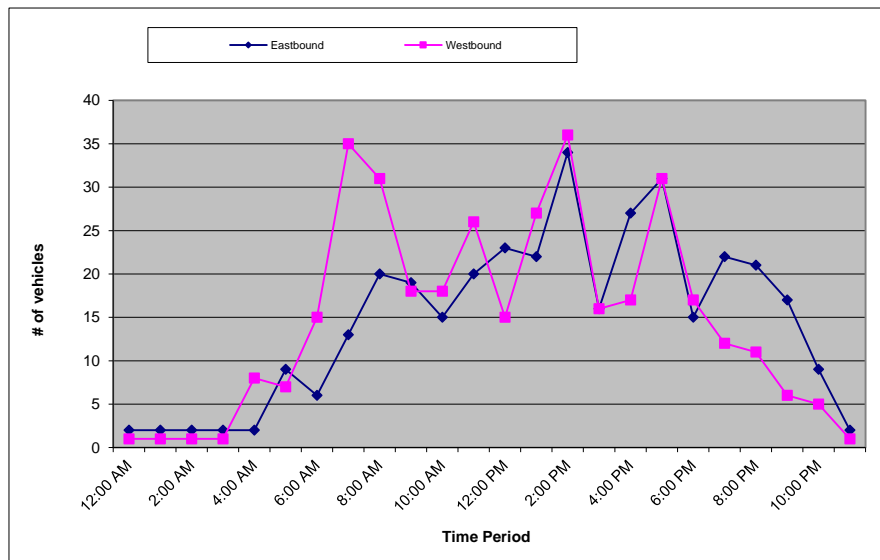
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Walter Ave **LATITUDE** 36.6308561
SEGMENT Temperance Ave to Locan Ave **LONGITUDE** -119.6635746
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	0	1	0	2	0	1	0	0	1	3
1:00 AM	0	1	1	0	2	1	0	0	0	1	3
2:00 AM	1	0	0	1	2	0	0	1	0	1	3
3:00 AM	2	0	0	0	2	1	0	0	0	1	3
4:00 AM	2	0	0	0	2	5	0	1	2	8	10
5:00 AM	0	0	5	4	9	1	2	2	2	7	16
6:00 AM	0	2	2	2	6	3	5	4	3	15	21
7:00 AM	3	4	3	3	13	6	3	7	19	35	48
8:00 AM	5	10	3	2	20	17	8	3	3	31	51
9:00 AM	6	6	3	4	19	5	4	6	3	18	37
10:00 AM	4	1	2	8	15	6	4	6	2	18	33
11:00 AM	5	7	4	4	20	6	5	8	7	26	46
12:00 PM	7	6	4	6	23	1	5	2	7	15	38
1:00 PM	3	4	5	10	22	2	4	9	12	27	49
2:00 PM	18	5	5	6	34	7	6	15	8	36	70
3:00 PM	3	4	4	5	16	4	3	6	3	16	32
4:00 PM	1	8	11	7	27	3	5	4	5	17	44
5:00 PM	8	11	5	7	31	7	6	8	10	31	62
6:00 PM	5	6	2	2	15	10	2	5	0	17	32
7:00 PM	4	8	3	7	22	3	5	1	3	12	34
8:00 PM	1	10	5	5	21	3	3	3	2	11	32
9:00 PM	5	5	5	2	17	1	2	2	1	6	23
10:00 PM	2	3	3	1	9	0	2	1	2	5	14
11:00 PM	0	1	0	1	2	0	0	0	1	1	3
Total	49.6%				351	50.4%				356	707

AM% 38.8% **AM Peak** 72 **7:30 am to 8:30 am** **AM P.H.F.** 0.82
PM% 61.2% **PM Peak** 78 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.78





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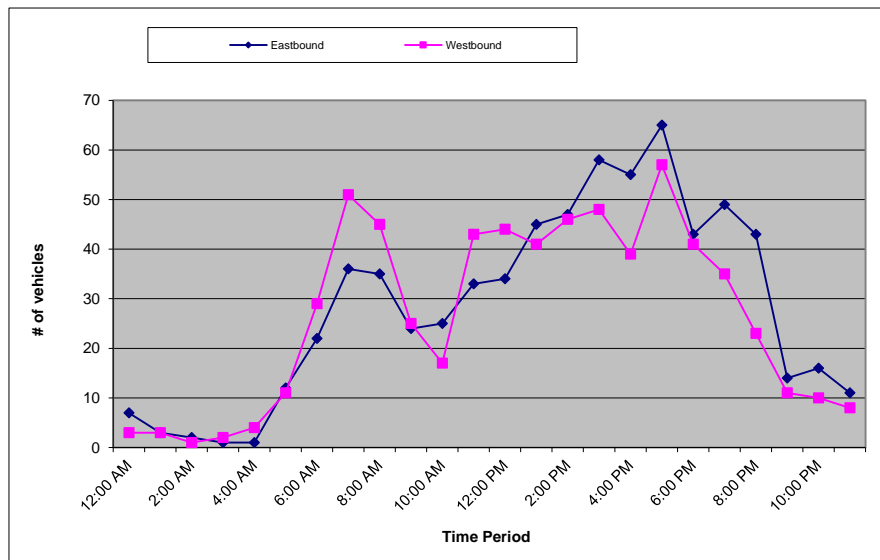
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Sumner Ave **LATITUDE** 36.6271794
SEGMENT Clovis Ave to Sunnyside Ave. **LONGITUDE** -119.6983686
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	1	0	4	2	7	1	1	0	1	3	10	
1:00 AM	2	0	1	0	3	1	1	1	0	3	6	
2:00 AM	0	2	0	0	2	0	0	0	1	1	3	
3:00 AM	0	0	0	1	1	0	1	1	0	2	3	
4:00 AM	0	1	0	0	1	0	0	2	2	4	5	
5:00 AM	2	1	2	7	12	2	2	2	5	11	23	
6:00 AM	7	2	8	5	22	5	5	9	10	29	51	
7:00 AM	9	7	8	12	36	7	14	22	8	51	87	
8:00 AM	11	6	12	6	35	13	17	7	8	45	80	
9:00 AM	3	7	7	7	24	5	4	9	7	25	49	
10:00 AM	4	8	7	6	25	6	4	5	2	17	42	
11:00 AM	13	7	8	5	33	13	8	13	9	43	76	
12:00 PM	13	6	9	6	34	5	10	18	11	44	78	
1:00 PM	12	10	9	14	45	6	10	15	10	41	86	
2:00 PM	9	12	10	16	47	6	12	13	15	46	93	
3:00 PM	17	12	15	14	58	11	13	11	13	48	106	
4:00 PM	17	11	11	16	55	5	10	11	13	39	94	
5:00 PM	9	12	22	22	65	12	22	15	8	57	122	
6:00 PM	14	11	6	12	43	16	10	9	6	41	84	
7:00 PM	12	11	14	12	49	8	9	6	12	35	84	
8:00 PM	11	10	10	12	43	8	4	6	5	23	66	
9:00 PM	3	4	3	4	14	5	3	2	1	11	25	
10:00 PM	4	3	5	4	16	1	2	5	2	10	26	
11:00 PM	4	1	5	1	11	3	1	2	2	8	19	
Total	51.7%					681	48.3%					637
1318												

AM% 33.0% **AM Peak** 97 **7:30 am to 8:30 am** **AM P.H.F.** 0.81
PM% 67.0% **PM Peak** 131 **5:15 pm to 6:15 pm** **PM P.H.F.** 0.89





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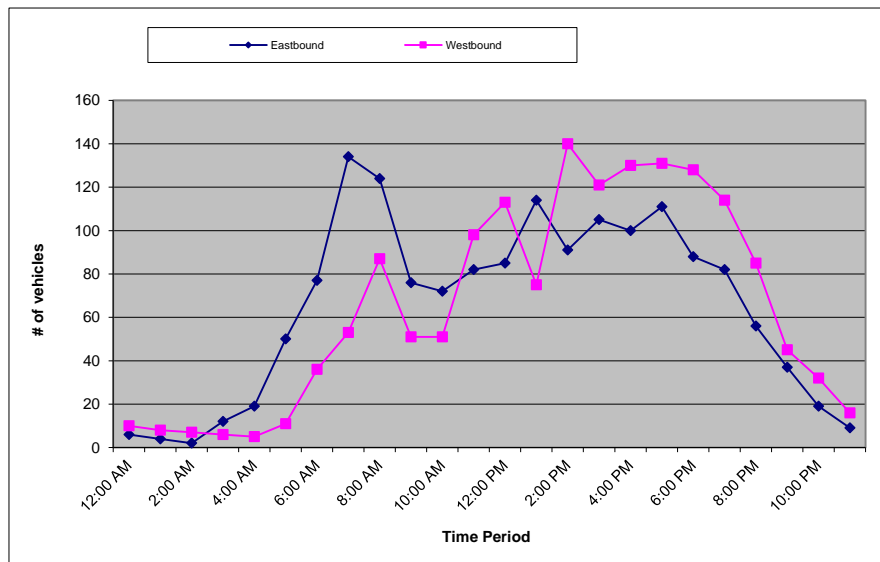
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Sumner Ave **LATITUDE** 36.6272202
SEGMENT Sunnyside Ave to Merced St **LONGITUDE** -119.6873751
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	1	4	1	6	3	1	4	2	10	16
1:00 AM	1	2	0	1	4	2	3	2	1	8	12
2:00 AM	0	2	0	0	2	2	2	1	2	7	9
3:00 AM	3	1	2	6	12	2	1	2	1	6	18
4:00 AM	1	4	9	5	19	0	1	3	1	5	24
5:00 AM	7	10	20	13	50	1	0	2	8	11	61
6:00 AM	19	14	24	20	77	12	9	7	8	36	113
7:00 AM	28	20	36	50	134	5	21	16	11	53	187
8:00 AM	60	27	19	18	124	26	40	10	11	87	211
9:00 AM	20	17	22	17	76	12	8	19	12	51	127
10:00 AM	16	15	15	26	72	20	10	12	9	51	123
11:00 AM	20	22	15	25	82	32	19	25	22	98	180
12:00 PM	22	17	28	18	85	23	30	37	23	113	198
1:00 PM	26	26	25	37	114	12	21	25	17	75	189
2:00 PM	25	18	25	23	91	38	42	30	30	140	231
3:00 PM	30	24	30	21	105	22	28	37	34	121	226
4:00 PM	26	28	20	26	100	30	22	40	38	130	230
5:00 PM	24	22	33	32	111	31	46	30	24	131	242
6:00 PM	26	28	14	20	88	32	36	32	28	128	216
7:00 PM	20	20	19	23	82	30	24	28	32	114	196
8:00 PM	12	15	16	13	56	22	24	19	20	85	141
9:00 PM	10	5	13	9	37	18	9	11	7	45	82
10:00 PM	8	3	5	3	19	9	8	9	6	32	51
11:00 PM	1	0	5	3	9	6	5	4	1	16	25
Total	50.0%				1555	50.0%				1553	3108

AM% 34.8% **AM Peak** 266 **7:30 am to 8:30 am** **AM P.H.F.** 0.77
PM% 65.2% **PM Peak** 250 **4:45 pm to 5:45 pm** **PM P.H.F.** 0.92





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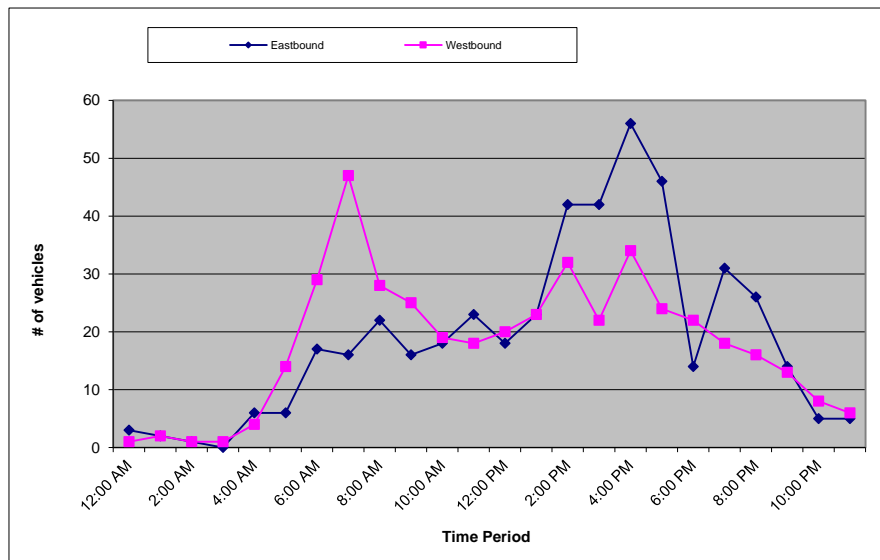
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET South Ave **LATITUDE** 36.61996
SEGMENT Clovis Ave to Sunnyside Ave. **LONGITUDE** -119.69816
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	0	0	0	3	0	0	1	0	1	4
1:00 AM	0	1	0	1	2	1	1	0	0	2	4
2:00 AM	0	1	0	0	1	0	0	0	1	1	2
3:00 AM	0	0	0	0	0	1	0	0	0	1	1
4:00 AM	0	1	2	3	6	0	1	1	2	4	10
5:00 AM	2	3	1	0	6	2	0	7	5	14	20
6:00 AM	5	6	2	4	17	9	6	7	7	29	46
7:00 AM	4	5	4	3	16	13	13	11	10	47	63
8:00 AM	7	4	8	3	22	7	4	9	8	28	50
9:00 AM	7	5	0	4	16	4	6	5	10	25	41
10:00 AM	5	3	7	3	18	6	3	5	5	19	37
11:00 AM	4	4	7	8	23	1	6	7	4	18	41
12:00 PM	4	3	5	6	18	6	2	7	5	20	38
1:00 PM	5	4	5	9	23	5	6	6	6	23	46
2:00 PM	5	12	15	10	42	10	9	7	6	32	74
3:00 PM	11	16	8	7	42	3	4	5	10	22	64
4:00 PM	12	7	11	26	56	9	4	12	9	34	90
5:00 PM	11	10	17	8	46	6	5	8	5	24	70
6:00 PM	5	3	5	1	14	5	3	8	6	22	36
7:00 PM	10	5	9	7	31	3	3	7	5	18	49
8:00 PM	8	11	1	6	26	7	3	4	2	16	42
9:00 PM	4	2	4	4	14	3	6	1	3	13	27
10:00 PM	3	0	1	1	5	2	3	2	1	8	13
11:00 PM	1	1	1	2	5	0	1	5	0	6	11
Total	51.4%				452	48.6%				427	879

AM% 36.3% **AM Peak** 63 **7:00 am to 8:00 am** **AM P.H.F.** 0.88
PM% 63.7% **PM Peak** 92 **4:45 pm to 5:45 pm** **PM P.H.F.** 0.66





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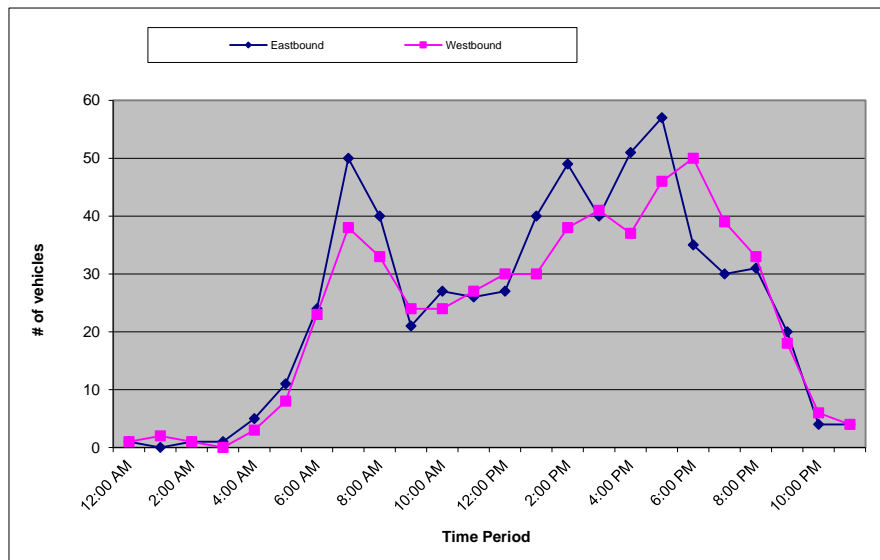
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET South Ave **LATITUDE** 36.6199811
SEGMENT Sunnyside Ave to Stanford Ave. **LONGITUDE** -119.6889544
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	0	0	0	1	0	0	0	1	1	2
1:00 AM	0	0	0	0	0	1	1	0	0	2	2
2:00 AM	0	0	0	1	1	0	0	0	1	1	2
3:00 AM	0	0	1	0	1	0	0	0	0	0	1
4:00 AM	0	0	1	4	5	0	0	1	2	3	8
5:00 AM	2	4	2	3	11	1	0	4	3	8	19
6:00 AM	4	8	6	6	24	5	7	5	6	23	47
7:00 AM	6	12	11	21	50	9	12	12	5	38	88
8:00 AM	19	8	9	4	40	8	8	15	2	33	73
9:00 AM	7	3	3	8	21	8	1	5	10	24	45
10:00 AM	8	4	6	9	27	9	6	3	6	24	51
11:00 AM	7	6	6	7	26	4	7	11	5	27	53
12:00 PM	7	6	7	7	27	5	11	9	5	30	57
1:00 PM	10	6	7	17	40	7	6	9	8	30	70
2:00 PM	5	14	13	17	49	10	10	8	10	38	87
3:00 PM	12	13	9	6	40	9	11	12	9	41	81
4:00 PM	13	10	8	20	51	7	8	6	16	37	88
5:00 PM	13	13	16	15	57	8	14	15	9	46	103
6:00 PM	10	7	5	13	35	12	8	18	12	50	85
7:00 PM	5	10	9	6	30	8	9	16	6	39	69
8:00 PM	10	10	5	6	31	12	9	6	6	33	64
9:00 PM	5	6	5	4	20	4	7	2	5	18	38
10:00 PM	2	0	2	0	4	1	2	3	0	6	10
11:00 PM	2	1	1	0	4	1	0	3	0	4	8
Total	51.7%				595	48.3%				556	
1151											

AM% 34.0% **AM Peak** 100 **7:15 am to 8:15 am** **AM P.H.F.** 0.93
PM% 66.0% **PM Peak** 115 **4:45 pm to 5:45 pm** **PM P.H.F.** 0.80





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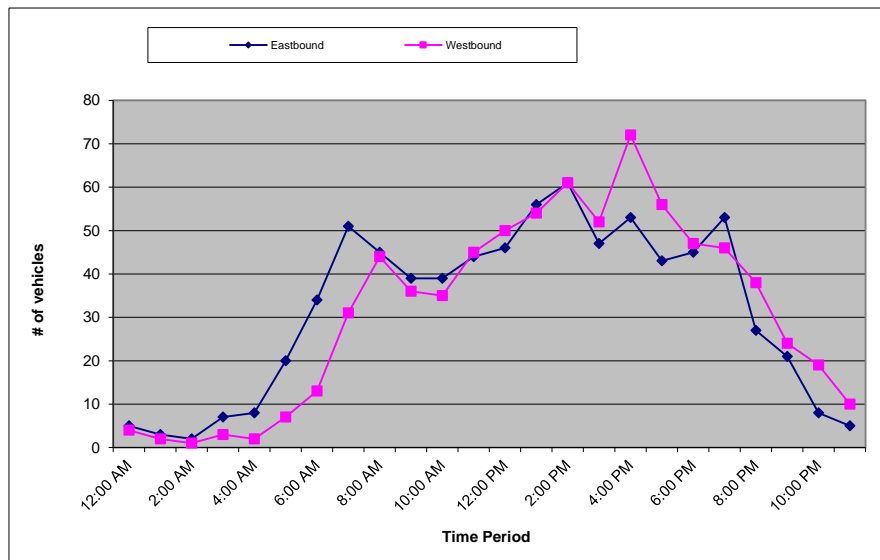
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET South Ave **LATITUDE** 36.619994
SEGMENT Stanford Ave to S. Fowler Ave. **LONGITUDE** -119.6841489
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	1	1	1	5	1	1	2	0	4	9
1:00 AM	2	1	0	0	3	0	1	0	1	2	5
2:00 AM	0	2	0	0	2	0	0	0	1	1	3
3:00 AM	1	0	3	3	7	0	1	1	1	3	10
4:00 AM	0	3	1	4	8	0	0	0	2	2	10
5:00 AM	2	6	6	6	20	1	1	1	4	7	27
6:00 AM	6	5	14	9	34	2	1	4	6	13	47
7:00 AM	7	8	15	21	51	9	3	12	7	31	82
8:00 AM	14	8	16	7	45	11	14	11	8	44	89
9:00 AM	12	4	13	10	39	6	12	9	9	36	75
10:00 AM	9	9	10	11	39	8	6	9	12	35	74
11:00 AM	13	6	15	10	44	15	4	20	6	45	89
12:00 PM	14	12	6	14	46	11	10	14	15	50	96
1:00 PM	16	14	10	16	56	11	16	13	14	54	110
2:00 PM	15	18	14	14	61	19	11	20	11	61	122
3:00 PM	7	12	10	18	47	12	5	15	20	52	99
4:00 PM	14	6	15	18	53	14	16	25	17	72	125
5:00 PM	14	13	5	11	43	18	13	13	12	56	99
6:00 PM	10	10	13	12	45	13	6	14	14	47	92
7:00 PM	20	12	14	7	53	9	10	11	16	46	99
8:00 PM	9	7	8	3	27	9	15	9	5	38	65
9:00 PM	2	7	5	7	21	6	5	9	4	24	45
10:00 PM	4	1	1	2	8	7	4	4	4	19	27
11:00 PM	1	0	1	3	5	3	5	2	0	10	15
Total	50.3%				762	49.7%				752	1514

AM% 34.3% **AM Peak** 102 **7:45 am to 8:45 am** **AM P.H.F.** 0.91
PM% 65.7% **PM Peak** 133 **4:30 pm to 5:30 pm** **PM P.H.F.** 0.83





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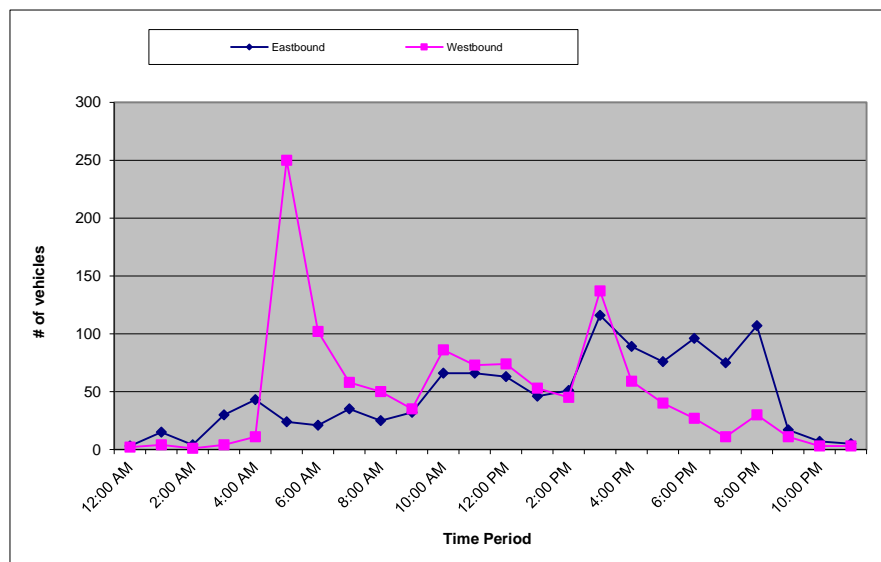
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET South Ave **LATITUDE** 36.6199406
SEGMENT W of Golden State Blvd **LONGITUDE** -119.6718176
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	0	2	1	3	0	0	1	1	2	5
1:00 AM	3	5	3	4	15	0	0	4	0	4	19
2:00 AM	1	1	1	1	4	1	0	0	0	1	5
3:00 AM	3	1	8	18	30	0	0	1	3	4	34
4:00 AM	13	16	10	4	43	0	0	3	8	11	54
5:00 AM	2	3	10	9	24	13	50	80	107	250	274
6:00 AM	2	5	8	6	21	33	15	25	29	102	123
7:00 AM	8	14	9	4	35	9	7	25	17	58	93
8:00 AM	6	0	12	7	25	15	12	8	15	50	75
9:00 AM	7	6	13	6	32	6	6	16	7	35	67
10:00 AM	9	30	11	16	66	8	24	24	30	86	152
11:00 AM	14	5	26	21	66	18	15	10	30	73	139
12:00 PM	25	10	20	8	63	19	22	21	12	74	137
1:00 PM	16	14	12	4	46	16	13	12	12	53	99
2:00 PM	15	13	14	9	51	14	14	7	10	45	96
3:00 PM	14	29	46	27	116	18	22	48	49	137	253
4:00 PM	17	20	27	25	89	20	23	11	5	59	148
5:00 PM	42	18	10	6	76	14	7	9	10	40	116
6:00 PM	21	18	18	39	96	5	5	7	10	27	123
7:00 PM	31	22	11	11	75	5	1	2	3	11	86
8:00 PM	18	56	28	5	107	3	7	10	10	30	137
9:00 PM	1	4	3	9	17	3	6	2	0	11	28
10:00 PM	3	0	1	3	7	0	0	1	2	3	10
11:00 PM	2	2	1	0	5	3	0	0	0	3	8
Total	48.8%				1112	51.2%				1169	2281

AM% 45.6% **AM Peak** 294 5:15 am to 6:15 am **AM P.H.F.** 0.63
PM% 54.4% **PM Peak** 258 3:15 pm to 4:15 pm **PM P.H.F.** 0.69





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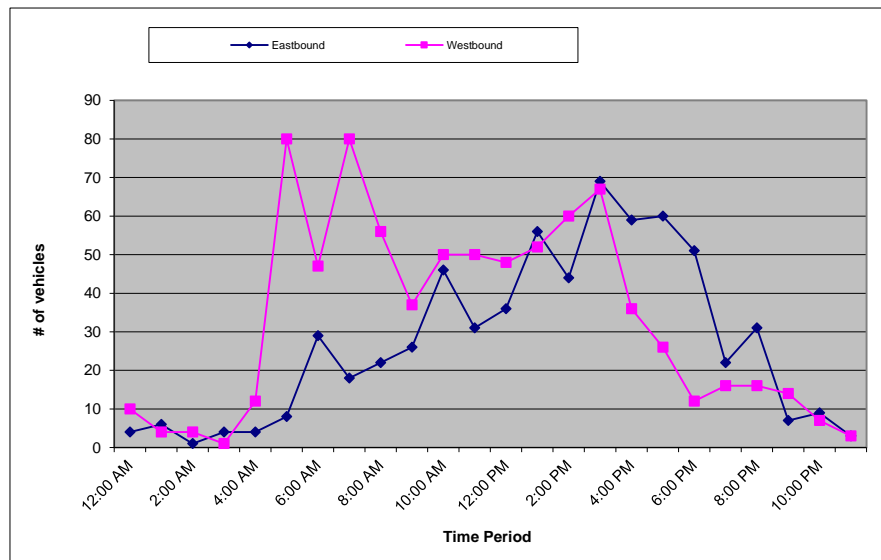
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET South Ave **LATITUDE** 36.6199224
SEGMENT Golden State Blvd to Harris Ave. **LONGITUDE** -119.6669562
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	1	2	1	4	5	4	0	1	10	14
1:00 AM	1	2	1	2	6	3	0	1	0	4	10
2:00 AM	1	0	0	0	1	1	0	2	1	4	5
3:00 AM	0	0	1	3	4	0	0	1	0	1	5
4:00 AM	1	1	1	1	4	2	1	1	8	12	16
5:00 AM	3	1	2	2	8	9	19	24	28	80	88
6:00 AM	7	1	12	9	29	19	2	13	13	47	76
7:00 AM	5	1	6	6	18	10	12	28	30	80	98
8:00 AM	5	8	3	6	22	18	15	9	14	56	78
9:00 AM	4	7	3	12	26	8	8	9	12	37	63
10:00 AM	8	17	13	8	46	8	13	14	15	50	96
11:00 AM	7	13	4	7	31	21	6	12	11	50	81
12:00 PM	9	7	7	13	36	8	10	19	11	48	84
1:00 PM	10	16	15	15	56	10	9	17	16	52	108
2:00 PM	10	10	12	12	44	5	17	18	20	60	104
3:00 PM	16	17	18	18	69	18	16	25	8	67	136
4:00 PM	14	11	14	20	59	12	10	6	8	36	95
5:00 PM	14	20	18	8	60	5	8	7	6	26	86
6:00 PM	19	17	5	10	51	1	4	7	0	12	63
7:00 PM	10	2	4	6	22	2	7	3	4	16	38
8:00 PM	4	15	9	3	31	5	2	6	3	16	47
9:00 PM	0	1	0	6	7	3	5	3	3	14	21
10:00 PM	3	3	2	1	9	2	2	0	3	7	16
11:00 PM	1	1	1	0	3	0	2	1	0	3	6
Total	45.0%				646	55.0%				788	
1434											

AM% 43.9% **AM Peak** 116 **7:30 am to 8:30 am** **AM P.H.F.** 0.81
PM% 56.1% **PM Peak** 142 **2:45 pm to 3:45 pm** **PM P.H.F.** 0.83





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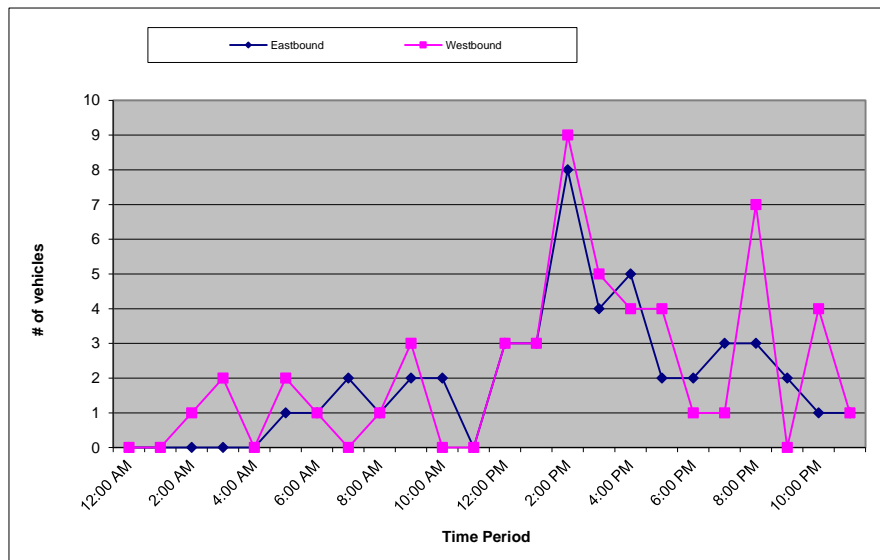
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Parlier Ave **LATITUDE** 36.6127044
SEGMENT Clovis Ave to Sunnyside Ave. **LONGITUDE** -119.6984421
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	1	0	0	0	1	1	
3:00 AM	0	0	0	0	0	0	0	1	1	2	2	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	1	1	0	0	1	1	2	3	
6:00 AM	1	0	0	0	1	0	1	0	0	1	2	
7:00 AM	0	1	1	0	2	0	0	0	0	0	2	
8:00 AM	1	0	0	0	1	0	0	1	0	1	2	
9:00 AM	0	1	1	0	2	0	0	1	2	3	5	
10:00 AM	0	0	2	0	2	0	0	0	0	0	2	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	3	0	0	3	0	2	1	0	3	6	
1:00 PM	0	0	0	3	3	0	1	0	2	3	6	
2:00 PM	2	2	1	3	8	3	2	4	0	9	17	
3:00 PM	1	2	0	1	4	0	1	0	4	5	9	
4:00 PM	0	2	1	2	5	3	0	1	0	4	9	
5:00 PM	0	0	0	2	2	0	1	3	0	4	6	
6:00 PM	0	1	1	0	2	1	0	0	0	1	3	
7:00 PM	0	0	2	1	3	1	0	0	0	1	4	
8:00 PM	0	1	1	1	3	2	1	1	3	7	10	
9:00 PM	1	0	0	1	2	0	0	0	0	0	2	
10:00 PM	0	0	0	1	1	2	2	0	0	4	5	
11:00 PM	0	0	1	0	1	0	0	1	0	1	2	
Total	46.9%					46	53.1%					52
98												

AM% 19.4% **AM Peak 5** 9:15 am to 10:15 am **AM P.H.F.** 0.63
PM% 80.6% **PM Peak 19** 1:45 pm to 2:45 pm **PM P.H.F.** 0.95





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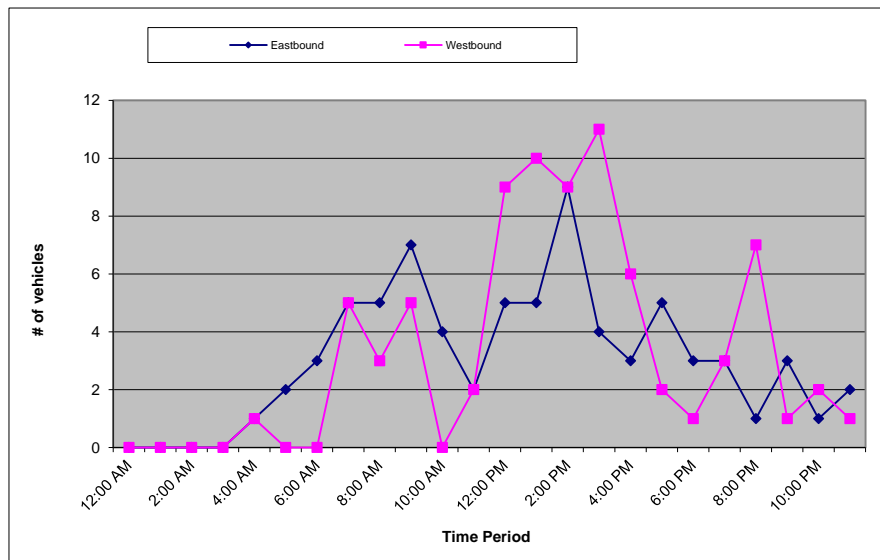
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Parlier Ave **LATITUDE** 36.6127147
SEGMENT Sunnyside Ave to Fowler Ave **LONGITUDE** -119.6843422
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	1	1	0	0	1	0	1	2	
5:00 AM	1	1	0	0	2	0	0	0	0	0	2	
6:00 AM	2	0	0	1	3	0	0	0	0	0	3	
7:00 AM	0	0	4	1	5	0	2	1	2	5	10	
8:00 AM	3	1	1	0	5	0	0	3	0	3	8	
9:00 AM	2	2	0	3	7	1	2	2	0	5	12	
10:00 AM	1	0	3	0	4	0	0	0	0	0	4	
11:00 AM	0	0	1	1	2	0	1	1	0	2	4	
12:00 PM	1	2	2	0	5	0	2	3	4	9	14	
1:00 PM	1	2	1	1	5	4	2	3	1	10	15	
2:00 PM	2	3	4	0	9	4	4	1	0	9	18	
3:00 PM	0	2	2	0	4	3	4	4	0	11	15	
4:00 PM	0	1	1	1	3	2	2	1	1	6	9	
5:00 PM	1	1	1	2	5	0	1	1	0	2	7	
6:00 PM	1	0	0	2	3	1	0	0	0	1	4	
7:00 PM	2	0	1	0	3	1	2	0	0	3	6	
8:00 PM	0	1	0	0	1	6	0	1	0	7	8	
9:00 PM	2	0	1	0	3	1	0	0	0	1	4	
10:00 PM	0	0	0	1	1	0	0	0	2	2	3	
11:00 PM	0	0	2	0	2	0	0	1	0	1	3	
Total	48.3%					73	51.7%					78
151												

AM% 29.8% **AM Peak** 12 **9:00 am to 10:00 am** **AM P.H.F.** 0.75
PM% 70.2% **PM Peak** 20 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.71





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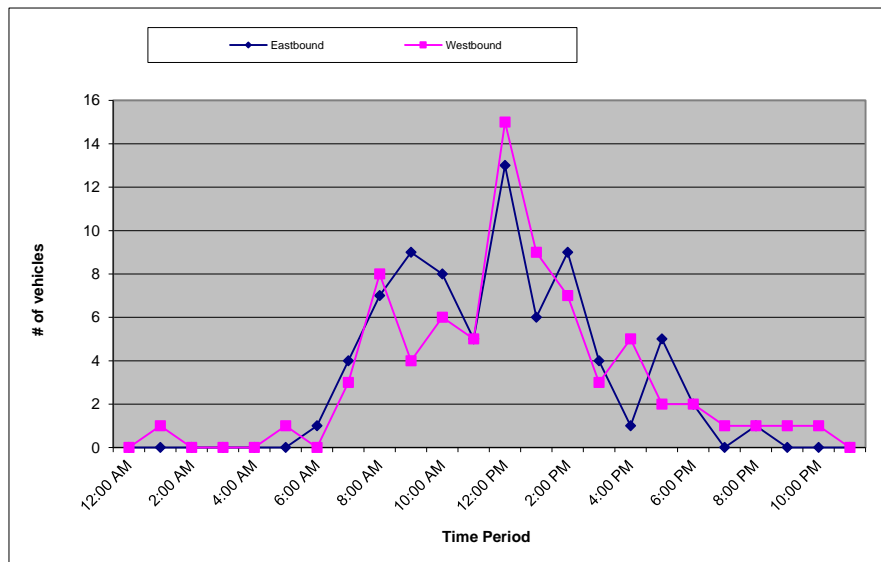
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Parlier Ave **LATITUDE** 36.6127115
SEGMENT Fowler Ave to SR-99 **LONGITUDE** -119.6804329
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	1	0	1	1	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	1	1	1	
6:00 AM	0	0	0	1	1	0	0	0	0	0	1	
7:00 AM	0	0	0	4	4	1	0	0	2	3	7	
8:00 AM	2	2	0	3	7	3	2	2	1	8	15	
9:00 AM	4	3	0	2	9	0	1	3	0	4	13	
10:00 AM	1	3	1	3	8	1	2	1	2	6	14	
11:00 AM	0	1	2	2	5	0	2	2	1	5	10	
12:00 PM	5	2	4	2	13	3	5	4	3	15	28	
1:00 PM	2	1	3	0	6	3	1	4	1	9	15	
2:00 PM	5	2	0	2	9	3	2	2	0	7	16	
3:00 PM	1	0	0	3	4	2	1	0	0	3	7	
4:00 PM	0	1	0	0	1	3	0	1	1	5	6	
5:00 PM	0	3	1	1	5	2	0	0	0	2	7	
6:00 PM	0	0	1	1	2	1	1	0	0	2	4	
7:00 PM	0	0	0	0	0	1	0	0	0	1	1	
8:00 PM	0	0	0	1	1	0	0	1	0	1	2	
9:00 PM	0	0	0	0	0	0	0	1	0	1	1	
10:00 PM	0	0	0	0	0	0	1	0	0	1	1	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	
Total	50.0%					75	50.0%					75
150												

AM% 41.3% **AM Peak** 17 7:45 am to 8:45 am **AM P.H.F.** 0.71
PM% 58.7% **PM Peak** 28 12:00 pm to 1:00 pm **PM P.H.F.** 0.88





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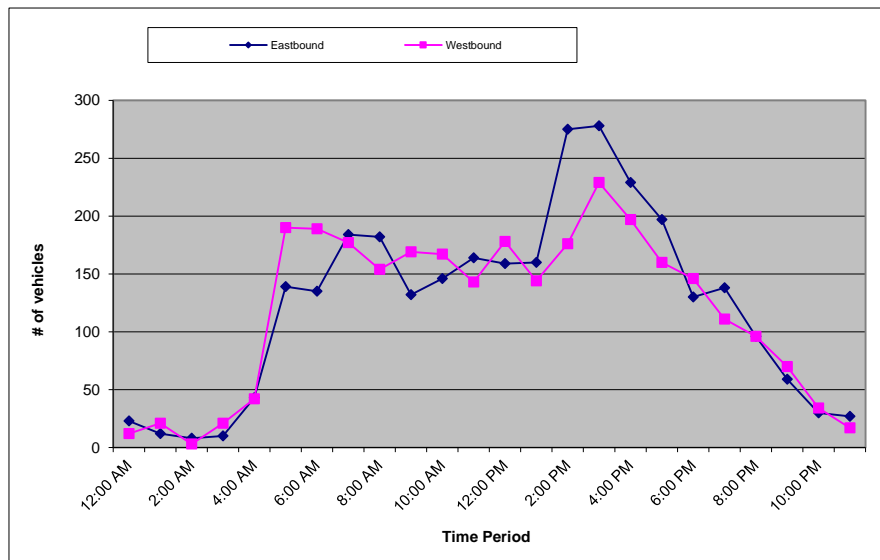
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Manning Ave **LATITUDE** 36.605385
SEGMENT W of 99 SB Ramps **LONGITUDE** -119.6638155
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	5	7	8	23	4	3	1	4	12	35
1:00 AM	7	2	0	3	12	3	5	3	10	21	33
2:00 AM	3	1	1	3	8	0	0	1	2	3	11
3:00 AM	2	3	2	3	10	3	5	7	6	21	31
4:00 AM	5	6	9	23	43	6	5	14	17	42	85
5:00 AM	20	34	35	50	139	14	42	60	74	190	329
6:00 AM	30	29	32	44	135	67	45	37	40	189	324
7:00 AM	43	41	51	49	184	49	55	32	41	177	361
8:00 AM	59	46	44	33	182	47	45	37	25	154	336
9:00 AM	31	30	35	36	132	34	46	48	41	169	301
10:00 AM	32	48	35	31	146	44	44	37	42	167	313
11:00 AM	38	43	47	36	164	44	34	39	26	143	307
12:00 PM	28	46	39	46	159	41	47	43	47	178	337
1:00 PM	41	29	45	45	160	33	35	27	49	144	304
2:00 PM	50	66	77	82	275	43	33	39	61	176	451
3:00 PM	78	64	90	46	278	71	69	49	40	229	507
4:00 PM	60	59	58	52	229	62	35	48	52	197	426
5:00 PM	51	53	59	34	197	45	49	31	35	160	357
6:00 PM	40	31	34	25	130	36	42	38	30	146	276
7:00 PM	42	34	30	32	138	30	31	23	27	111	249
8:00 PM	27	26	31	12	96	34	32	13	17	96	192
9:00 PM	12	19	16	12	59	24	16	19	11	70	129
10:00 PM	11	7	9	3	30	10	10	10	4	34	64
11:00 PM	2	6	12	7	27	3	5	4	5	17	44
Total	50.9%				2956	49.1%				2846	5802

AM% 42.5% **AM Peak** 375 **7:15 am to 8:15 am** **AM P.H.F.** 0.88
PM% 57.5% **PM Peak** 564 **2:45 pm to 3:45 pm** **PM P.H.F.** 0.95





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24 Hour Volume Report

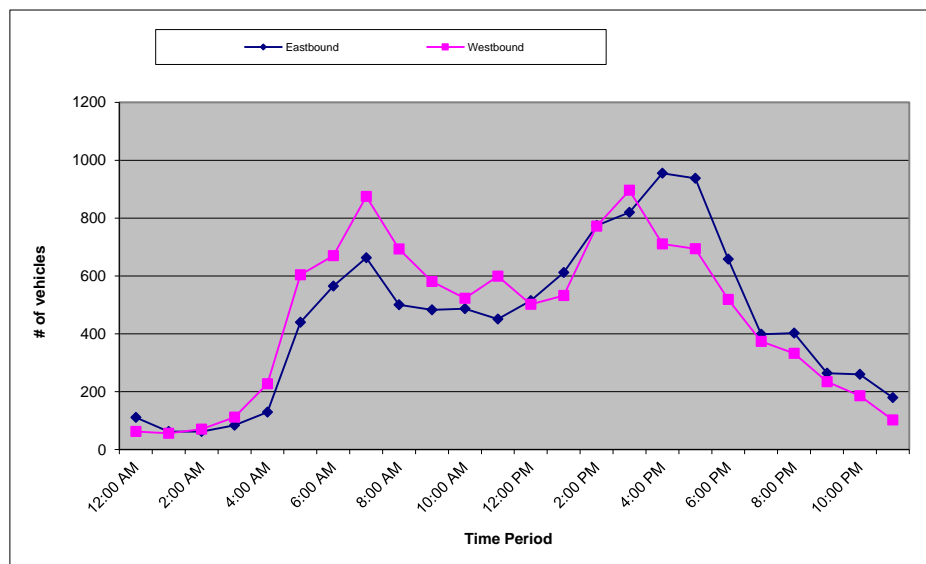
Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Manning Ave
SEGMENT E of 99 NB Ramps
COLLECTION DATE Thursday, May 6, 2021
NUMBER OF LANES 4

LATITUDE 36.6053915
LONGITUDE -119.6586375
WEATHER Clear

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	38	29	19	25	111	18	15	16	13	62	173
1:00 AM	18	14	14	16	62	12	12	18	14	56	118
2:00 AM	22	12	17	11	62	24	10	22	14	70	132
3:00 AM	20	20	26	18	84	19	21	39	33	112	196
4:00 AM	25	27	35	42	129	36	44	80	67	227	356
5:00 AM	55	80	116	189	440	98	121	210	175	604	1044
6:00 AM	150	117	144	154	565	139	167	204	160	670	1235
7:00 AM	128	150	201	184	663	184	211	279	201	875	1538
8:00 AM	128	144	121	107	500	203	194	160	136	693	1193
9:00 AM	113	110	136	124	483	131	156	148	146	581	1064
10:00 AM	115	108	127	137	487	125	133	138	127	523	1010
11:00 AM	129	101	114	107	451	136	165	151	147	599	1050
12:00 PM	101	126	139	149	515	157	159	147	39	502	1017
1:00 PM	151	142	149	170	612	40	158	162	172	532	1144
2:00 PM	154	173	233	214	774	153	176	211	232	772	1546
3:00 PM	200	200	217	203	820	215	202	256	223	896	1716
4:00 PM	217	277	218	243	955	182	176	181	172	711	1666
5:00 PM	241	258	235	204	938	202	193	140	159	694	1632
6:00 PM	199	175	148	136	658	155	131	130	103	519	1177
7:00 PM	104	116	76	102	398	116	101	81	76	374	772
8:00 PM	97	100	107	98	402	99	69	86	78	332	734
9:00 PM	74	70	73	47	264	67	80	48	39	234	498
10:00 PM	73	74	54	59	260	45	45	39	57	186	446
11:00 PM	56	40	31	52	179	26	26	25	25	102	281
Total	49.7%				10812	50.3%				10926	21738

AM% 41.9% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 58.1% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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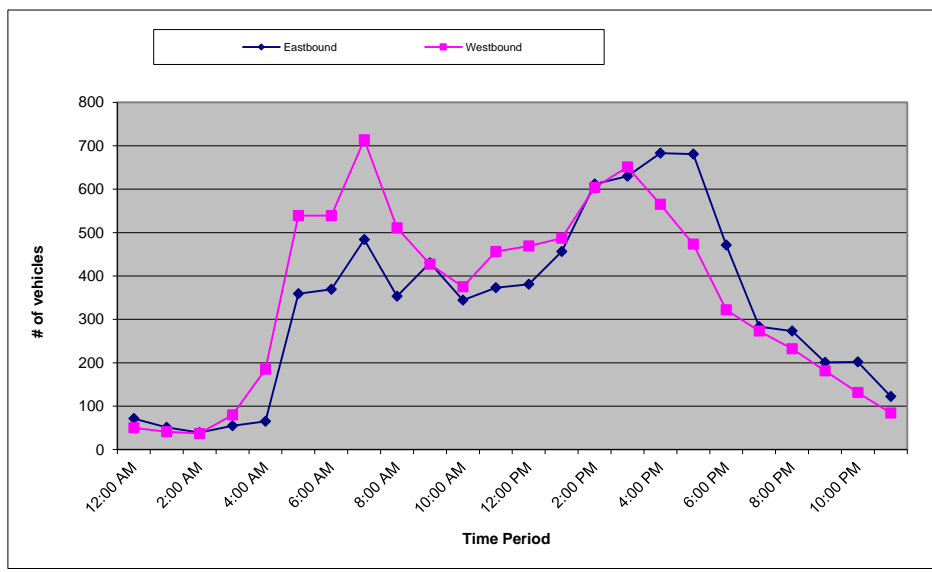
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Manning Ave **LATITUDE** 36.6054363
SEGMENT E of Golden State **LONGITUDE** -119.6531819
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	28	19	14	10	71	21	8	13	8	50	121
1:00 AM	10	10	9	22	51	8	11	10	12	41	92
2:00 AM	12	8	13	6	39	11	6	11	9	37	76
3:00 AM	16	12	17	10	55	12	21	23	24	80	135
4:00 AM	5	15	23	22	65	35	32	56	62	185	250
5:00 AM	38	65	84	172	359	83	110	198	148	539	898
6:00 AM	99	84	95	91	369	107	124	165	143	539	908
7:00 AM	115	112	154	103	484	132	172	226	184	714	1198
8:00 AM	91	102	91	69	353	146	145	120	100	511	864
9:00 AM	173	77	88	92	430	112	99	127	89	427	857
10:00 AM	83	85	80	96	344	97	103	71	104	375	719
11:00 AM	109	84	98	82	373	125	112	119	100	456	829
12:00 PM	82	89	101	109	381	125	130	106	108	469	850
1:00 PM	115	110	112	119	456	109	120	132	126	487	943
2:00 PM	130	143	169	170	612	110	144	160	190	604	1216
3:00 PM	162	131	181	156	630	150	177	168	156	651	1281
4:00 PM	148	175	169	191	683	150	131	138	146	565	1248
5:00 PM	185	179	181	136	681	136	123	102	112	473	1154
6:00 PM	141	123	102	105	471	95	78	84	65	322	793
7:00 PM	75	79	61	68	283	94	62	56	61	273	556
8:00 PM	69	74	74	56	273	66	47	70	49	232	505
9:00 PM	52	55	49	45	201	55	48	42	36	181	382
10:00 PM	54	50	46	52	202	38	30	30	33	131	333
11:00 PM	32	31	20	39	122	20	20	20	24	84	206
Total	48.7%				7988	51.3%				8426	16414

AM% 42.3% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 57.7% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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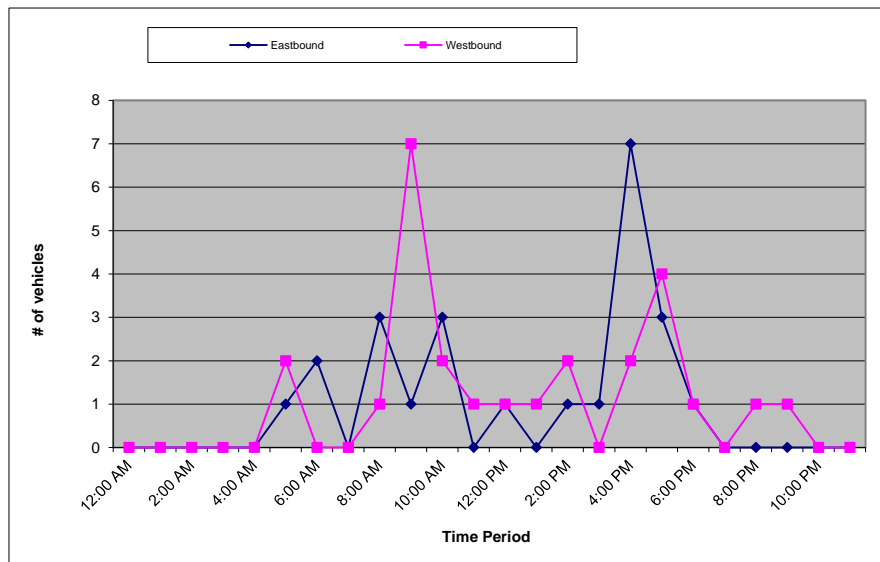
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Springfield Ave **LATITUDE** 36.5981292
SEGMENT W of Temperance **LONGITUDE** -119.6661666
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	1	1	1	0	0	1	2	3	
6:00 AM	0	2	0	0	2	0	0	0	0	0	2	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	3	0	0	3	0	0	1	0	1	4	
9:00 AM	0	1	0	0	1	1	5	0	1	7	8	
10:00 AM	0	1	1	1	3	1	0	1	0	2	5	
11:00 AM	0	0	0	0	0	0	0	0	1	1	1	
12:00 PM	0	1	0	0	1	1	0	0	0	1	2	
1:00 PM	0	0	0	0	0	1	0	0	0	1	1	
2:00 PM	0	1	0	0	1	1	1	0	0	2	3	
3:00 PM	0	0	0	1	1	0	0	0	0	0	1	
4:00 PM	1	2	0	4	7	1	0	1	0	2	9	
5:00 PM	0	1	2	0	3	0	4	0	0	4	7	
6:00 PM	1	0	0	0	1	1	0	0	0	1	2	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	1	0	0	1	1	
9:00 PM	0	0	0	0	0	1	0	0	0	1	1	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	
Total	48.0%					24	52.0%					26
50												

AM% 46.0% **AM Peak 8** 9:15 am to 10:15 am **AM P.H.F.** 0.33
PM% 54.0% **PM Peak 11** 4:45 pm to 5:45 pm **PM P.H.F.** 0.55





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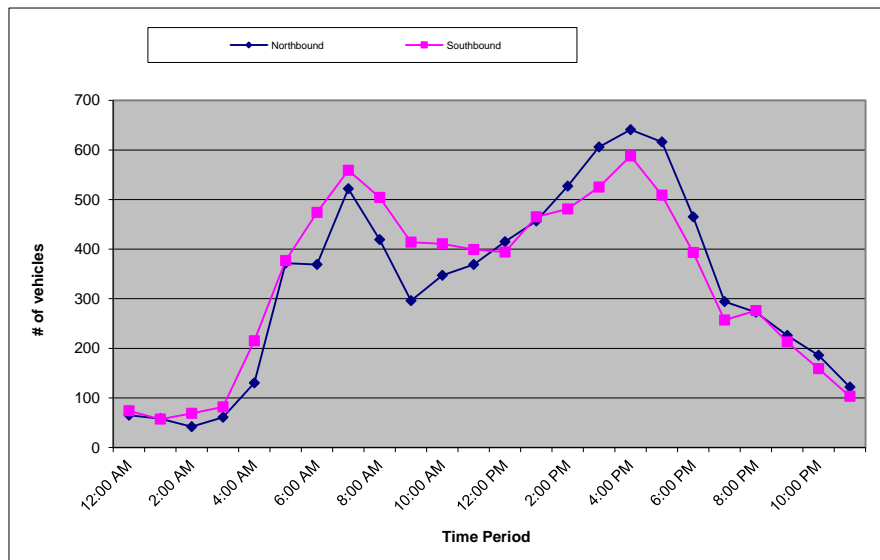
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6476493
SEGMENT S of Lincoln Ave **LONGITUDE** -119.6999864
COLLECTION DATE Tuesday, June 22, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	23	10	18	14	65	19	25	17	13	74	139
1:00 AM	12	25	13	8	58	7	12	13	25	57	115
2:00 AM	17	10	10	5	42	19	21	21	8	69	111
3:00 AM	16	13	19	13	61	19	29	20	14	82	143
4:00 AM	18	17	44	51	130	32	42	51	90	215	345
5:00 AM	60	76	129	107	372	94	85	103	95	377	749
6:00 AM	74	79	123	93	369	91	101	122	160	474	843
7:00 AM	123	107	148	144	522	119	140	135	165	559	1081
8:00 AM	88	98	129	104	419	139	116	136	113	504	923
9:00 AM	23	81	97	95	296	84	114	104	112	414	710
10:00 AM	76	94	99	78	347	105	116	100	90	411	758
11:00 AM	86	105	94	84	369	110	101	93	95	399	768
12:00 PM	93	112	100	110	415	95	96	112	91	394	809
1:00 PM	119	131	101	106	457	116	117	126	106	465	922
2:00 PM	99	109	168	151	527	125	125	114	117	481	1008
3:00 PM	149	146	149	162	606	114	137	140	134	525	1131
4:00 PM	180	141	154	166	641	156	140	140	152	588	1229
5:00 PM	175	158	144	139	616	115	162	141	91	509	1125
6:00 PM	123	120	119	103	465	114	97	95	87	393	858
7:00 PM	76	72	72	74	294	67	81	68	41	257	551
8:00 PM	67	68	77	61	273	59	65	69	83	276	549
9:00 PM	49	60	78	39	226	60	59	50	44	213	439
10:00 PM	54	40	51	41	186	56	47	28	28	159	345
11:00 PM	30	34	36	22	122	30	27	23	23	103	225
Total	49.6%				7878	50.4%				7998	15876

AM% 42.1% **AM Peak** 1081 **7:00 am to 8:00 am** **AM P.H.F.** 0.87
PM% 57.9% **PM Peak** 1229 **4:00 pm to 5:00 pm** **PM P.H.F.** 0.91





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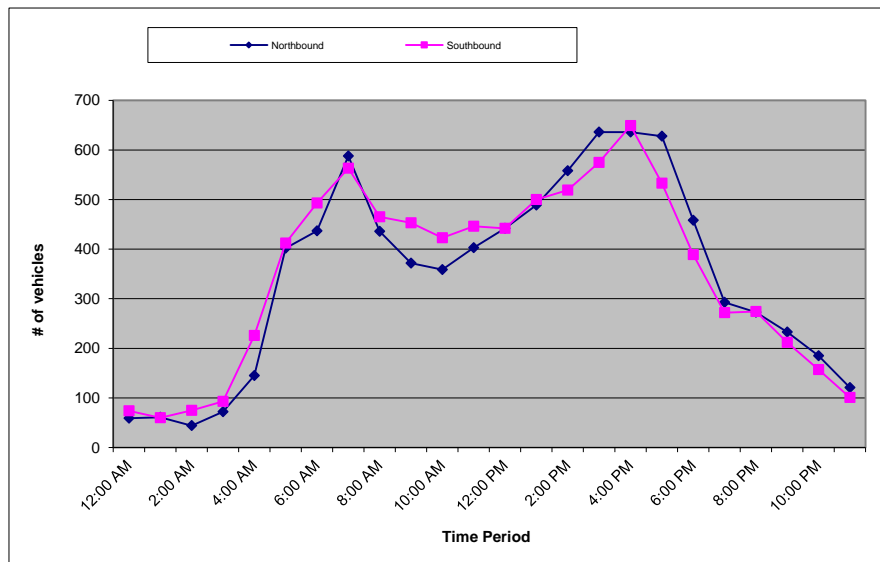
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6428161
SEGMENT N of SR 99 NB Ramps, S of GS Frontage Connector Road **LONGITUDE** -119.6999975
COLLECTION DATE Tuesday, June 22, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	22	10	15	12	59	21	24	16	13	74	133
1:00 AM	14	25	13	9	61	7	13	14	26	60	121
2:00 AM	18	9	12	5	44	18	24	23	10	75	119
3:00 AM	19	14	18	21	72	22	32	24	15	93	165
4:00 AM	15	16	52	62	145	32	47	49	98	226	371
5:00 AM	62	84	144	112	402	100	96	113	103	412	814
6:00 AM	88	92	140	117	437	105	107	130	151	493	930
7:00 AM	135	131	155	167	588	128	141	125	169	563	1151
8:00 AM	98	111	125	102	436	152	114	107	92	465	901
9:00 AM	77	77	109	109	372	99	122	105	127	453	825
10:00 AM	74	101	98	86	359	111	111	109	92	423	782
11:00 AM	89	114	95	105	403	132	124	98	92	446	849
12:00 PM	94	129	108	111	442	111	106	122	103	442	884
1:00 PM	127	133	109	120	489	125	125	138	112	500	989
2:00 PM	106	125	177	150	558	124	145	121	129	519	1077
3:00 PM	153	157	154	172	636	125	141	153	156	575	1211
4:00 PM	183	134	157	162	636	169	154	161	165	649	1285
5:00 PM	171	160	150	147	628	127	169	136	101	533	1161
6:00 PM	115	127	113	103	458	111	97	97	84	389	847
7:00 PM	71	79	73	70	293	75	78	73	46	272	565
8:00 PM	67	74	73	59	273	59	64	70	81	274	547
9:00 PM	47	65	78	43	233	59	56	50	47	212	445
10:00 PM	55	40	50	40	185	55	47	25	30	157	342
11:00 PM	29	35	34	23	121	29	28	24	20	101	222
Total	49.8%				8330	50.2%				8406	16736

AM% 42.8% **AM Peak** 1151 **7:00 am to 8:00 am** **AM P.H.F.** 0.86
PM% 57.2% **PM Peak** 1286 **3:45 pm to 4:45 pm** **PM P.H.F.** 0.91





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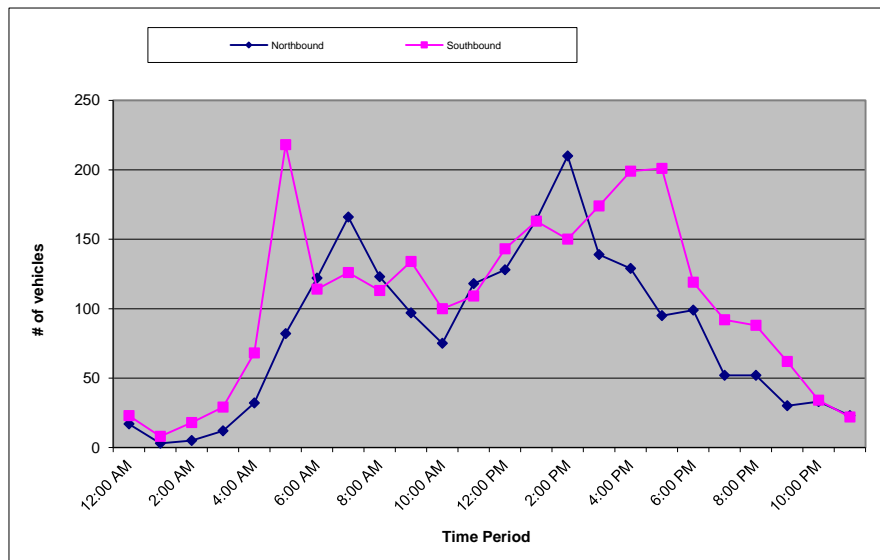
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6384705
SEGMENT SR 99 SB off to Adams Ave **LONGITUDE** -119.7000393
COLLECTION DATE Tuesday, June 22, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	6	3	3	5	17	4	10	5	4	23	40
1:00 AM	0	0	1	2	3	1	3	1	3	8	11
2:00 AM	3	2	0	0	5	1	9	3	5	18	23
3:00 AM	3	2	2	5	12	2	6	11	10	29	41
4:00 AM	5	1	16	10	32	5	6	17	40	68	100
5:00 AM	19	18	18	27	82	78	66	40	34	218	300
6:00 AM	20	21	38	43	122	14	24	30	46	114	236
7:00 AM	38	31	45	52	166	33	33	25	35	126	292
8:00 AM	28	27	27	41	123	32	38	22	21	113	236
9:00 AM	23	28	24	22	97	34	36	32	32	134	231
10:00 AM	15	18	23	19	75	22	23	20	35	100	175
11:00 AM	32	28	30	28	118	28	29	29	23	109	227
12:00 PM	23	34	36	35	128	28	42	34	39	143	271
1:00 PM	40	41	37	46	164	38	45	45	35	163	327
2:00 PM	55	52	55	48	210	38	42	37	33	150	360
3:00 PM	36	31	31	41	139	49	39	45	41	174	313
4:00 PM	35	28	33	33	129	43	44	54	58	199	328
5:00 PM	30	23	21	21	95	46	59	48	48	201	296
6:00 PM	18	21	37	23	99	30	33	27	29	119	218
7:00 PM	18	11	13	10	52	25	27	14	26	92	144
8:00 PM	20	13	8	11	52	25	18	31	14	88	140
9:00 PM	7	12	7	4	30	16	15	15	16	62	92
10:00 PM	10	3	12	8	33	15	8	7	4	34	67
11:00 PM	3	2	14	4	23	2	6	9	5	22	45
Total	44.4%				2006	55.6%				2507	4513

AM% 42.4% **AM Peak 300** 5:00 am to 6:00 am **AM P.H.F.** 0.77
PM% 57.6% **PM Peak 360** 2:00 pm to 3:00 pm **PM P.H.F.** 0.96





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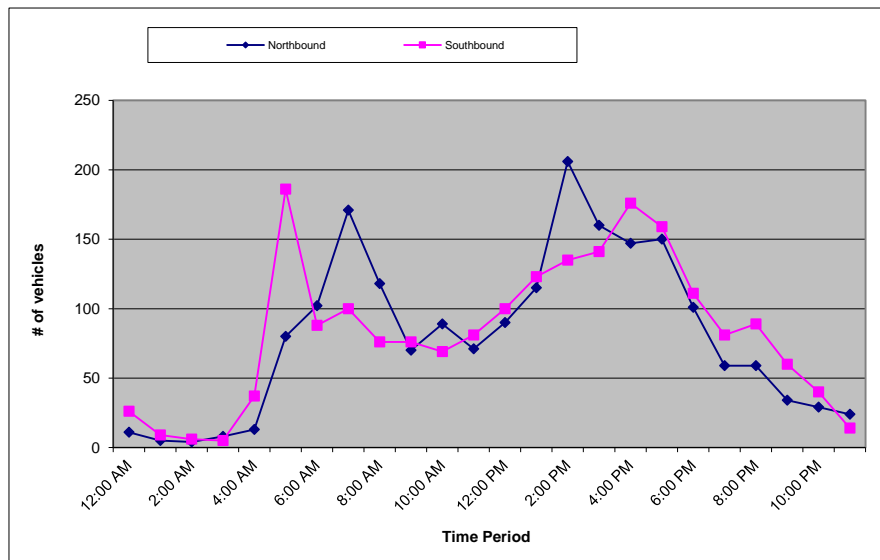
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6325463
SEGMENT Adams Ave to Sumner Ave **LONGITUDE** -119.7000876
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	5	4	0	2	11	10	7	4	5	26	37
1:00 AM	1	2	1	1	5	2	4	1	2	9	14
2:00 AM	2	1	1	0	4	2	0	3	1	6	10
3:00 AM	1	3	4	0	8	0	1	3	1	5	13
4:00 AM	2	1	4	6	13	2	7	13	15	37	50
5:00 AM	14	19	20	27	80	34	53	60	39	186	266
6:00 AM	14	23	32	33	102	16	24	26	22	88	190
7:00 AM	33	47	58	33	171	24	22	27	27	100	271
8:00 AM	33	36	28	21	118	23	13	18	22	76	194
9:00 AM	21	12	21	16	70	15	23	20	18	76	146
10:00 AM	27	26	21	15	89	18	19	18	14	69	158
11:00 AM	17	14	22	18	71	21	14	30	16	81	152
12:00 PM	14	27	26	23	90	17	30	26	27	100	190
1:00 PM	19	30	36	30	115	39	31	23	30	123	238
2:00 PM	43	42	80	41	206	37	36	39	23	135	341
3:00 PM	43	38	40	39	160	35	19	49	38	141	301
4:00 PM	35	34	38	40	147	35	44	49	48	176	323
5:00 PM	38	31	34	47	150	48	34	45	32	159	309
6:00 PM	40	15	26	20	101	29	27	23	32	111	212
7:00 PM	18	14	17	10	59	20	22	20	19	81	140
8:00 PM	18	9	15	17	59	26	23	18	22	89	148
9:00 PM	15	4	6	9	34	19	15	14	12	60	94
10:00 PM	5	9	8	7	29	11	14	8	7	40	69
11:00 PM	5	8	6	5	24	5	7	0	2	14	38
Total	49.1%				1916	50.9%				1988	3904

AM% 38.4% **AM Peak** 271 **7:00 am to 8:00 am** **AM P.H.F.** 0.80
PM% 61.6% **PM Peak** 341 **2:00 pm to 3:00 pm** **PM P.H.F.** 0.72





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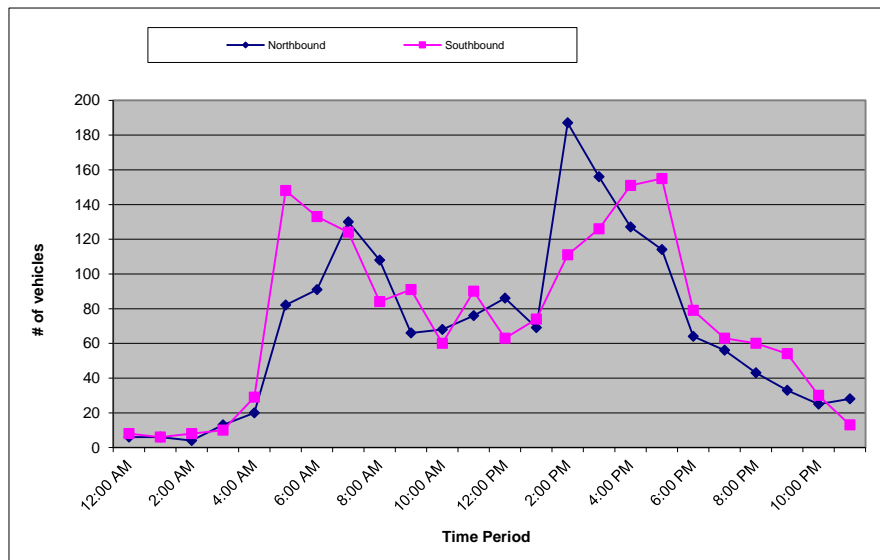
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6208191
SEGMENT Sumner Ave to South **LONGITUDE** -119.7002024
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	3	0	1	6	4	2	1	1	8	14
1:00 AM	0	2	1	3	6	3	1	2	0	6	12
2:00 AM	1	0	2	1	4	1	1	4	2	8	12
3:00 AM	3	1	4	5	13	5	2	2	1	10	23
4:00 AM	4	5	3	8	20	5	0	11	13	29	49
5:00 AM	11	16	29	26	82	16	30	50	52	148	230
6:00 AM	16	27	25	23	91	34	34	35	30	133	224
7:00 AM	26	40	28	36	130	29	32	33	30	124	254
8:00 AM	26	30	31	21	108	22	25	18	19	84	192
9:00 AM	22	14	19	11	66	25	20	21	25	91	157
10:00 AM	15	24	15	14	68	20	15	10	15	60	128
11:00 AM	20	21	15	20	76	26	22	21	21	90	166
12:00 PM	25	23	19	19	86	15	21	12	15	63	149
1:00 PM	15	20	17	17	69	14	24	17	19	74	143
2:00 PM	32	35	70	50	187	29	23	34	25	111	298
3:00 PM	36	39	36	45	156	28	35	22	41	126	282
4:00 PM	32	34	31	30	127	32	35	42	42	151	278
5:00 PM	32	31	33	18	114	53	34	38	30	155	269
6:00 PM	21	17	14	12	64	20	21	23	15	79	143
7:00 PM	13	23	10	10	56	16	20	16	11	63	119
8:00 PM	9	10	12	12	43	12	21	16	11	60	103
9:00 PM	14	8	7	4	33	22	7	10	15	54	87
10:00 PM	2	6	4	13	25	7	11	5	7	30	55
11:00 PM	4	7	10	7	28	1	4	6	2	13	41
Total	48.4%				1658	51.6%				1770	3428

AM% 42.6% **AM Peak** 254 **7:00 am to 8:00 am** **AM P.H.F.** 0.88
PM% 57.4% **PM Peak** 317 **2:30 pm to 3:30 pm** **PM P.H.F.** 0.76





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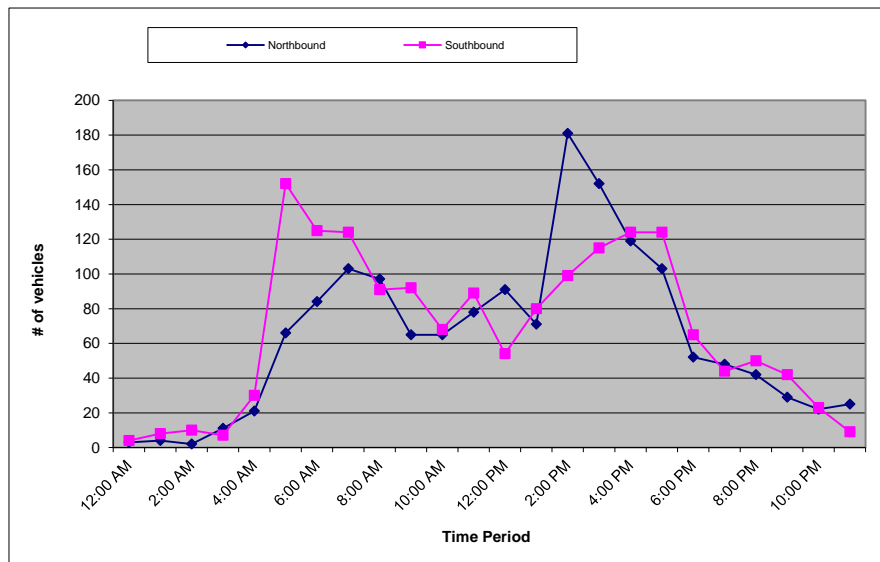
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Clovis Ave **LATITUDE** 36.6168851
SEGMENT South Ave to Parlier Ave **LONGITUDE** -119.7002272
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	1	0	0	3	1	1	2	0	4	7
1:00 AM	1	0	2	1	4	5	1	2	0	8	12
2:00 AM	1	0	0	1	2	3	1	5	1	10	12
3:00 AM	3	1	3	4	11	3	1	2	1	7	18
4:00 AM	5	6	4	6	21	6	1	11	12	30	51
5:00 AM	7	18	20	21	66	17	28	53	54	152	218
6:00 AM	14	27	18	25	84	24	34	38	29	125	209
7:00 AM	20	27	29	27	103	25	34	35	30	124	227
8:00 AM	27	30	22	18	97	24	28	16	23	91	188
9:00 AM	21	16	15	13	65	24	21	24	23	92	157
10:00 AM	14	21	18	12	65	23	15	12	18	68	133
11:00 AM	18	19	24	17	78	28	20	21	20	89	167
12:00 PM	24	23	21	23	91	13	19	13	9	54	145
1:00 PM	17	16	14	24	71	17	24	18	21	80	151
2:00 PM	30	28	72	51	181	24	23	30	22	99	280
3:00 PM	32	37	32	51	152	27	31	24	33	115	267
4:00 PM	35	33	25	26	119	25	30	39	30	124	243
5:00 PM	31	30	27	15	103	45	27	34	18	124	227
6:00 PM	18	12	11	11	52	23	18	12	12	65	117
7:00 PM	14	18	6	10	48	12	19	7	6	44	92
8:00 PM	16	6	9	11	42	12	17	13	8	50	92
9:00 PM	14	7	6	2	29	14	8	12	8	42	71
10:00 PM	4	3	5	10	22	3	12	4	4	23	45
11:00 PM	3	6	9	7	25	1	4	2	2	9	34
Total	48.5%				1534	51.5%				1629	3163

AM% 44.2% **AM Peak** 233 7:15 am to 8:15 am **AM P.H.F.** 0.91
PM% 55.8% **PM Peak** 302 2:30 pm to 3:30 pm **PM P.H.F.** 0.74





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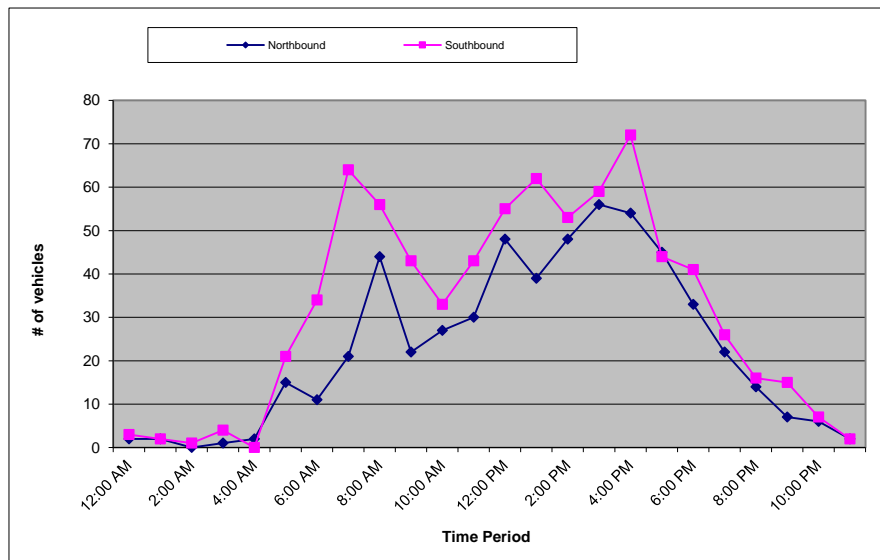
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET S Fowler Ave **LATITUDE** 36.6481084
SEGMENT Lincoln Ave to Clayton Ave **LONGITUDE** -119.6820523
COLLECTION DATE Thursday, May 6, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	0	1	1	2	1	1	0	1	3	5
1:00 AM	0	0	1	1	2	0	0	2	0	2	4
2:00 AM	0	0	0	0	0	1	0	0	0	1	1
3:00 AM	0	0	1	0	1	1	0	3	0	4	5
4:00 AM	0	0	0	2	2	0	0	0	0	0	2
5:00 AM	5	1	3	6	15	2	4	5	10	21	36
6:00 AM	1	3	5	2	11	10	8	9	7	34	45
7:00 AM	4	5	7	5	21	14	10	15	25	64	85
8:00 AM	15	13	7	9	44	23	15	6	12	56	100
9:00 AM	6	4	5	7	22	17	5	10	11	43	65
10:00 AM	1	13	8	5	27	7	6	6	14	33	60
11:00 AM	6	9	10	5	30	13	8	11	11	43	73
12:00 PM	12	17	8	11	48	10	17	14	14	55	103
1:00 PM	11	9	7	12	39	12	15	14	21	62	101
2:00 PM	15	7	8	18	48	10	13	10	20	53	101
3:00 PM	11	16	15	14	56	17	13	16	13	59	115
4:00 PM	12	11	22	9	54	14	18	17	23	72	126
5:00 PM	11	13	14	7	45	12	13	5	14	44	89
6:00 PM	3	9	9	12	33	6	12	12	11	41	74
7:00 PM	6	4	6	6	22	7	5	10	4	26	48
8:00 PM	2	5	4	3	14	5	5	3	3	16	30
9:00 PM	2	2	2	1	7	6	2	5	2	15	22
10:00 PM	3	1	0	2	6	3	0	2	2	7	13
11:00 PM	0	0	0	2	2	0	1	1	0	2	4
Total	42.2%				551	57.8%				756	
1307											

AM% 36.8% **AM Peak** 118 **7:30 am to 8:30 am** **AM P.H.F.** 0.78
PM% 63.2% **PM Peak** 126 **4:00 pm to 5:00 pm** **PM P.H.F.** 0.81





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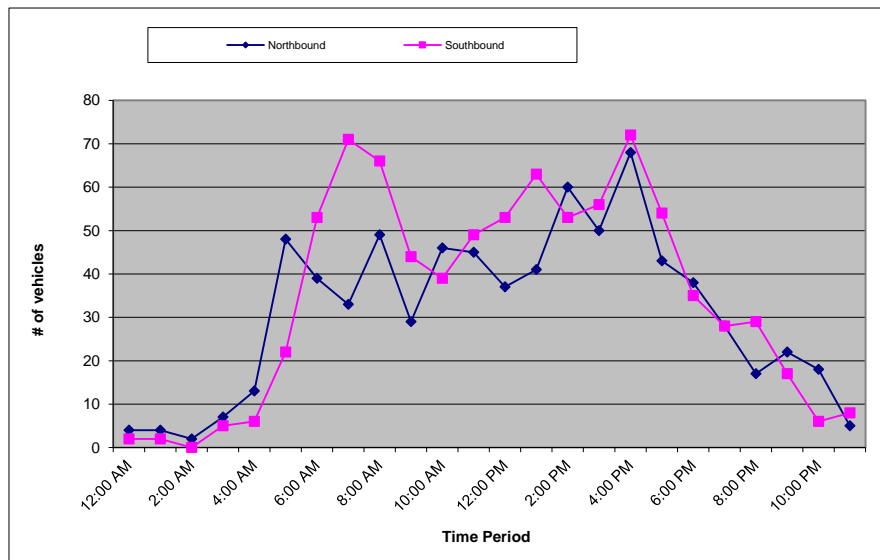
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET S Fowler Ave **LATITUDE** 36.6400483
SEGMENT Clayton Ave to Adams Ave **LONGITUDE** -119.6821646
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	1	1	1	4	1	1	0	0	2	6
1:00 AM	0	0	4	0	4	0	0	2	0	2	6
2:00 AM	0	1	1	0	2	0	0	0	0	0	2
3:00 AM	0	3	1	3	7	1	1	3	0	5	12
4:00 AM	2	3	5	3	13	0	0	3	3	6	19
5:00 AM	7	11	17	13	48	9	4	6	3	22	70
6:00 AM	11	12	10	6	39	12	12	19	10	53	92
7:00 AM	12	4	9	8	33	8	17	25	21	71	104
8:00 AM	17	19	7	6	49	35	16	7	8	66	115
9:00 AM	6	6	9	8	29	11	16	9	8	44	73
10:00 AM	14	14	6	12	46	12	5	8	14	39	85
11:00 AM	9	11	9	16	45	10	9	19	11	49	94
12:00 PM	9	6	11	11	37	16	10	9	18	53	90
1:00 PM	12	13	4	12	41	19	13	10	21	63	104
2:00 PM	20	11	16	13	60	13	9	12	19	53	113
3:00 PM	8	12	13	17	50	12	13	14	17	56	106
4:00 PM	19	21	16	12	68	16	23	19	14	72	140
5:00 PM	15	12	8	8	43	13	16	16	9	54	97
6:00 PM	9	12	10	7	38	14	8	7	6	35	73
7:00 PM	7	12	5	4	28	7	10	7	4	28	56
8:00 PM	6	3	3	5	17	7	9	10	3	29	46
9:00 PM	4	7	4	7	22	6	4	3	4	17	39
10:00 PM	4	7	5	2	18	3	1	2	0	6	24
11:00 PM	0	5	0	0	5	3	2	2	1	8	13
Total	47.2%				746	52.8%				833	
1579											

AM% 42.9% **AM Peak** 150 **7:30 am to 8:30 am** **AM P.H.F.** 0.72
PM% 57.1% **PM Peak** 148 **3:45 pm to 4:45 pm** **PM P.H.F.** 0.84





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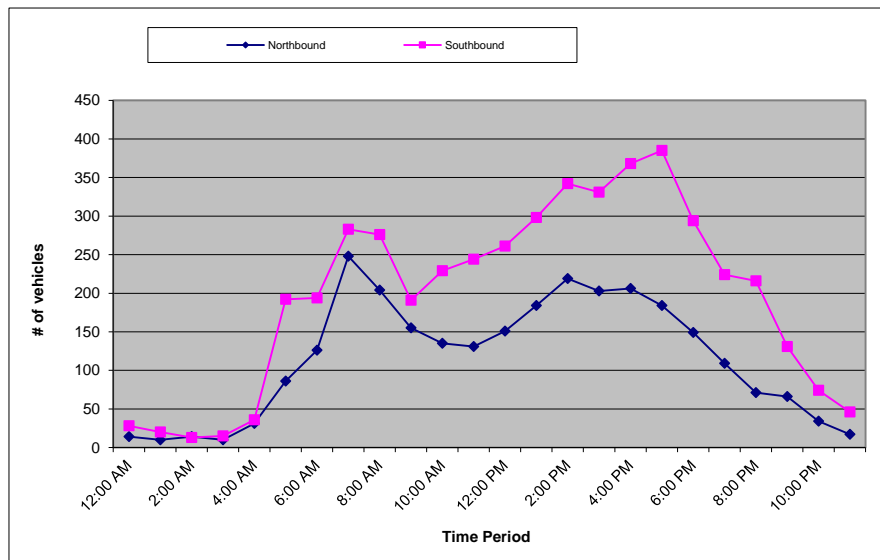
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET S Fowler Ave **LATITUDE** 36.6248933
SEGMENT Merced St. to Fresno St. **LONGITUDE** -119.6833172
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	4	4	3	3	14	9	9	4	6	28	42	
1:00 AM	3	2	3	2	10	8	4	3	5	20	30	
2:00 AM	2	4	1	7	14	2	7	1	3	13	27	
3:00 AM	2	4	2	2	10	2	4	3	6	15	25	
4:00 AM	3	6	7	15	31	4	8	7	17	36	67	
5:00 AM	18	14	27	27	86	37	53	56	46	192	278	
6:00 AM	18	24	39	45	126	38	48	47	61	194	320	
7:00 AM	39	61	71	77	248	70	69	61	83	283	531	
8:00 AM	85	49	37	33	204	89	85	54	48	276	480	
9:00 AM	21	44	47	43	155	38	49	42	62	191	346	
10:00 AM	29	29	35	42	135	61	66	55	47	229	364	
11:00 AM	43	30	29	29	131	67	60	59	58	244	375	
12:00 PM	37	32	40	42	151	72	72	63	54	261	412	
1:00 PM	35	52	53	44	184	84	65	70	79	298	482	
2:00 PM	47	49	54	69	219	82	87	72	101	342	561	
3:00 PM	64	53	41	45	203	84	78	100	69	331	534	
4:00 PM	65	46	49	46	206	94	83	95	96	368	574	
5:00 PM	46	48	42	48	184	94	103	101	87	385	569	
6:00 PM	43	43	35	28	149	83	71	61	79	294	443	
7:00 PM	28	27	20	34	109	48	57	45	74	224	333	
8:00 PM	23	19	14	15	71	52	60	54	50	216	287	
9:00 PM	21	18	11	16	66	32	34	31	34	131	197	
10:00 PM	8	9	8	9	34	20	15	19	20	74	108	
11:00 PM	6	6	2	3	17	10	11	10	15	46	63	
Total	37.0%					2757	63.0%					4691
7448												

AM% 38.7% **AM Peak 600** 7:30 am to 8:30 am **AM P.H.F.** 0.86
PM% 61.3% **PM Peak 577** 4:30 pm to 5:30 pm **PM P.H.F.** 0.96





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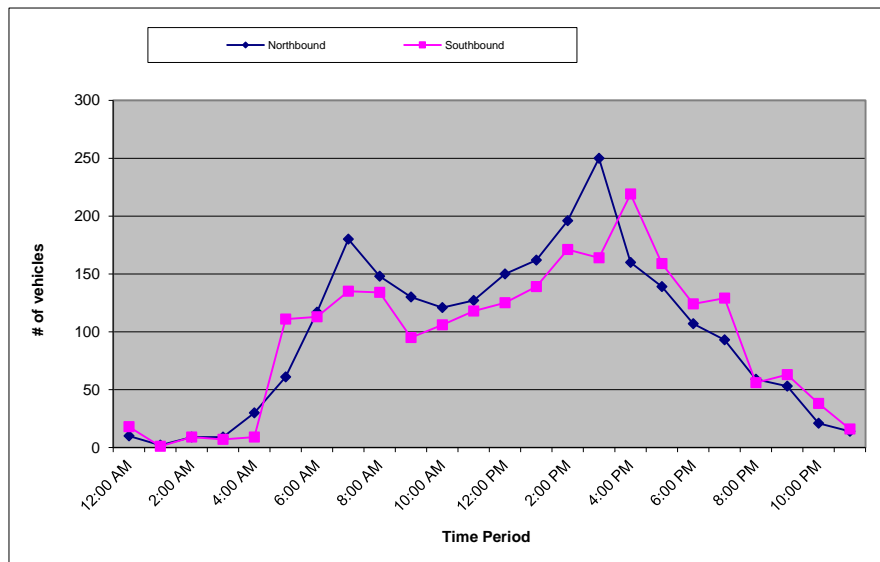
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET S Fowler Ave **LATITUDE** 36.6234529
SEGMENT Fresno St. to South Ave. **LONGITUDE** -119.6823007
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	5	2	1	10	5	4	5	4	18	28
1:00 AM	0	1	0	1	2	1	0	0	0	1	3
2:00 AM	0	6	2	1	9	3	0	5	1	9	18
3:00 AM	0	0	4	5	9	0	1	3	3	7	16
4:00 AM	1	10	11	8	30	3	1	2	3	9	39
5:00 AM	8	12	21	20	61	7	22	34	48	111	172
6:00 AM	32	21	32	32	117	38	26	20	29	113	230
7:00 AM	28	43	61	48	180	41	27	38	29	135	315
8:00 AM	49	35	45	19	148	41	42	24	27	134	282
9:00 AM	25	38	40	27	130	20	17	30	28	95	225
10:00 AM	40	20	30	31	121	24	30	22	30	106	227
11:00 AM	36	23	38	30	127	26	32	36	24	118	245
12:00 PM	33	46	35	36	150	30	33	25	37	125	275
1:00 PM	44	26	41	51	162	39	36	36	28	139	301
2:00 PM	40	44	55	57	196	40	40	50	41	171	367
3:00 PM	61	85	51	53	250	32	35	44	53	164	414
4:00 PM	36	42	43	39	160	57	46	60	56	219	379
5:00 PM	34	39	31	35	139	45	41	40	33	159	298
6:00 PM	37	23	16	31	107	38	30	29	27	124	231
7:00 PM	30	21	30	12	93	29	38	32	30	129	222
8:00 PM	19	17	11	12	59	11	21	17	7	56	115
9:00 PM	11	15	14	13	53	21	10	21	11	63	116
10:00 PM	7	3	5	6	21	14	9	7	8	38	59
11:00 PM	4	1	2	7	14	6	4	4	2	16	30
Total	51.0%				2348	49.0%				2259	4607

AM% 39.1% **AM Peak** 343 **7:30 am to 8:30 am** **AM P.H.F.** 0.87
PM% 60.9% **PM Peak** 416 **2:30 pm to 3:30 pm** **PM P.H.F.** 0.87





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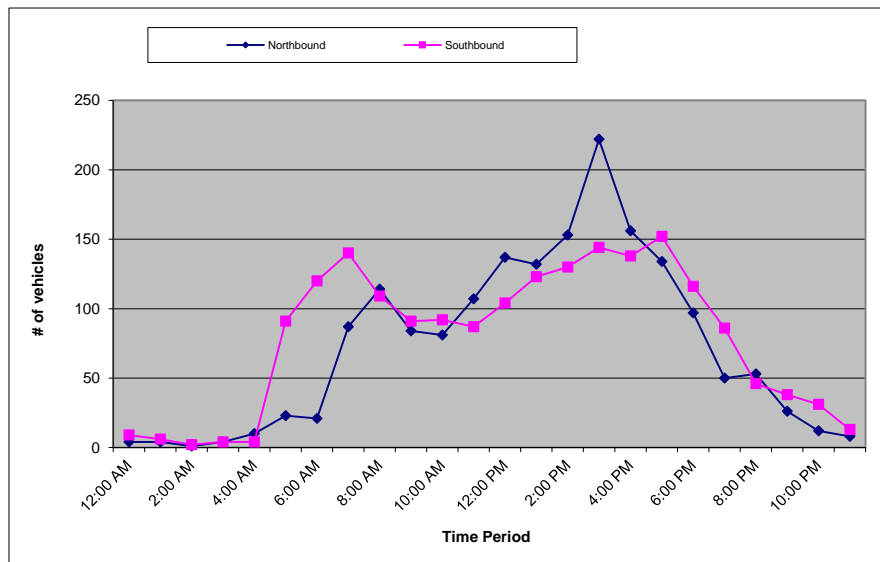
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET S Fowler Ave **LATITUDE** 36.6181089
SEGMENT South Ave to Parlier Ave **LONGITUDE** -119.6823067
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	2	0	2	4	0	2	4	3	9	13
1:00 AM	0	1	2	1	4	1	0	2	3	6	10
2:00 AM	1	0	0	0	1	0	1	1	0	2	3
3:00 AM	1	1	2	0	4	1	1	1	1	4	8
4:00 AM	0	0	3	7	10	0	3	0	1	4	14
5:00 AM	4	9	5	5	23	4	8	31	48	91	114
6:00 AM	5	1	3	12	21	38	23	24	35	120	141
7:00 AM	13	13	30	31	87	32	52	31	25	140	227
8:00 AM	39	25	35	15	114	32	28	17	32	109	223
9:00 AM	19	19	26	20	84	20	21	27	23	91	175
10:00 AM	24	17	19	21	81	19	19	30	24	92	173
11:00 AM	19	25	31	32	107	23	17	20	27	87	194
12:00 PM	35	34	32	36	137	20	26	24	34	104	241
1:00 PM	26	34	37	35	132	28	32	29	34	123	255
2:00 PM	36	31	46	40	153	34	44	24	28	130	283
3:00 PM	56	75	53	38	222	30	45	45	24	144	366
4:00 PM	43	42	28	43	156	40	40	25	33	138	294
5:00 PM	30	38	52	14	134	35	37	38	42	152	286
6:00 PM	28	23	15	31	97	31	28	33	24	116	213
7:00 PM	8	4	19	19	50	17	27	22	20	86	136
8:00 PM	16	16	11	10	53	13	15	9	9	46	99
9:00 PM	4	2	10	10	26	9	15	9	5	38	64
10:00 PM	2	4	4	2	12	9	12	8	2	31	43
11:00 PM	3	1	3	1	8	2	4	4	3	13	21
Total	47.8%				1720	52.2%				1876	3596

AM% 36.0% **AM Peak** 253 **7:15 am to 8:15 am** **AM P.H.F.** 0.89
PM% 64.0% **PM Peak** 372 **2:45 pm to 3:45 pm** **PM P.H.F.** 0.78





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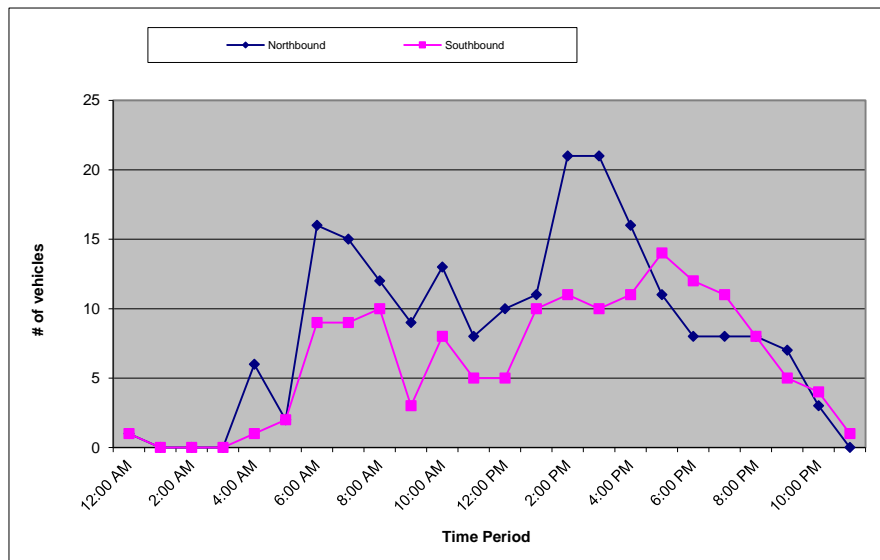
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Armstrong Ave **LATITUDE** 36.647527
SEGMENT Lincoln Ave to Clayton Ave **LONGITUDE** -119.6730899
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	1	0	0	1	0	0	1	0	1	2	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	2	0	3	1	6	1	0	0	0	1	7	
5:00 AM	0	1	1	0	2	0	0	2	0	2	4	
6:00 AM	0	2	8	6	16	2	0	4	3	9	25	
7:00 AM	1	3	6	5	15	0	3	3	3	9	24	
8:00 AM	2	9	1	0	12	4	3	1	2	10	22	
9:00 AM	3	1	2	3	9	1	1	1	0	3	12	
10:00 AM	5	2	2	4	13	1	1	3	3	8	21	
11:00 AM	1	3	3	1	8	0	2	0	3	5	13	
12:00 PM	0	1	6	3	10	0	3	1	1	5	15	
1:00 PM	2	2	6	1	11	3	6	1	0	10	21	
2:00 PM	11	3	4	3	21	5	2	3	1	11	32	
3:00 PM	1	5	11	4	21	1	0	4	5	10	31	
4:00 PM	3	4	5	4	16	2	5	2	2	11	27	
5:00 PM	4	4	1	2	11	5	3	3	3	14	25	
6:00 PM	4	1	0	3	8	4	1	4	3	12	20	
7:00 PM	1	3	2	2	8	2	4	2	3	11	19	
8:00 PM	4	1	0	3	8	3	0	2	3	8	16	
9:00 PM	1	0	3	3	7	3	0	0	2	5	12	
10:00 PM	0	1	0	2	3	1	2	1	0	4	7	
11:00 PM	0	0	0	0	0	1	0	0	0	1	1	
Total	57.9%					206	42.1%					150
356												

AM% 36.5% **AM Peak 28** **6:30 am to 7:30 am** **AM P.H.F. 0.58**
PM% 63.5% **PM Peak 32** **2:00 pm to 3:00 pm** **PM P.H.F. 0.50**





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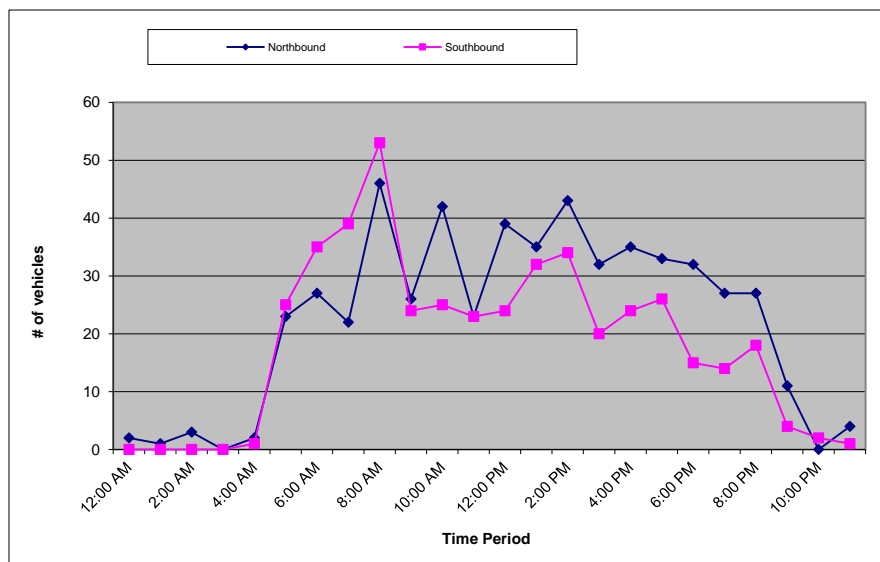
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Armstrong Ave **LATITUDE** 36.6373469
SEGMENT Clayton Ave to Adams Ave **LONGITUDE** -119.6732243
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	1	1	0	0	2	0	0	0	0	0	2	
1:00 AM	0	0	0	1	1	0	0	0	0	0	1	
2:00 AM	0	0	2	1	3	0	0	0	0	0	3	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	2	0	0	0	2	0	0	1	0	1	3	
5:00 AM	0	7	7	9	23	6	3	5	11	25	48	
6:00 AM	1	2	15	9	27	2	7	23	3	35	62	
7:00 AM	6	4	5	7	22	6	7	17	9	39	61	
8:00 AM	29	9	6	2	46	34	6	9	4	53	99	
9:00 AM	3	15	6	2	26	2	15	2	5	24	50	
10:00 AM	9	4	18	11	42	4	5	12	4	25	67	
11:00 AM	4	1	11	7	23	2	2	11	8	23	46	
12:00 PM	9	14	5	11	39	3	6	5	10	24	63	
1:00 PM	2	12	8	13	35	11	9	9	3	32	67	
2:00 PM	15	13	7	8	43	11	11	4	8	34	77	
3:00 PM	12	6	7	7	32	6	8	2	4	20	52	
4:00 PM	8	10	8	9	35	6	3	11	4	24	59	
5:00 PM	10	13	5	5	33	9	5	3	9	26	59	
6:00 PM	6	10	9	7	32	4	4	6	1	15	47	
7:00 PM	9	3	10	5	27	5	4	2	3	14	41	
8:00 PM	9	3	4	11	27	3	3	4	8	18	45	
9:00 PM	2	4	2	3	11	0	1	1	2	4	15	
10:00 PM	0	0	0	0	0	1	0	0	1	2	2	
11:00 PM	0	2	1	1	4	1	0	0	0	1	5	
Total	54.9%					535	45.1%					439
974												

AM% 45.4% **AM Peak** 116 **7:30 am to 8:30 am** **AM P.H.F.** 0.46
PM% 54.6% **PM Peak** 83 **1:30 pm to 2:30 pm** **PM P.H.F.** 0.80





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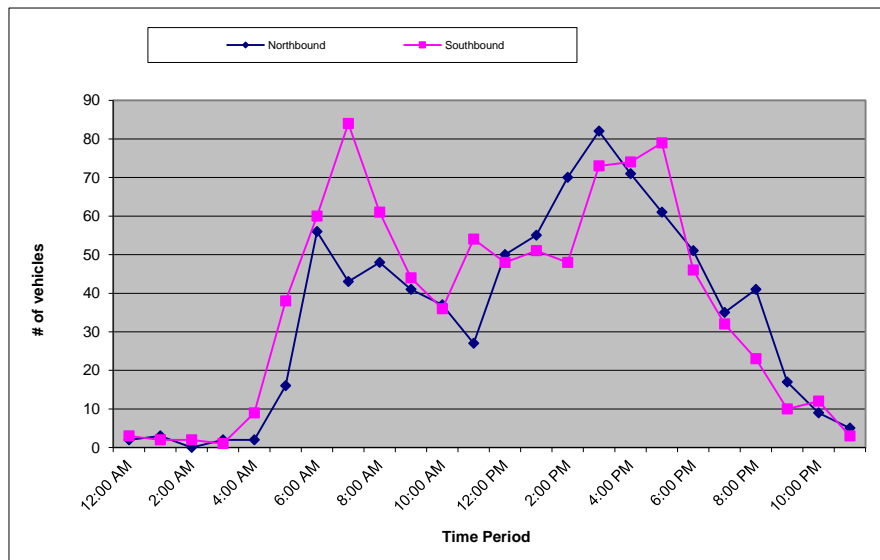
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.6474963
SEGMENT Lincoln Ave to Clayton Ave **LONGITUDE** -119.6641422
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	0	0	0	2	0	1	2	0	3	5
1:00 AM	0	2	1	0	3	0	1	1	0	2	5
2:00 AM	0	0	0	0	0	2	0	0	0	2	2
3:00 AM	0	0	2	0	2	1	0	0	0	1	3
4:00 AM	0	1	1	0	2	1	0	3	5	9	11
5:00 AM	2	3	5	6	16	7	9	12	10	38	54
6:00 AM	12	11	16	17	56	8	11	24	17	60	116
7:00 AM	8	11	13	11	43	18	17	19	30	84	127
8:00 AM	17	15	6	10	48	24	12	13	12	61	109
9:00 AM	12	9	10	10	41	9	13	13	9	44	85
10:00 AM	11	7	9	10	37	5	12	12	7	36	73
11:00 AM	3	10	4	10	27	10	12	23	9	54	81
12:00 PM	15	16	6	13	50	16	10	10	12	48	98
1:00 PM	14	16	11	14	55	13	10	13	15	51	106
2:00 PM	22	20	10	18	70	12	10	15	11	48	118
3:00 PM	18	14	29	21	82	15	15	25	18	73	155
4:00 PM	22	17	15	17	71	24	10	24	16	74	145
5:00 PM	21	16	10	14	61	23	18	18	20	79	140
6:00 PM	14	10	14	13	51	15	14	7	10	46	97
7:00 PM	10	9	8	8	35	9	14	1	8	32	67
8:00 PM	14	11	8	8	41	6	4	3	10	23	64
9:00 PM	2	6	4	5	17	4	2	4	0	10	27
10:00 PM	4	1	3	1	9	3	6	2	1	12	21
11:00 PM	3	0	1	1	5	1	2	0	0	3	8
Total	48.0%				824	52.0%				893	
1717											

AM% 39.1% **AM Peak** 142 **7:15 am to 8:15 am** **AM P.H.F.** 0.87
PM% 60.9% **PM Peak** 168 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.78





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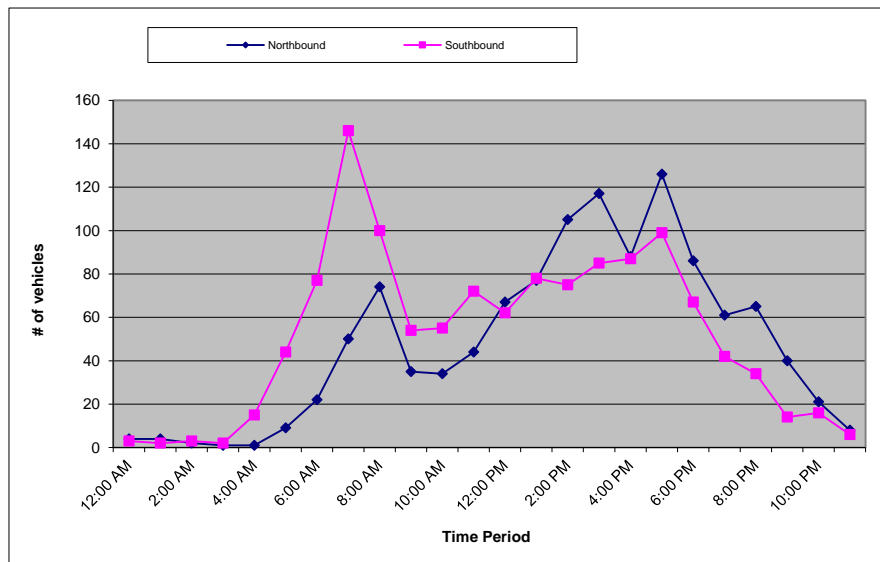
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.6379797
SEGMENT Clayton Ave to Adams Ave **LONGITUDE** -119.6642872
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	2	0	1	1	4	0	2	1	0	3	7
1:00 AM	1	2	1	0	4	0	1	1	0	2	6
2:00 AM	1	0	1	0	2	1	0	1	1	3	5
3:00 AM	0	0	1	0	1	1	0	1	0	2	3
4:00 AM	0	0	1	0	1	2	2	4	7	15	16
5:00 AM	0	2	4	3	9	9	12	10	13	44	53
6:00 AM	3	3	8	8	22	11	14	24	28	77	99
7:00 AM	6	12	13	19	50	29	29	31	57	146	196
8:00 AM	28	24	10	12	74	42	29	14	15	100	174
9:00 AM	12	12	5	6	35	12	13	14	15	54	89
10:00 AM	9	6	6	13	34	4	17	19	15	55	89
11:00 AM	3	21	6	14	44	20	16	21	15	72	116
12:00 PM	20	19	14	14	67	18	9	18	17	62	129
1:00 PM	15	20	17	25	77	18	13	25	22	78	155
2:00 PM	45	24	12	24	105	28	9	21	17	75	180
3:00 PM	28	25	29	35	117	15	22	26	22	85	202
4:00 PM	27	21	21	19	88	23	13	28	23	87	175
5:00 PM	40	41	15	30	126	21	23	30	25	99	225
6:00 PM	19	21	24	22	86	19	19	10	19	67	153
7:00 PM	14	14	15	18	61	15	15	6	6	42	103
8:00 PM	17	17	20	11	65	12	7	7	8	34	99
9:00 PM	9	13	8	10	40	5	4	5	0	14	54
10:00 PM	7	6	5	3	21	4	8	4	0	16	37
11:00 PM	2	1	3	2	8	2	2	1	1	6	14
Total	48.0%				1141	52.0%				1238	2379

AM% 35.9% **AM Peak** 243 **7:30 am to 8:30 am** **AM P.H.F.** 0.80
PM% 64.1% **PM Peak** 225 **5:00 pm to 6:00 pm** **PM P.H.F.** 0.88





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24 Hour Volume Report

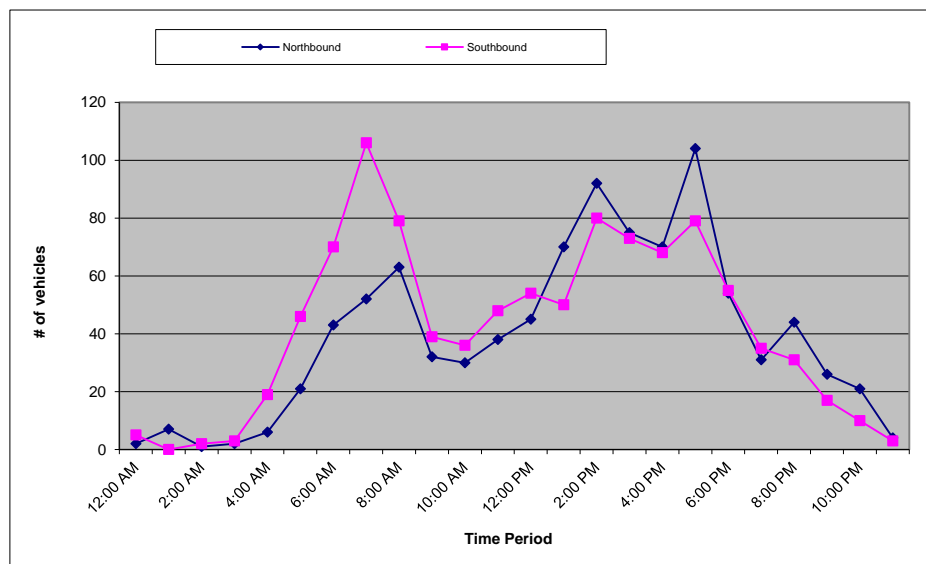
Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave
SEGMENT Adams Ave to Walter Ave
COLLECTION DATE Wednesday, May 12, 2021
NUMBER OF LANES 2

LATITUDE 36.6323251
LONGITUDE -119.6642948
WEATHER Clear

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	0	1	0	2	1	3	1	0	5	7
1:00 AM	2	4	1	0	7	0	0	0	0	0	7
2:00 AM	0	0	1	0	1	1	0	0	1	2	3
3:00 AM	2	0	0	0	2	2	0	1	0	3	5
4:00 AM	1	1	3	1	6	2	3	5	9	19	25
5:00 AM	5	3	6	7	21	8	15	11	12	46	67
6:00 AM	8	13	11	11	43	10	14	19	27	70	113
7:00 AM	7	9	16	20	52	21	27	21	37	106	158
8:00 AM	28	19	3	13	63	32	25	9	13	79	142
9:00 AM	7	11	7	7	32	10	11	10	8	39	71
10:00 AM	8	8	5	9	30	6	7	13	10	36	66
11:00 AM	5	13	8	12	38	8	13	14	13	48	86
12:00 PM	11	11	8	15	45	9	17	17	11	54	99
1:00 PM	16	18	19	17	70	13	9	13	15	50	120
2:00 PM	27	20	26	19	92	27	16	19	18	80	172
3:00 PM	17	19	22	17	75	16	19	23	15	73	148
4:00 PM	17	21	12	20	70	12	12	27	17	68	138
5:00 PM	36	25	18	25	104	21	20	15	23	79	183
6:00 PM	14	14	18	8	54	15	15	10	15	55	109
7:00 PM	9	11	6	5	31	12	8	8	7	35	66
8:00 PM	15	14	9	6	44	5	12	4	10	31	75
9:00 PM	4	10	7	5	26	4	4	8	1	17	43
10:00 PM	5	5	7	4	21	3	6	0	1	10	31
11:00 PM	1	0	3	0	4	0	0	2	1	3	7
Total	48.1%				933	51.9%				1008	
1941											

AM% 38.6% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 61.4% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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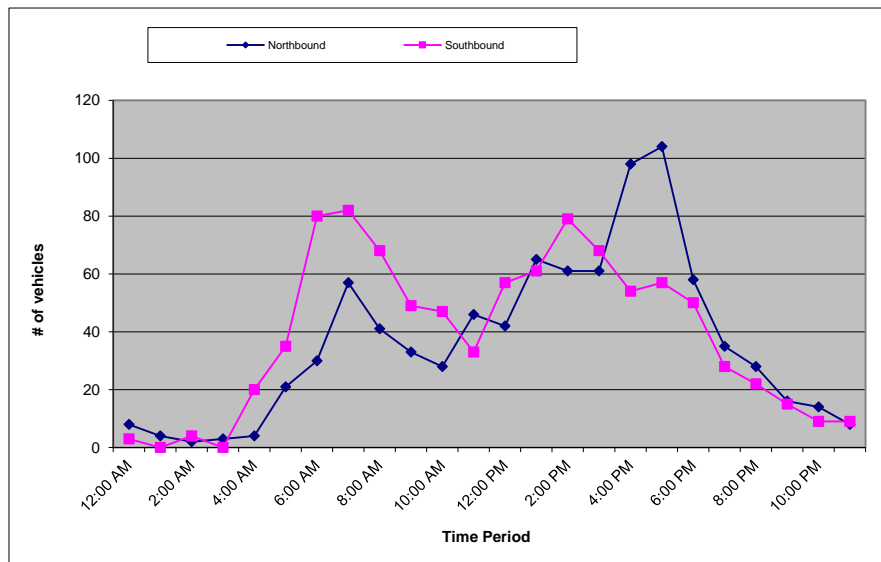
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.630008
SEGMENT Walter Ave to Mott Ave **LONGITUDE** -119.6643529
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	2	3	2	8	0	3	0	0	3	11
1:00 AM	0	2	1	1	4	0	0	0	0	0	4
2:00 AM	0	1	0	1	2	1	0	1	2	4	6
3:00 AM	0	2	0	1	3	0	0	0	0	0	3
4:00 AM	0	4	0	0	4	0	4	5	11	20	24
5:00 AM	3	2	9	7	21	10	13	6	6	35	56
6:00 AM	4	8	14	4	30	10	15	24	31	80	110
7:00 AM	16	5	17	19	57	11	22	22	27	82	139
8:00 AM	14	10	9	8	41	17	28	15	8	68	109
9:00 AM	8	10	6	9	33	10	13	13	13	49	82
10:00 AM	10	7	4	7	28	11	12	12	12	47	75
11:00 AM	11	9	14	12	46	10	7	7	9	33	79
12:00 PM	9	7	13	13	42	11	15	13	18	57	99
1:00 PM	12	15	15	23	65	16	18	13	14	61	126
2:00 PM	17	13	16	15	61	37	14	15	13	79	140
3:00 PM	10	11	28	12	61	16	14	17	21	68	129
4:00 PM	27	21	33	17	98	14	16	12	12	54	152
5:00 PM	39	22	26	17	104	16	17	9	15	57	161
6:00 PM	17	21	6	14	58	12	12	10	16	50	108
7:00 PM	8	8	9	10	35	7	6	10	5	28	63
8:00 PM	9	10	4	5	28	10	4	3	5	22	50
9:00 PM	6	2	5	3	16	4	3	6	2	15	31
10:00 PM	1	4	7	2	14	3	3	2	1	9	23
11:00 PM	3	1	3	1	8	2	2	0	5	9	17
Total	48.2%				867	51.8%				930	
1797											

AM% 38.8% **AM Peak** 154 **7:30 am to 8:30 am** **AM P.H.F.** 0.84
PM% 61.2% **PM Peak** 168 **4:30 pm to 5:30 pm** **PM P.H.F.** 0.76





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Prepared For:

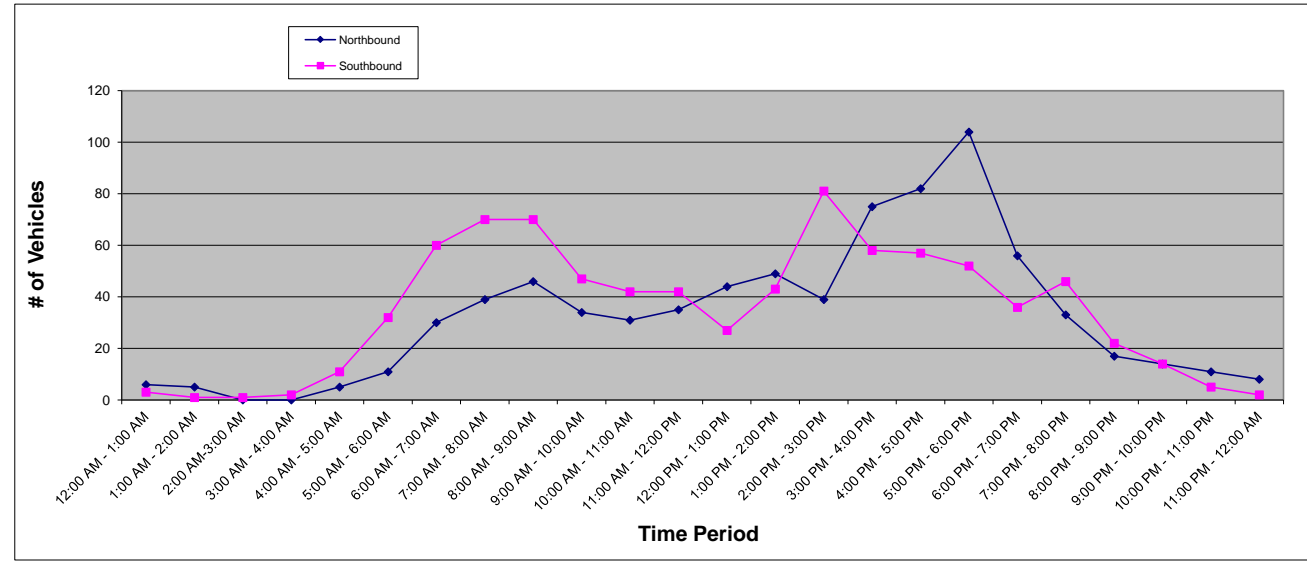
City of Fowler
128 S 5th St
Fowler, CA 93625

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Table with survey details: Description (Temperance Ave, Mott Ave to South Ave), Survey Date (Thursday, April 29, 2021), Latitude (36.621288), Longitude (-119.6643948), Number of Lanes (2), Total Volume (1598), HV Percentage (5.1%), AM Peak Period (7:15am-8:15am), AM Peak Volume (147), AM PHF (0.62), PM Peak Period (4:30pm-5:30pm), PM Peak Volume (158), PM PHF (0.90).

- Class 1 - Motorcycles, 2 axles
Class 2 - Passenger cars, 2 axles
Class 3 - Pickup trucks, vans, 2 axles
Class 4 - Busses
Class 5 - Single unit, 2 axle, 6 tires
Class 6 - Single unit truck, 3 axles
Class 7 - Single unit, 4 axles
Class 8 - Double unit, < 5 axles
Class 9 - Double unit, 5 axles
Class 10 - Double unit, > 5 axles
Class 11 - Multi unit, 5 axles
Class 12 - Multi unit, 6 axles
Class 13 - Multi unit, > 6 axles
Class 14 - Unclassifiable

- 1st First 15 minute interval
2nd Second 15 minute interval
3rd Third 15 minute interval
4th Fourth 15 minute interval
T Hourly Total



Northbound traffic data table with columns for Hour, Class 1-14, and Total. Includes summary statistics for AM and PM peak periods.

Southbound traffic data table with columns for Hour, Class 1-14, and Total. Includes summary statistics for AM and PM peak periods.



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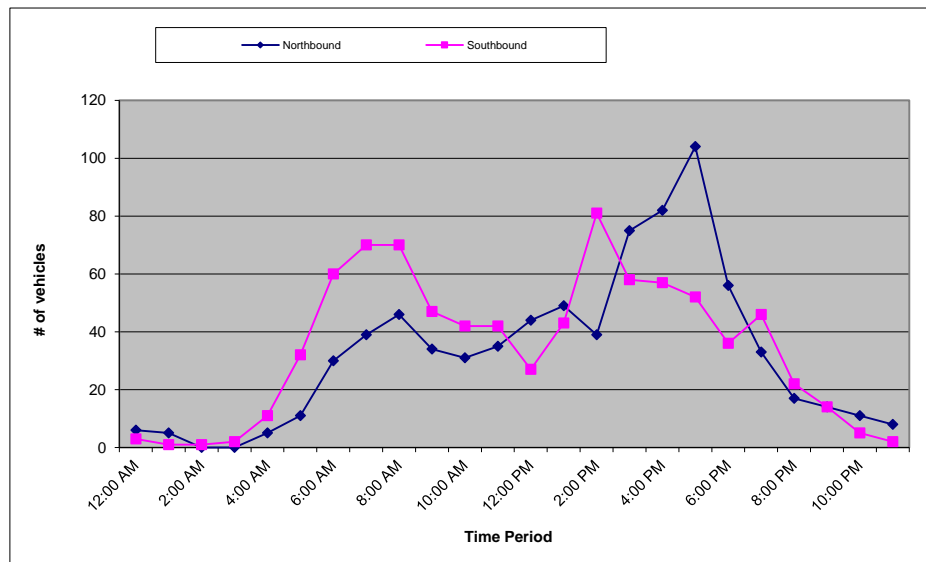
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.6212878
SEGMENT Mott Ave to South Ave **LONGITUDE** -119.6643948
COLLECTION DATE Wednesday, May 12, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	3	0	0	6	0	1	1	1	3	9
1:00 AM	1	3	1	0	5	0	0	1	0	1	6
2:00 AM	0	0	0	0	0	1	0	0	0	1	1
3:00 AM	0	0	0	0	0	0	0	1	1	2	2
4:00 AM	0	1	3	1	5	0	3	4	4	11	16
5:00 AM	0	3	1	7	11	7	7	6	12	32	43
6:00 AM	12	4	11	3	30	7	10	18	25	60	90
7:00 AM	9	10	12	8	39	12	18	21	19	70	109
8:00 AM	23	13	6	4	46	36	11	9	14	70	116
9:00 AM	6	6	8	14	34	15	13	9	10	47	81
10:00 AM	10	9	7	5	31	14	11	9	8	42	73
11:00 AM	5	8	9	13	35	12	9	10	11	42	77
12:00 PM	11	9	15	9	44	4	5	10	8	27	71
1:00 PM	14	13	6	16	49	12	10	12	9	43	92
2:00 PM	7	9	10	13	39	35	16	14	16	81	120
3:00 PM	23	9	27	16	75	7	12	15	24	58	133
4:00 PM	22	13	26	21	82	16	14	18	9	57	139
5:00 PM	30	29	25	20	104	11	14	16	11	52	156
6:00 PM	15	15	20	6	56	12	12	6	6	36	92
7:00 PM	10	10	5	8	33	11	21	8	6	46	79
8:00 PM	4	5	3	5	17	7	4	7	4	22	39
9:00 PM	5	5	2	2	14	5	5	3	1	14	28
10:00 PM	1	4	5	1	11	3	1	1	0	5	16
11:00 PM	2	3	3	0	8	0	1	0	1	2	10
Total	48.4%				774	51.6%				824	1598

AM% 39.0% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 61.0% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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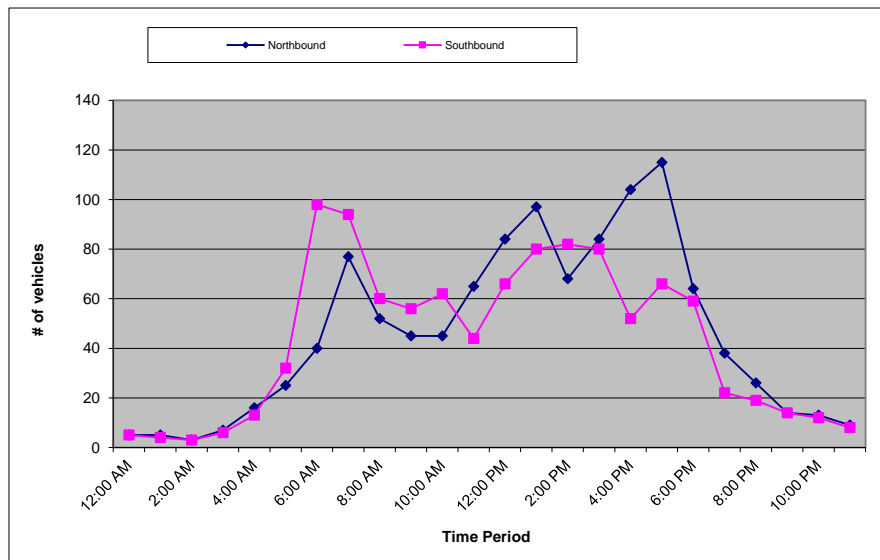
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.6186401
SEGMENT S of South Ave **LONGITUDE** -119.6643934
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	2	2	1	5	1	4	0	0	5	10
1:00 AM	2	2	1	0	5	0	1	3	0	4	9
2:00 AM	0	2	0	1	3	2	0	1	0	3	6
3:00 AM	0	2	2	3	7	1	3	1	1	6	13
4:00 AM	2	6	2	6	16	0	4	1	8	13	29
5:00 AM	3	4	11	7	25	9	7	8	8	32	57
6:00 AM	9	9	14	8	40	13	13	28	44	98	138
7:00 AM	17	7	24	29	77	22	29	15	28	94	171
8:00 AM	19	17	8	8	52	17	21	16	6	60	112
9:00 AM	13	18	6	8	45	18	9	16	13	56	101
10:00 AM	12	9	12	12	45	15	14	14	19	62	107
11:00 AM	17	12	21	15	65	14	11	7	12	44	109
12:00 PM	17	18	30	19	84	15	22	11	18	66	150
1:00 PM	19	34	18	26	97	22	19	20	19	80	177
2:00 PM	25	15	13	15	68	26	16	21	19	82	150
3:00 PM	16	18	31	19	84	18	16	21	25	80	164
4:00 PM	27	19	36	22	104	15	14	14	9	52	156
5:00 PM	46	31	22	16	115	17	19	12	18	66	181
6:00 PM	21	20	10	13	64	14	15	15	15	59	123
7:00 PM	10	8	10	10	38	7	6	8	1	22	60
8:00 PM	10	8	4	4	26	5	6	2	6	19	45
9:00 PM	4	2	4	4	14	5	3	4	2	14	28
10:00 PM	1	2	6	4	13	3	4	2	3	12	25
11:00 PM	4	2	3	0	9	1	3	0	4	8	17
Total	51.5%				1101	48.5%				1037	2138

AM% 40.3% **AM Peak** 171 **7:00 am to 8:00 am** **AM P.H.F.** 0.75
PM% 59.7% **PM Peak** 194 **4:30 pm to 5:30 pm** **PM P.H.F.** 0.77





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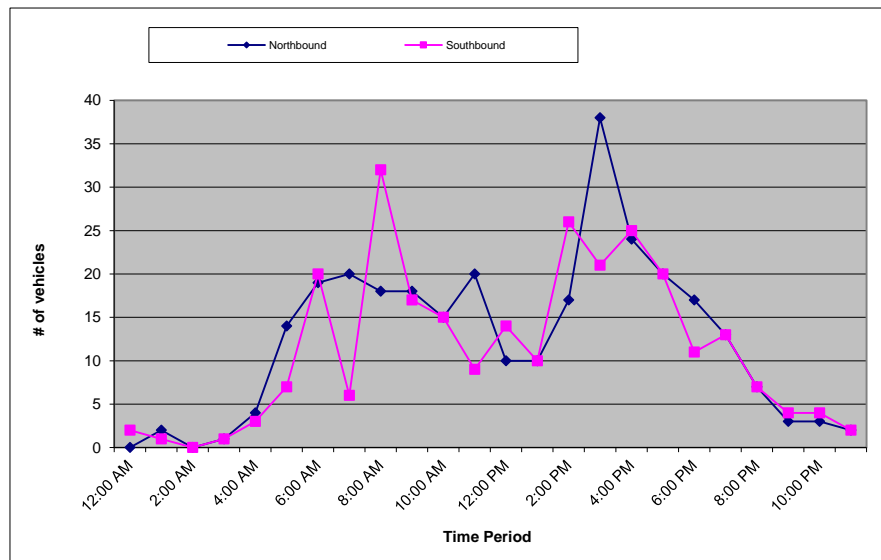
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Temperance Ave **LATITUDE** 36.603889
SEGMENT Manning Ave to Springfield Ave **LONGITUDE** -119.6643958
COLLECTION DATE Wednesday, April 28, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	2	0	0	2	2	
1:00 AM	2	0	0	0	2	1	0	0	0	1	3	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	1	1	0	1	0	0	1	2	
4:00 AM	1	0	1	2	4	0	0	1	2	3	7	
5:00 AM	1	4	7	2	14	1	1	2	3	7	21	
6:00 AM	3	6	4	6	19	5	5	7	3	20	39	
7:00 AM	6	4	2	8	20	1	0	4	1	6	26	
8:00 AM	5	6	2	5	18	8	9	6	9	32	50	
9:00 AM	7	5	1	5	18	4	6	2	5	17	35	
10:00 AM	4	3	6	2	15	4	8	3	0	15	30	
11:00 AM	7	0	5	8	20	2	3	1	3	9	29	
12:00 PM	5	2	2	1	10	5	3	1	5	14	24	
1:00 PM	0	4	5	1	10	5	1	1	3	10	20	
2:00 PM	3	3	4	7	17	7	7	5	7	26	43	
3:00 PM	8	13	14	3	38	4	5	6	6	21	59	
4:00 PM	6	4	5	9	24	7	4	5	9	25	49	
5:00 PM	4	9	5	2	20	8	7	2	3	20	40	
6:00 PM	3	4	6	4	17	3	4	2	2	11	28	
7:00 PM	2	5	3	3	13	3	2	5	3	13	26	
8:00 PM	3	3	0	1	7	1	1	5	0	7	14	
9:00 PM	1	1	0	1	3	2	1	1	0	4	7	
10:00 PM	0	0	1	2	3	0	4	0	0	4	7	
11:00 PM	0	0	1	1	2	0	1	0	1	2	4	
Total	52.2%					295	47.8%					270
565												

AM% 43.2% **AM Peak** 50 **8:00 am to 9:00 am** **AM P.H.F.** 0.83
PM% 56.8% **PM Peak** 64 **2:45 pm to 3:45 pm** **PM P.H.F.** 0.80





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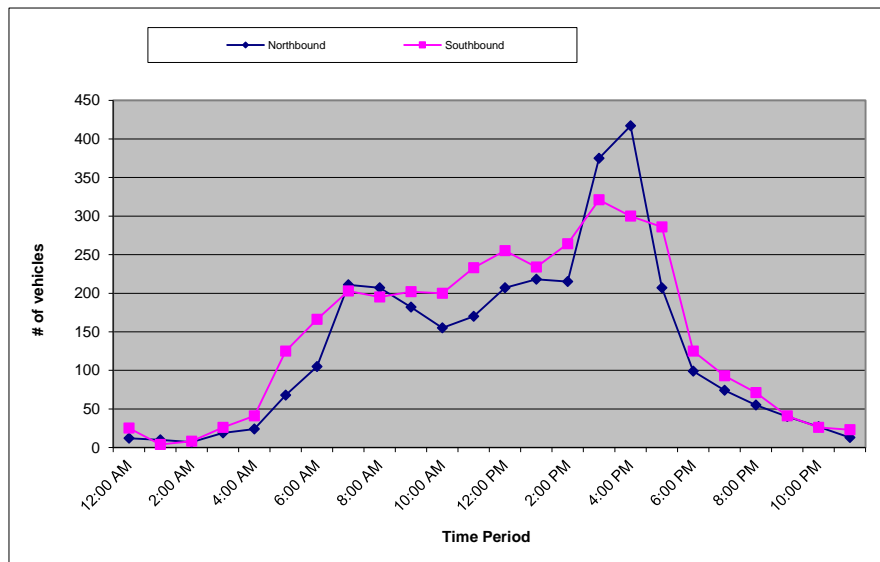
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6616671
SEGMENT American Ave to Lincoln Ave **LONGITUDE** -119.7165383
COLLECTION DATE Thursday, May 13, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	2	3	3	12	8	5	4	8	25	37
1:00 AM	1	2	3	4	10	2	1	1	0	4	14
2:00 AM	1	2	1	3	7	3	1	1	3	8	15
3:00 AM	1	2	7	9	19	7	5	7	7	26	45
4:00 AM	5	5	8	6	24	6	2	15	18	41	65
5:00 AM	9	21	22	16	68	14	26	39	46	125	193
6:00 AM	18	20	30	37	105	26	45	46	49	166	271
7:00 AM	47	57	41	66	211	34	40	49	80	203	414
8:00 AM	59	59	54	35	207	75	35	32	53	195	402
9:00 AM	42	49	46	45	182	54	49	59	40	202	384
10:00 AM	33	39	35	48	155	52	51	51	46	200	355
11:00 AM	31	52	44	43	170	60	51	54	68	233	403
12:00 PM	54	48	54	51	207	78	75	52	50	255	462
1:00 PM	53	46	58	61	218	55	36	64	79	234	452
2:00 PM	56	44	49	66	215	76	53	70	65	264	479
3:00 PM	70	87	102	116	375	70	67	94	90	321	696
4:00 PM	152	115	91	59	417	75	72	89	64	300	717
5:00 PM	72	51	40	44	207	92	86	64	44	286	493
6:00 PM	29	22	27	21	99	41	37	27	20	125	224
7:00 PM	18	12	21	23	74	25	25	20	23	93	167
8:00 PM	16	13	18	8	55	14	27	19	11	71	126
9:00 PM	11	13	8	8	40	13	11	12	5	41	81
10:00 PM	9	6	6	6	27	7	7	5	7	26	53
11:00 PM	3	5	3	2	13	9	7	2	5	23	36
Total	47.3%				3117	52.7%				3467	6584

AM% 39.5% **AM Peak** 467 **7:15 am to 8:15 am** **AM P.H.F.** 0.80
PM% 60.5% **PM Peak** 816 **3:30 pm to 4:30 pm** **PM P.H.F.** 0.90





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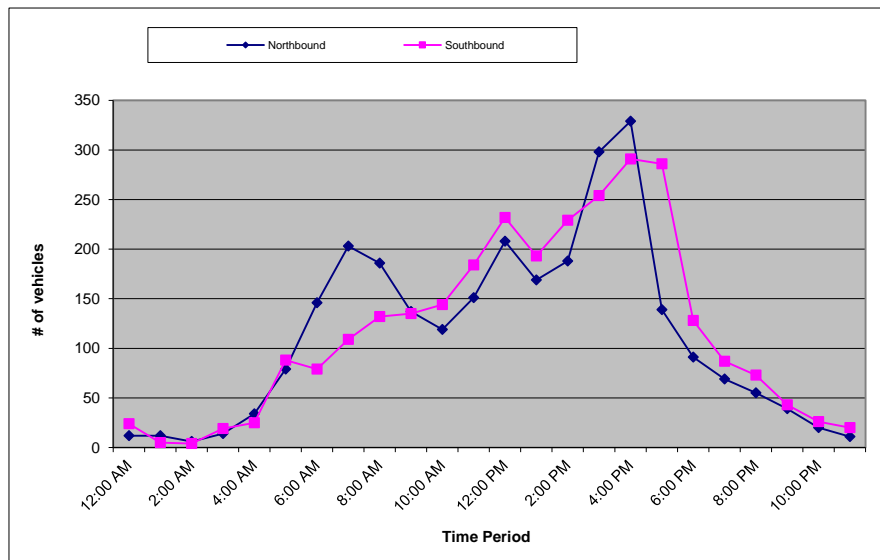
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6427898
SEGMENT Lincoln Ave to Clayton Ave **LONGITUDE** -119.6958255
COLLECTION DATE Thursday, May 13, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	3	2	4	12	8	4	5	7	24	36
1:00 AM	1	3	4	4	12	1	2	1	1	5	17
2:00 AM	2	2	1	1	6	1	2	0	1	4	10
3:00 AM	1	0	5	8	14	4	4	4	7	19	33
4:00 AM	8	5	9	12	34	3	3	11	8	25	59
5:00 AM	8	23	24	24	79	10	17	33	28	88	167
6:00 AM	30	37	35	44	146	18	20	22	19	79	225
7:00 AM	43	50	47	63	203	9	23	30	47	109	312
8:00 AM	59	57	41	29	186	42	35	21	34	132	318
9:00 AM	30	38	36	33	137	35	28	39	33	135	272
10:00 AM	27	34	22	36	119	33	35	42	34	144	263
11:00 AM	32	37	38	44	151	48	38	48	50	184	335
12:00 PM	43	52	53	60	208	87	57	51	37	232	440
1:00 PM	42	39	48	40	169	39	42	52	60	193	362
2:00 PM	56	35	38	59	188	54	60	61	54	229	417
3:00 PM	58	46	83	111	298	49	47	90	68	254	552
4:00 PM	121	95	64	49	329	81	65	85	60	291	620
5:00 PM	43	39	25	32	139	91	87	65	43	286	425
6:00 PM	30	17	26	18	91	38	33	34	23	128	219
7:00 PM	17	12	19	21	69	23	24	19	21	87	156
8:00 PM	12	17	17	9	55	16	24	21	12	73	128
9:00 PM	12	12	8	7	39	13	13	13	4	43	82
10:00 PM	4	4	7	5	20	8	4	5	9	26	46
11:00 PM	1	4	4	2	11	8	3	2	7	20	31
Total	49.1%				2715	50.9%				2810	5525

AM% 37.0% **AM Peak** 335 **11:00 am to 12:00 pm** **AM P.H.F.** 0.89
PM% 63.0% **PM Peak** 714 **3:30 pm to 4:30 pm** **PM P.H.F.** 0.88





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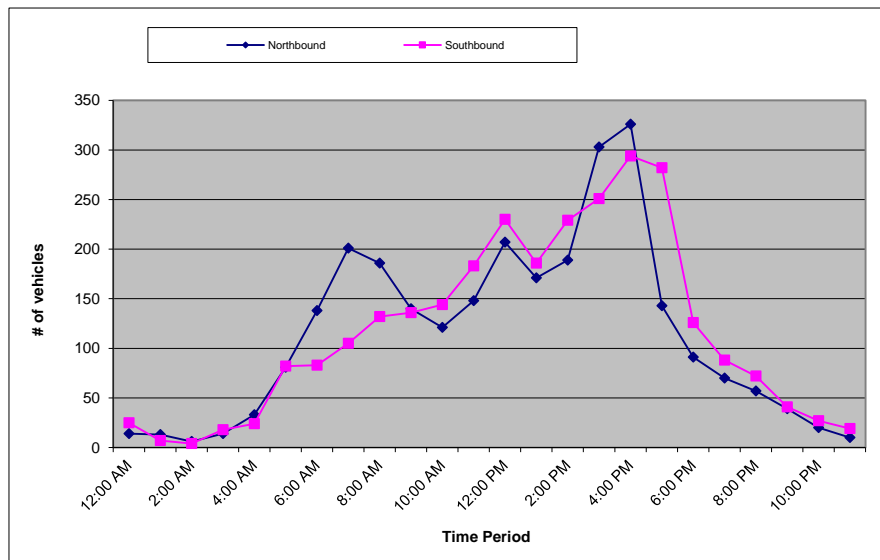
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6404514
SEGMENT Clayton Ave to Adams Ave **LONGITUDE** -119.6932452
COLLECTION DATE Thursday, May 13, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	3	2	6	14	8	3	6	8	25	39
1:00 AM	1	3	4	5	13	1	4	1	1	7	20
2:00 AM	2	2	1	1	6	1	2	0	1	4	10
3:00 AM	1	0	5	8	14	4	3	3	8	18	32
4:00 AM	8	5	8	12	33	3	3	10	8	24	57
5:00 AM	9	23	25	24	81	9	15	32	26	82	163
6:00 AM	30	33	33	42	138	20	20	20	23	83	221
7:00 AM	43	50	44	64	201	8	22	30	45	105	306
8:00 AM	57	59	40	30	186	41	35	23	33	132	318
9:00 AM	30	42	35	33	140	37	27	40	32	136	276
10:00 AM	29	35	20	37	121	31	36	44	33	144	265
11:00 AM	30	39	36	43	148	50	37	47	49	183	331
12:00 PM	41	53	54	59	207	84	58	50	38	230	437
1:00 PM	41	40	50	40	171	37	41	51	57	186	357
2:00 PM	59	31	37	62	189	55	59	62	53	229	418
3:00 PM	61	46	87	109	303	48	49	90	64	251	554
4:00 PM	116	95	65	50	326	82	68	85	59	294	620
5:00 PM	46	40	27	30	143	86	87	64	45	282	425
6:00 PM	29	17	27	18	91	37	33	33	23	126	217
7:00 PM	18	11	22	19	70	23	24	20	21	88	158
8:00 PM	11	18	17	11	57	16	25	20	11	72	129
9:00 PM	13	11	8	7	39	13	13	13	2	41	80
10:00 PM	4	4	7	5	20	9	4	5	9	27	47
11:00 PM	1	4	3	2	10	7	3	2	7	19	29
Total	49.4%				2721	50.6%				2788	5509

AM% 37.0% **AM Peak** 331 **11:00 am to 12:00 pm** **AM P.H.F.** 0.90
PM% 63.0% **PM Peak** 711 **3:30 pm to 4:30 pm** **PM P.H.F.** 0.90





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24 Hour Volume Report

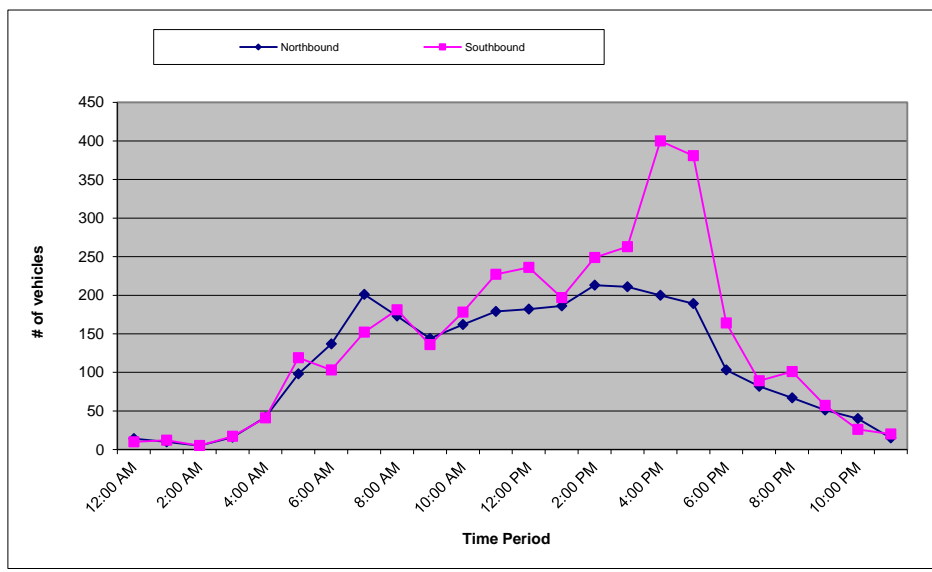
Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd
SEGMENT Adams Ave to Merced St
COLLECTION DATE Tuesday, May 25, 2021
NUMBER OF LANES 4

LATITUDE 36.6318681
LONGITUDE -119.6839348
WEATHER Clear

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	6	2	2	14	3	1	3	3	10	24
1:00 AM	1	3	4	2	10	3	4	2	3	12	22
2:00 AM	0	3	1	1	5	1	1	1	2	5	10
3:00 AM	3	2	3	8	16	0	3	1	13	17	33
4:00 AM	8	7	8	19	42	7	5	13	16	41	83
5:00 AM	12	22	37	27	98	20	27	40	32	119	217
6:00 AM	29	32	49	27	137	20	26	32	25	103	240
7:00 AM	32	54	57	58	201	22	41	47	42	152	353
8:00 AM	55	40	39	39	173	57	52	39	33	181	354
9:00 AM	41	35	39	29	144	30	32	36	38	136	280
10:00 AM	35	46	45	36	162	48	43	43	44	178	340
11:00 AM	42	43	49	45	179	42	62	66	57	227	406
12:00 PM	54	49	39	40	182	69	63	55	49	236	418
1:00 PM	49	45	44	48	186	56	49	39	53	197	383
2:00 PM	62	54	49	48	213	59	58	76	56	249	462
3:00 PM	45	56	57	53	211	53	74	62	74	263	474
4:00 PM	51	58	55	36	200	87	104	110	99	400	600
5:00 PM	65	46	46	32	189	124	116	95	46	381	570
6:00 PM	32	35	25	11	103	51	42	40	31	164	267
7:00 PM	22	24	21	15	82	26	26	19	18	89	171
8:00 PM	26	15	15	11	67	32	29	18	22	101	168
9:00 PM	17	9	15	10	51	13	15	20	9	57	108
10:00 PM	14	8	8	10	40	11	7	4	4	26	66
11:00 PM	6	5	3	1	15	4	7	3	6	20	35
Total	44.7%				2720	55.3%				3364	6084

AM% 38.8% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 61.2% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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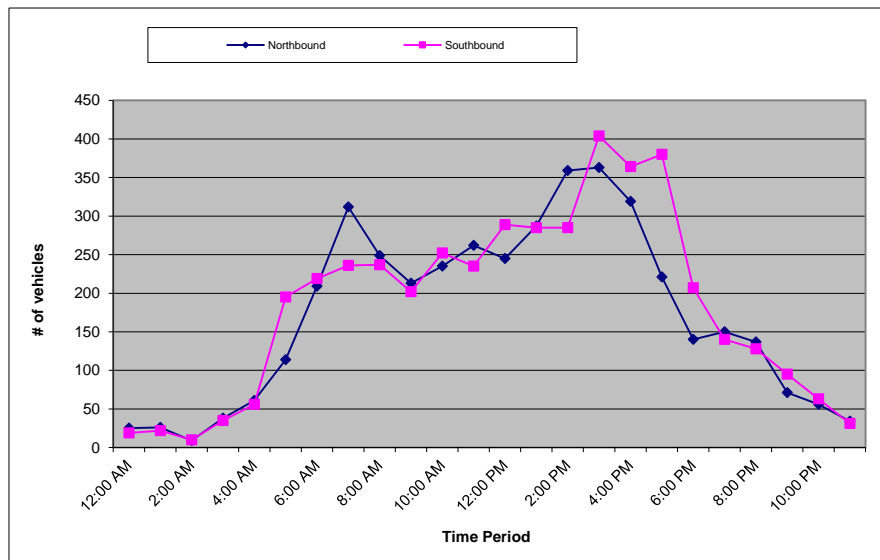
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6271663
SEGMENT Merced St. to South Ave **LONGITUDE** -119.6787706
COLLECTION DATE Thursday, April 29, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	15	4	1	5	25	3	6	6	4	19	44
1:00 AM	6	6	11	3	26	6	7	6	3	22	48
2:00 AM	1	1	4	3	9	3	4	3	0	10	19
3:00 AM	5	8	10	15	38	2	5	13	15	35	73
4:00 AM	12	19	14	16	61	10	8	10	28	56	117
5:00 AM	22	18	32	42	114	20	39	54	82	195	309
6:00 AM	46	46	49	68	209	42	43	71	63	219	428
7:00 AM	56	68	105	83	312	52	52	59	73	236	548
8:00 AM	74	55	59	61	249	85	62	41	49	237	486
9:00 AM	57	54	56	46	213	59	36	46	61	202	415
10:00 AM	68	65	46	56	235	60	77	67	48	252	487
11:00 AM	62	68	67	65	262	54	58	65	58	235	497
12:00 PM	54	62	76	53	245	67	69	78	75	289	534
1:00 PM	59	95	65	68	287	55	78	71	81	285	572
2:00 PM	102	69	107	81	359	70	62	77	76	285	644
3:00 PM	78	86	113	86	363	88	113	91	112	404	767
4:00 PM	74	71	98	76	319	80	94	87	103	364	683
5:00 PM	68	65	40	48	221	97	106	94	83	380	601
6:00 PM	42	35	24	39	140	73	50	36	48	207	347
7:00 PM	33	36	42	39	150	39	28	37	36	140	290
8:00 PM	33	48	34	22	137	35	34	17	42	128	265
9:00 PM	19	22	13	17	71	29	27	16	23	95	166
10:00 PM	16	9	11	20	56	17	15	18	13	63	119
11:00 PM	14	9	7	4	34	11	8	9	3	31	65
Total	48.5%				4135	51.5%				4389	8524

AM% 40.7% **AM Peak** 599 **7:15 am to 8:15 am** **AM P.H.F.** 0.91
PM% 59.3% **PM Peak** 767 **3:00 pm to 4:00 pm** **PM P.H.F.** 0.94





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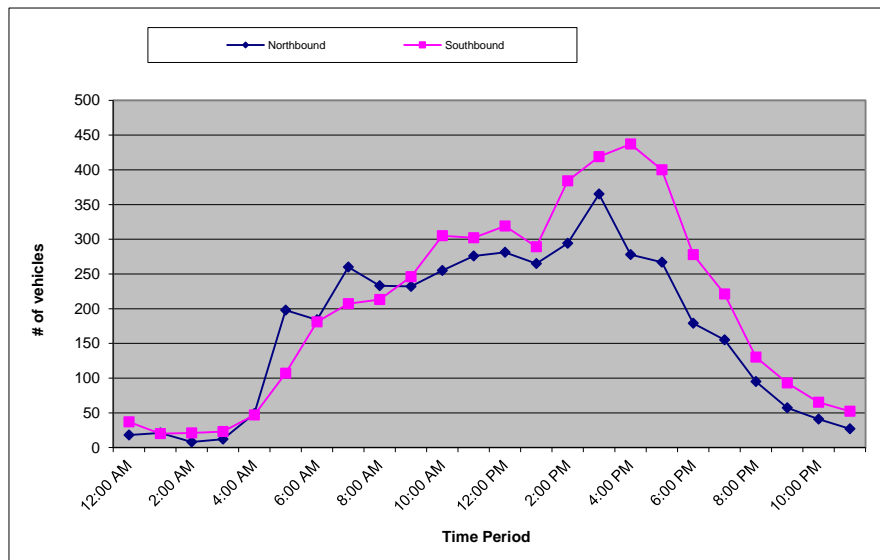
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6162348
SEGMENT South Ave to Temperance Ave **LONGITUDE** -119.6666876
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	9	3	2	18	9	8	14	6	37	55
1:00 AM	1	13	4	3	21	5	5	7	3	20	41
2:00 AM	3	3	1	1	8	11	1	3	6	21	29
3:00 AM	0	1	8	3	12	4	12	1	6	23	35
4:00 AM	5	12	13	19	49	8	16	6	17	47	96
5:00 AM	20	43	77	58	198	19	17	28	43	107	305
6:00 AM	44	33	41	66	184	37	35	45	64	181	365
7:00 AM	43	62	65	90	260	53	42	53	59	207	467
8:00 AM	71	52	49	61	233	67	63	40	43	213	446
9:00 AM	45	61	64	62	232	62	56	58	70	246	478
10:00 AM	66	59	72	58	255	80	59	81	85	305	560
11:00 AM	64	83	67	62	276	84	57	80	81	302	578
12:00 PM	69	60	69	83	281	83	67	91	78	319	600
1:00 PM	57	69	83	56	265	66	83	69	71	289	554
2:00 PM	88	70	73	63	294	83	85	111	105	384	678
3:00 PM	78	79	99	109	365	85	111	111	112	419	784
4:00 PM	81	56	89	52	278	102	113	115	107	437	715
5:00 PM	92	66	48	61	267	122	116	96	66	400	667
6:00 PM	46	55	39	39	179	89	57	76	56	278	457
7:00 PM	47	38	33	37	155	56	64	60	41	221	376
8:00 PM	22	26	23	24	95	46	31	26	27	130	225
9:00 PM	21	9	11	16	57	25	20	37	11	93	150
10:00 PM	9	13	5	14	41	13	23	11	18	65	106
11:00 PM	8	8	5	6	27	13	9	15	15	52	79
Total	45.8%				4050	54.2%				4796	8846

AM% 39.1% **AM Peak 584** **10:30 am to 11:30 am** **AM P.H.F. 0.95**
PM% 60.9% **PM Peak 804** **3:15 pm to 4:15 pm** **PM P.H.F. 0.91**





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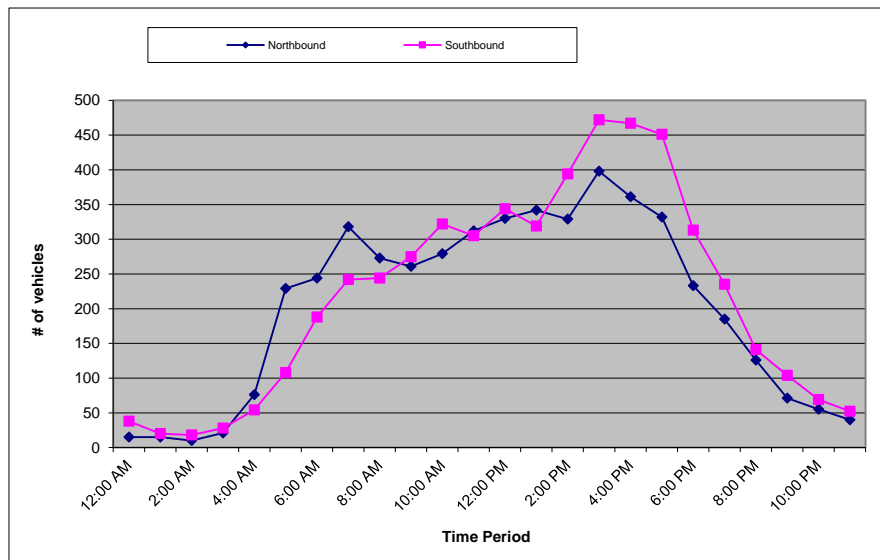
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.611929
SEGMENT Temperance Ave to Valley Dr **LONGITUDE** -119.6618581
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	3	7	3	2	15	10	10	9	9	38	53
1:00 AM	4	4	4	3	15	4	6	9	1	20	35
2:00 AM	2	4	1	3	10	8	1	5	4	18	28
3:00 AM	0	4	9	8	21	4	14	2	8	28	49
4:00 AM	8	17	18	33	76	9	17	9	19	54	130
5:00 AM	18	53	90	68	229	23	26	26	33	108	337
6:00 AM	53	45	65	81	244	33	42	50	63	188	432
7:00 AM	59	73	85	101	318	59	60	53	70	242	560
8:00 AM	80	61	57	75	273	65	64	68	47	244	517
9:00 AM	47	76	77	61	261	70	63	64	78	275	536
10:00 AM	74	66	75	64	279	85	72	80	85	322	601
11:00 AM	63	100	71	78	312	84	63	73	85	305	617
12:00 PM	80	65	94	91	330	87	88	87	82	344	674
1:00 PM	71	89	100	82	342	80	84	79	76	319	661
2:00 PM	106	81	71	71	329	89	90	116	99	394	723
3:00 PM	89	90	111	108	398	96	106	136	134	472	870
4:00 PM	108	78	100	75	361	109	126	126	106	467	828
5:00 PM	112	85	64	71	332	133	121	119	78	451	783
6:00 PM	72	68	44	49	233	97	68	78	70	313	546
7:00 PM	49	47	43	46	185	63	67	64	41	235	420
8:00 PM	34	29	34	29	126	50	36	24	31	141	267
9:00 PM	22	16	13	20	71	28	21	36	19	104	175
10:00 PM	12	16	12	15	55	14	25	13	17	69	124
11:00 PM	11	15	7	7	40	15	9	12	16	52	92
Total	48.3%				4855	51.7%				5203	
10058											

AM% 38.7% **AM Peak** 617 **11:00 am to 12:00 pm** **AM P.H.F.** 0.95
PM% 61.3% **PM Peak** 910 **3:30 pm to 4:30 pm** **PM P.H.F.** 0.92





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24 Hour Volume Report

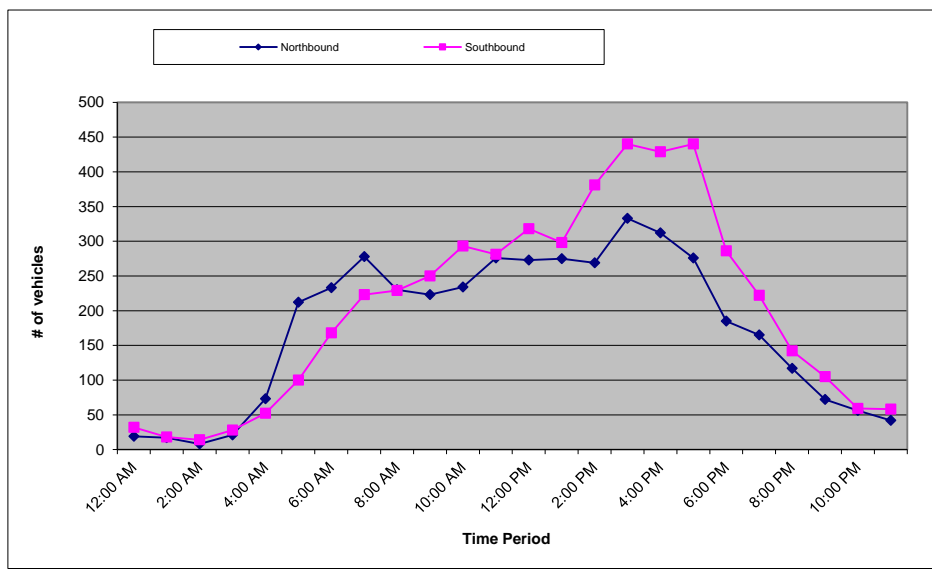
Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd
SEGMENT Valley Dr to Manning Ave
COLLECTION DATE Tuesday, May 11, 2021
NUMBER OF LANES 4

LATITUDE 36.6077759
LONGITUDE -119.6574121
WEATHER Clear

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	6	7	4	2	19	11	7	6	8	32	51
1:00 AM	5	3	4	5	17	4	5	7	2	18	35
2:00 AM	0	4	1	3	8	4	4	3	3	14	22
3:00 AM	0	4	8	9	21	5	13	4	6	28	49
4:00 AM	9	18	17	29	73	8	14	9	21	52	125
5:00 AM	21	50	79	62	212	23	21	24	32	100	312
6:00 AM	48	45	68	72	233	33	31	40	64	168	401
7:00 AM	52	66	71	89	278	51	56	53	63	223	501
8:00 AM	69	54	45	62	230	68	62	57	42	229	459
9:00 AM	42	64	60	57	223	60	64	59	67	250	473
10:00 AM	64	53	58	59	234	76	70	72	75	293	527
11:00 AM	53	81	72	70	276	78	59	60	84	281	557
12:00 PM	60	57	78	78	273	73	83	83	79	318	591
1:00 PM	63	68	70	74	275	72	73	72	81	298	573
2:00 PM	79	67	59	64	269	90	83	115	93	381	650
3:00 PM	79	66	89	99	333	86	102	137	115	440	773
4:00 PM	90	68	84	70	312	105	107	115	102	429	741
5:00 PM	89	72	50	65	276	151	114	103	72	440	716
6:00 PM	58	57	33	37	185	90	65	72	59	286	471
7:00 PM	46	41	39	39	165	59	65	58	40	222	387
8:00 PM	35	24	31	27	117	46	39	21	36	142	259
9:00 PM	20	16	14	22	72	25	25	32	23	105	177
10:00 PM	14	15	13	14	56	12	21	12	14	59	115
11:00 PM	13	15	6	8	42	14	10	15	19	58	100
Total	46.3%				4199	53.7%				4866	9065

AM% 38.7% **AM Peak** 347 **7:15 am to 8:15 am** **AM P.H.F.** 0.78
PM% 61.3% **PM Peak** 348 **3:15 pm to 4:15 pm** **PM P.H.F.** 0.88





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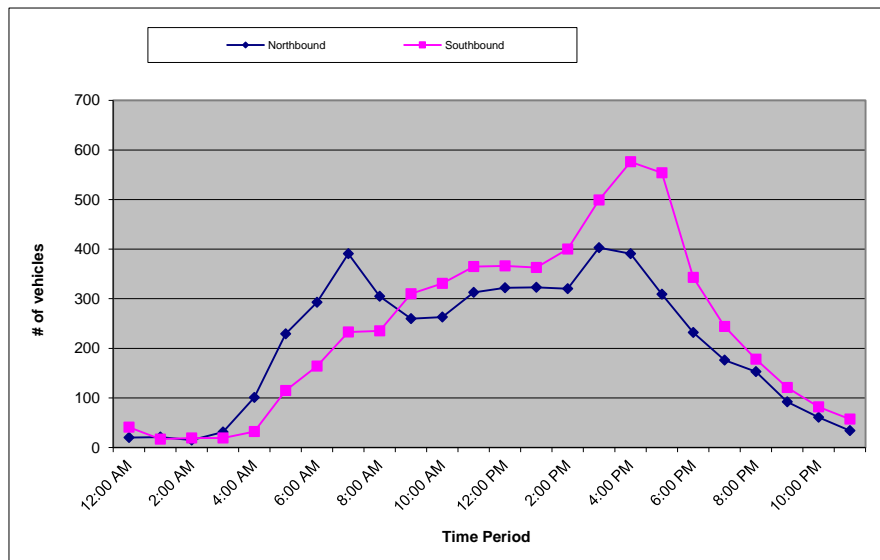
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Golden State Blvd **LATITUDE** 36.6013114
SEGMENT Manning Ave to Springfield Ave **LONGITUDE** -119.650326
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	8	2	6	4	20	7	10	10	14	41	61
1:00 AM	8	6	3	4	21	3	8	1	5	17	38
2:00 AM	2	3	3	7	15	2	3	6	8	19	34
3:00 AM	3	8	8	12	31	1	8	3	7	19	50
4:00 AM	13	26	28	34	101	4	8	8	12	32	133
5:00 AM	44	52	74	59	229	15	23	29	48	115	344
6:00 AM	52	57	89	95	293	39	28	33	64	164	457
7:00 AM	83	91	108	109	391	35	64	69	65	233	624
8:00 AM	88	62	84	71	305	59	71	59	46	235	540
9:00 AM	42	64	80	74	260	63	69	84	94	310	570
10:00 AM	86	58	71	48	263	77	94	77	83	331	594
11:00 AM	77	87	77	72	313	114	73	71	107	365	678
12:00 PM	82	66	83	91	322	87	84	103	92	366	688
1:00 PM	79	81	78	85	323	87	94	97	85	363	686
2:00 PM	92	78	74	76	320	95	101	99	105	400	720
3:00 PM	98	78	124	103	403	108	98	152	141	499	902
4:00 PM	83	100	119	89	391	125	164	141	146	576	967
5:00 PM	101	77	60	71	309	164	149	123	118	554	863
6:00 PM	71	62	44	55	232	106	89	76	72	343	575
7:00 PM	53	35	39	49	176	60	70	59	55	244	420
8:00 PM	43	42	31	37	153	54	46	36	42	178	331
9:00 PM	28	25	20	19	92	37	36	30	18	121	213
10:00 PM	16	17	14	14	61	21	23	19	19	82	143
11:00 PM	11	11	4	8	34	16	11	14	16	57	91
Total	47.2%				5058	52.8%				5664	10722

AM% 38.5% **AM Peak** 678 **11:00 am to 12:00 pm** **AM P.H.F.** 0.89
PM% 61.5% **PM Peak** 1024 **4:15 pm to 5:15 pm** **PM P.H.F.** 0.97





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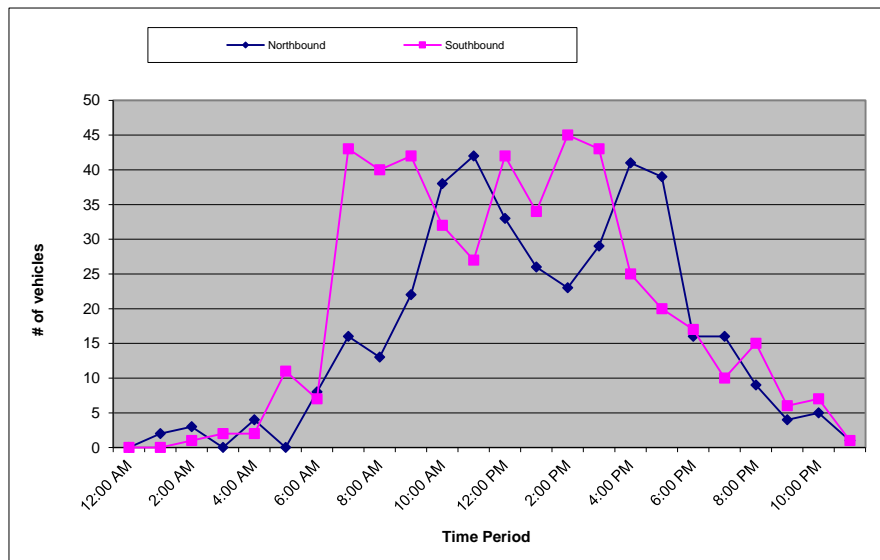
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET 10th St **LATITUDE** 36.6259367
SEGMENT Main St to Fresno St **LONGITUDE** -119.6815295
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	1	0	1	2	0	0	0	0	0	2	
2:00 AM	2	1	0	0	3	0	1	0	0	1	4	
3:00 AM	0	0	0	0	0	0	0	0	2	2	2	
4:00 AM	1	1	2	0	4	2	0	0	0	2	6	
5:00 AM	0	0	0	0	0	2	1	6	2	11	11	
6:00 AM	3	2	1	2	8	1	2	2	2	7	15	
7:00 AM	6	4	3	3	16	1	4	17	21	43	59	
8:00 AM	3	1	4	5	13	13	15	4	8	40	53	
9:00 AM	5	5	2	10	22	11	8	8	15	42	64	
10:00 AM	7	13	9	9	38	6	6	9	11	32	70	
11:00 AM	9	10	9	14	42	13	2	6	6	27	69	
12:00 PM	9	11	5	8	33	6	7	8	21	42	75	
1:00 PM	7	4	7	8	26	10	8	4	12	34	60	
2:00 PM	2	6	10	5	23	13	9	11	12	45	68	
3:00 PM	8	4	14	3	29	15	6	13	9	43	72	
4:00 PM	7	10	14	10	41	8	9	4	4	25	66	
5:00 PM	18	12	5	4	39	6	5	4	5	20	59	
6:00 PM	6	4	2	4	16	2	8	5	2	17	33	
7:00 PM	5	3	6	2	16	5	2	2	1	10	26	
8:00 PM	2	4	1	2	9	2	4	3	6	15	24	
9:00 PM	1	2	0	1	4	0	4	1	1	6	10	
10:00 PM	1	0	2	2	5	3	1	1	2	7	12	
11:00 PM	1	0	0	0	1	1	0	0	0	1	2	
Total	45.2%					390	54.8%					472
862												

AM% 41.2% **AM Peak** 79 **10:15 am to 11:15 am** **AM P.H.F.** 0.90
PM% 58.8% **PM Peak** 77 **12:15 pm to 1:15 pm** **PM P.H.F.** 0.66





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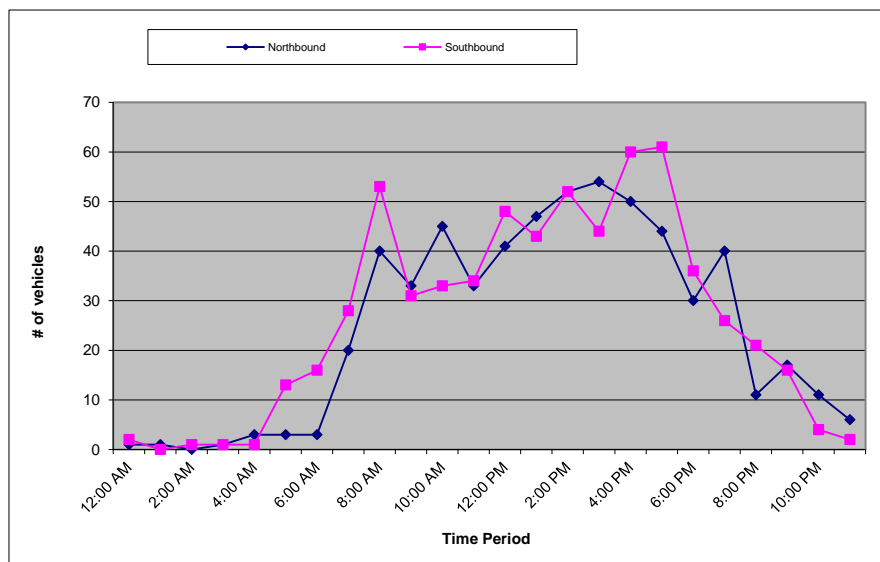
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET 7th St **LATITUDE** 36.6304306
SEGMENT Tuolumne St to Merced St **LONGITUDE** -119.6806278
COLLECTION DATE Thursday, May 13, 2021 **WEATHER** Clear
NUMBER OF LANES 3

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	0	1	0	0	1	1	1	0	0	2	3
1:00 AM	0	0	1	0	1	0	0	0	0	0	1
2:00 AM	0	0	0	0	0	1	0	0	0	1	1
3:00 AM	0	0	0	1	1	0	1	0	0	1	2
4:00 AM	0	2	1	0	3	0	0	1	0	1	4
5:00 AM	0	1	1	1	3	5	4	2	2	13	16
6:00 AM	1	2	0	0	3	3	1	6	6	16	19
7:00 AM	6	4	4	6	20	7	4	8	9	28	48
8:00 AM	10	15	11	4	40	29	15	1	8	53	93
9:00 AM	8	7	8	10	33	7	8	7	9	31	64
10:00 AM	10	11	14	10	45	13	7	6	7	33	78
11:00 AM	7	10	7	9	33	6	7	10	11	34	67
12:00 PM	6	8	15	12	41	17	8	12	11	48	89
1:00 PM	9	12	13	13	47	10	9	10	14	43	90
2:00 PM	13	21	7	11	52	11	16	12	13	52	104
3:00 PM	17	15	14	8	54	10	11	9	14	44	98
4:00 PM	13	15	12	10	50	15	23	13	9	60	110
5:00 PM	11	13	10	10	44	12	20	17	12	61	105
6:00 PM	6	11	9	4	30	11	10	4	11	36	66
7:00 PM	15	8	8	9	40	7	7	2	10	26	66
8:00 PM	3	2	5	1	11	7	7	5	2	21	32
9:00 PM	7	2	7	1	17	5	5	4	2	16	33
10:00 PM	3	4	3	1	11	1	0	2	1	4	15
11:00 PM	1	0	4	1	6	2	0	0	0	2	8
Total	48.3%				586	51.7%				626	1212

AM% 32.7% **AM Peak** 96 7:45 am to 8:45 am **AM P.H.F.** 0.62
PM% 67.3% **PM Peak** 113 3:45 pm to 4:45 pm **PM P.H.F.** 0.74





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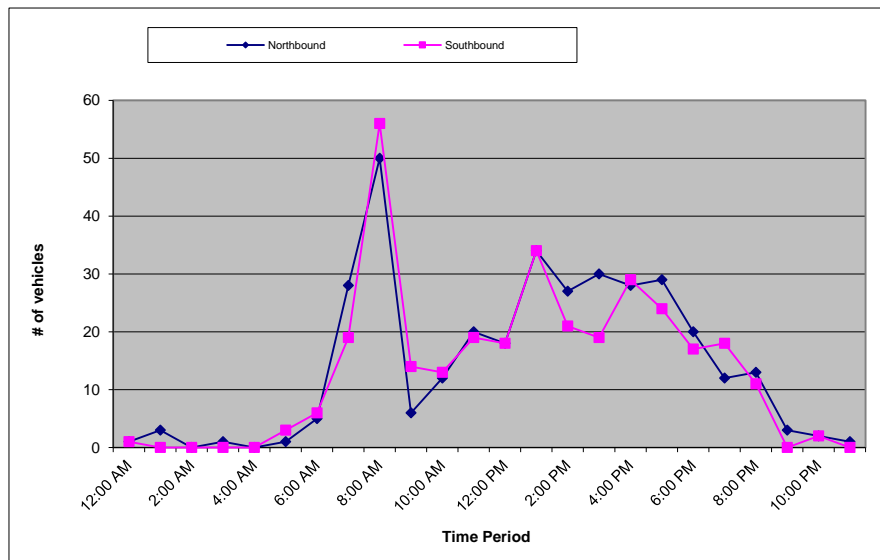
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET 5th St **LATITUDE** 36.6317663
SEGMENT Tuolumne St to Merced St **LONGITUDE** -119.6784495
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 4

Hour	Northbound					Southbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	0	0	0	1	0	1	0	0	1	2
1:00 AM	0	1	2	0	3	0	0	0	0	0	3
2:00 AM	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	1	0	0	0	1	0	0	0	0	0	1
4:00 AM	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	1	0	1	0	0	0	3	3	4
6:00 AM	2	2	1	0	5	1	0	1	4	6	11
7:00 AM	1	0	4	23	28	1	1	3	14	19	47
8:00 AM	27	17	3	3	50	26	25	4	1	56	106
9:00 AM	1	2	2	1	6	0	4	6	4	14	20
10:00 AM	3	4	2	3	12	7	0	1	5	13	25
11:00 AM	5	4	8	3	20	7	4	5	3	19	39
12:00 PM	3	3	5	7	18	4	4	7	3	18	36
1:00 PM	4	10	10	10	34	3	1	5	25	34	68
2:00 PM	10	9	2	6	27	2	3	10	6	21	48
3:00 PM	5	10	6	9	30	9	3	3	4	19	49
4:00 PM	7	5	12	4	28	9	6	5	9	29	57
5:00 PM	9	11	5	4	29	2	8	7	7	24	53
6:00 PM	4	4	4	8	20	4	7	4	2	17	37
7:00 PM	5	1	3	3	12	3	5	6	4	18	30
8:00 PM	5	4	3	1	13	5	2	1	3	11	24
9:00 PM	1	0	0	2	3	0	0	0	0	0	3
10:00 PM	1	1	0	0	2	1	1	0	0	2	4
11:00 PM	0	0	1	0	1	0	0	0	0	0	1
Total	51.5%				344	48.5%				324	668

AM% 38.6% **AM Peak** 139 7:45 am to 8:45 am **AM P.H.F.** 0.66
PM% 61.4% **PM Peak** 74 1:30 pm to 2:30 pm **PM P.H.F.** 0.53





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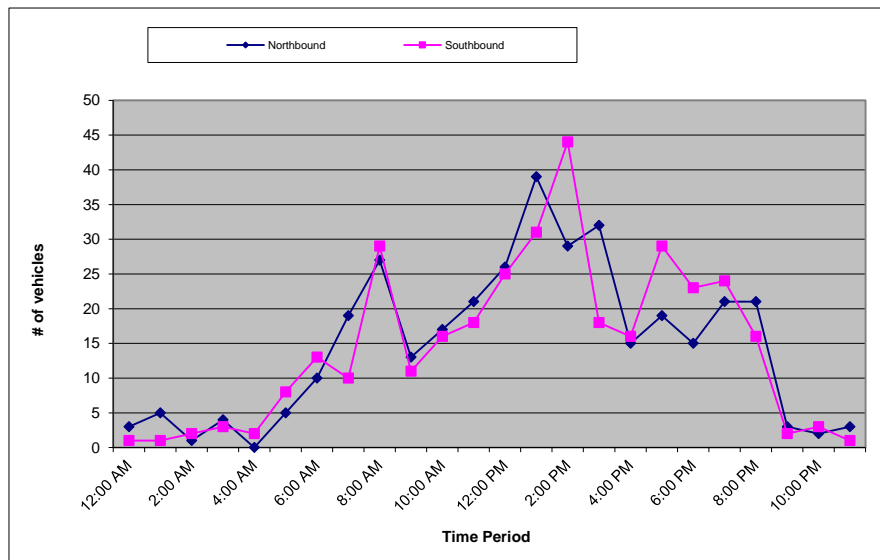
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET 5th St **LATITUDE** 36.6287797
SEGMENT Fresno St to Vine St **LONGITUDE** -119.6751769
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 5

Hour	Northbound					Southbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	1	0	2	0	3	0	0	0	1	1	4	
1:00 AM	1	2	2	0	5	0	1	0	0	1	6	
2:00 AM	0	1	0	0	1	0	1	1	0	2	3	
3:00 AM	0	0	1	3	4	0	0	0	3	3	7	
4:00 AM	0	0	0	0	0	1	0	0	1	2	2	
5:00 AM	0	1	2	2	5	0	2	4	2	8	13	
6:00 AM	4	1	2	3	10	3	3	4	3	13	23	
7:00 AM	3	2	4	10	19	1	2	0	7	10	29	
8:00 AM	16	6	2	3	27	8	12	3	6	29	56	
9:00 AM	2	5	3	3	13	2	4	4	1	11	24	
10:00 AM	6	1	5	5	17	7	3	3	3	16	33	
11:00 AM	7	3	7	4	21	8	3	3	4	18	39	
12:00 PM	5	5	6	10	26	5	11	7	2	25	51	
1:00 PM	7	9	8	15	39	5	7	7	12	31	70	
2:00 PM	7	7	10	5	29	13	10	13	8	44	73	
3:00 PM	9	9	6	8	32	6	4	4	4	18	50	
4:00 PM	2	4	5	4	15	5	4	4	3	16	31	
5:00 PM	6	6	2	5	19	9	6	9	5	29	48	
6:00 PM	2	4	4	5	15	6	5	5	7	23	38	
7:00 PM	7	6	4	4	21	3	5	12	4	24	45	
8:00 PM	14	3	3	1	21	4	3	5	4	16	37	
9:00 PM	1	0	0	2	3	1	1	0	0	2	5	
10:00 PM	0	1	1	0	2	2	0	0	1	3	5	
11:00 PM	3	0	0	0	3	1	0	0	0	1	4	
Total	50.3%					350	49.7%					346
696												

AM% 34.3% **AM Peak 64** 7:45 am to 8:45 am **AM P.H.F.** 0.67
PM% 65.7% **PM Peak 87** 1:45 pm to 2:45 pm **PM P.H.F.** 0.81





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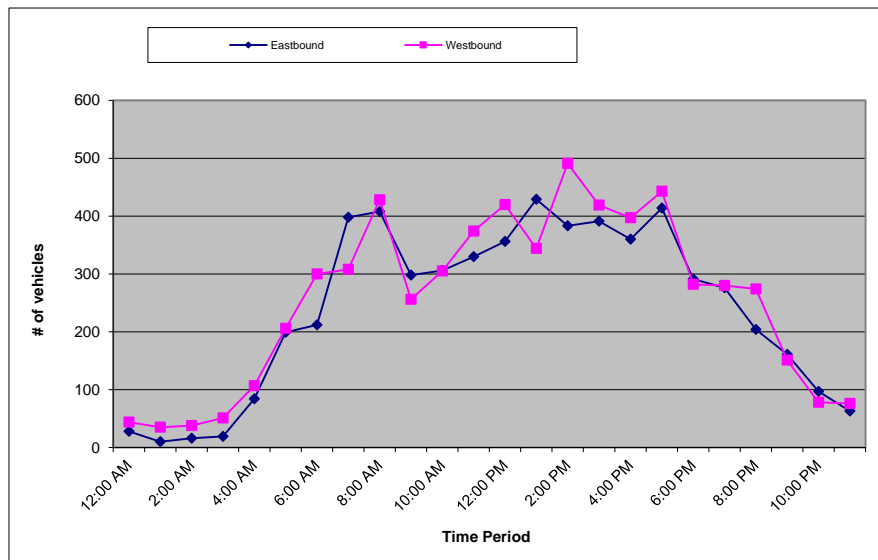
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Merced St **LATITUDE** 36.627937
SEGMENT 10th St to 9th St **LONGITUDE** -119.6824992
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 3

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	8	10	7	3	28	9	19	8	8	44	72
1:00 AM	4	3	0	3	10	8	4	12	11	35	45
2:00 AM	1	7	4	4	16	9	6	12	11	38	54
3:00 AM	1	0	8	10	19	8	12	21	10	51	70
4:00 AM	13	13	12	46	84	19	25	32	31	107	191
5:00 AM	31	37	57	74	199	37	58	58	53	206	405
6:00 AM	48	33	77	54	212	61	59	113	67	300	512
7:00 AM	84	66	89	159	398	58	69	79	102	308	706
8:00 AM	150	118	64	76	408	155	139	71	63	428	836
9:00 AM	66	83	63	86	298	63	68	65	60	256	554
10:00 AM	64	67	85	90	306	66	77	85	77	305	611
11:00 AM	77	66	81	106	330	90	81	100	103	374	704
12:00 PM	74	93	95	94	356	107	135	79	99	420	776
1:00 PM	102	123	90	114	429	78	84	92	90	344	773
2:00 PM	95	99	105	84	383	155	117	107	112	491	874
3:00 PM	104	100	84	103	391	99	110	125	85	419	810
4:00 PM	84	95	77	104	360	84	90	126	97	397	757
5:00 PM	117	101	108	88	414	135	124	108	76	443	857
6:00 PM	83	75	70	63	291	88	45	84	65	282	573
7:00 PM	69	67	77	63	276	65	66	78	71	280	556
8:00 PM	56	46	48	54	204	68	51	63	92	274	478
9:00 PM	33	56	41	31	161	35	43	42	31	151	312
10:00 PM	29	32	21	15	97	17	21	19	21	78	175
11:00 PM	22	9	17	15	63	20	12	21	23	76	139
Total	48.4%				5733	51.6%				6107	11840

AM% 40.2% **AM Peak** 991 **7:30 am to 8:30 am** **AM P.H.F.** 0.81
PM% 59.8% **PM Peak** 882 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.88





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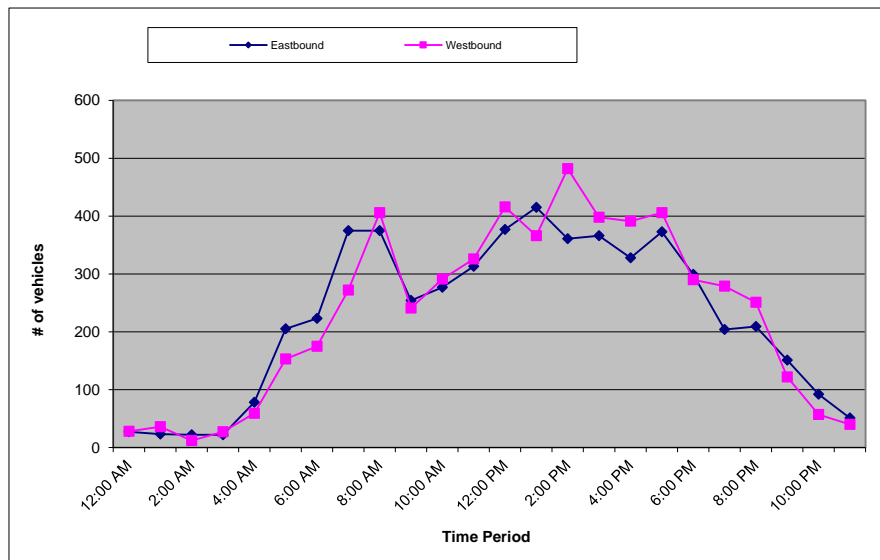
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Merced St **LATITUDE** 36.6284889
SEGMENT 9th St to 8th St **LONGITUDE** -119.6817107
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 3

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	8	9	3	7	27	8	9	6	5	28	55
1:00 AM	3	10	5	5	23	7	11	11	7	36	59
2:00 AM	5	4	8	5	22	2	5	3	2	12	34
3:00 AM	4	1	7	10	22	2	8	10	7	27	49
4:00 AM	6	13	20	39	78	13	14	15	17	59	137
5:00 AM	18	44	68	75	205	27	36	46	44	153	358
6:00 AM	48	41	59	75	223	32	37	60	46	175	398
7:00 AM	59	74	81	161	375	59	46	88	79	272	647
8:00 AM	158	94	59	64	375	145	121	74	66	406	781
9:00 AM	52	70	70	62	254	63	52	61	65	241	495
10:00 AM	66	66	61	84	277	81	78	64	68	291	568
11:00 AM	77	72	80	84	313	85	89	72	80	326	639
12:00 PM	101	87	88	101	377	109	114	94	99	416	793
1:00 PM	97	106	102	110	415	78	89	113	86	366	781
2:00 PM	93	82	88	98	361	154	112	116	100	482	843
3:00 PM	96	70	100	100	366	94	103	119	82	398	764
4:00 PM	96	72	77	83	328	104	91	100	96	391	719
5:00 PM	77	107	89	100	373	106	113	96	91	406	779
6:00 PM	81	83	67	68	299	83	68	74	65	290	589
7:00 PM	58	46	49	51	204	59	66	55	99	279	483
8:00 PM	52	59	48	50	209	80	76	42	53	251	460
9:00 PM	51	33	31	36	151	41	31	28	22	122	273
10:00 PM	37	14	18	23	92	15	14	16	12	57	149
11:00 PM	19	13	10	9	51	16	12	8	4	40	91
Total	49.5%				5420	50.5%				5524	10944

AM% 38.6% **AM Peak** 927 **7:30 am to 8:30 am** **AM P.H.F.** 0.76
PM% 61.4% **PM Peak** 853 **1:15 pm to 2:15 pm** **PM P.H.F.** 0.86





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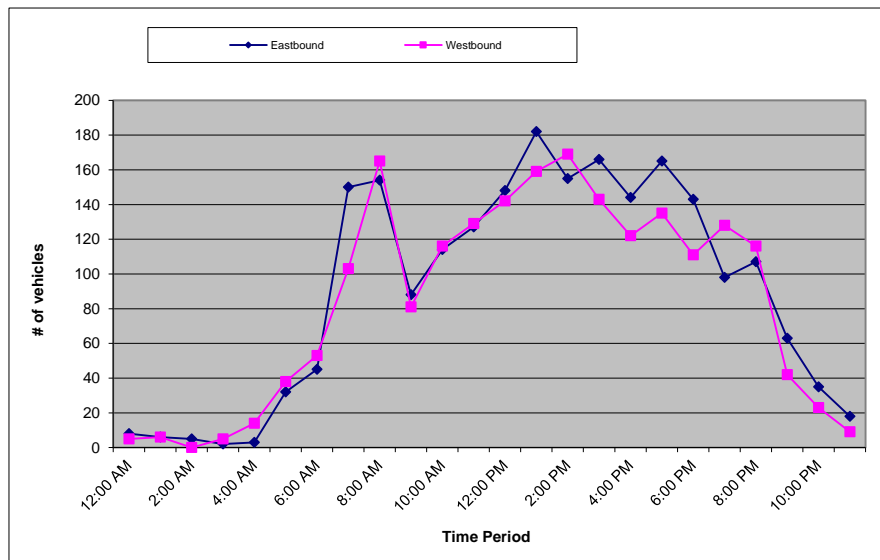
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Merced St **LATITUDE** 36.6301597
SEGMENT 7th St to 6th St **LONGITUDE** -119.6793517
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	2	0	2	8	1	3	1	0	5	13
1:00 AM	1	1	2	2	6	2	1	2	1	6	12
2:00 AM	1	2	2	0	5	0	0	0	0	0	5
3:00 AM	0	1	0	1	2	1	0	2	2	5	7
4:00 AM	1	0	1	1	3	1	4	3	6	14	17
5:00 AM	3	6	14	9	32	9	6	15	8	38	70
6:00 AM	14	10	10	11	45	8	11	17	17	53	98
7:00 AM	12	24	35	79	150	21	22	26	34	103	253
8:00 AM	66	40	18	30	154	61	51	32	21	165	319
9:00 AM	13	13	31	31	88	21	16	21	23	81	169
10:00 AM	24	30	28	32	114	41	19	23	33	116	230
11:00 AM	30	33	29	35	127	35	34	32	28	129	256
12:00 PM	44	32	44	28	148	28	60	23	31	142	290
1:00 PM	40	54	45	43	182	32	42	43	42	159	341
2:00 PM	36	38	41	40	155	55	34	38	42	169	324
3:00 PM	53	38	40	35	166	33	37	40	33	143	309
4:00 PM	43	25	42	34	144	29	41	25	27	122	266
5:00 PM	32	47	43	43	165	30	45	32	28	135	300
6:00 PM	41	35	30	37	143	28	32	22	29	111	254
7:00 PM	24	24	33	17	98	27	36	19	46	128	226
8:00 PM	31	28	24	24	107	34	41	15	26	116	223
9:00 PM	19	14	17	13	63	16	15	6	5	42	105
10:00 PM	18	4	7	6	35	5	10	6	2	23	58
11:00 PM	7	6	1	4	18	6	1	1	1	9	27
Total	51.7%				2158	48.3%				2014	4172

AM% 34.7% **AM Peak** 392 **7:30 am to 8:30 am** **AM P.H.F.** 0.77
PM% 65.3% **PM Peak** 360 **1:15 pm to 2:15 pm** **PM P.H.F.** 0.94





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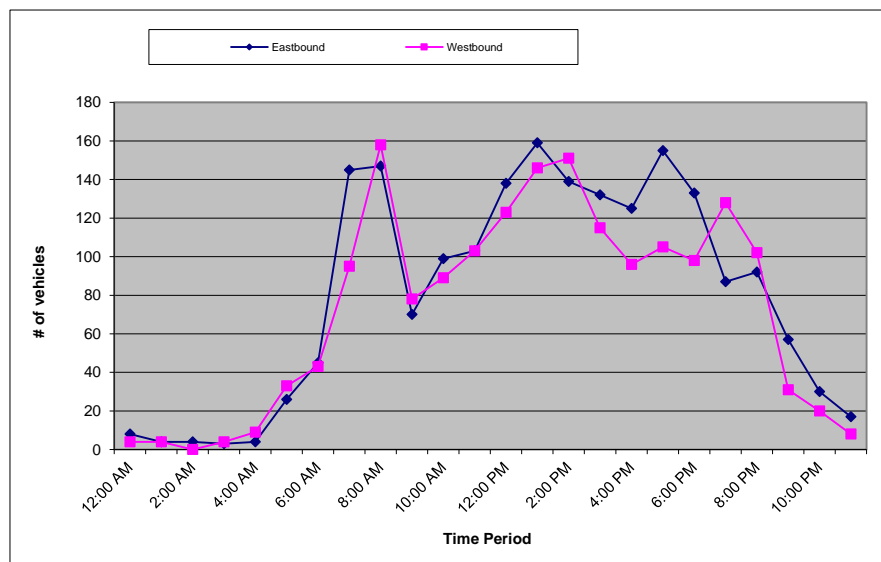
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Merced St **LATITUDE** 36.6309077
SEGMENT 6th St to 5th St **LONGITUDE** -119.678319
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	4	2	0	2	8	1	2	1	0	4	12
1:00 AM	1	1	2	0	4	1	1	1	1	4	8
2:00 AM	1	1	2	0	4	0	0	0	0	0	4
3:00 AM	0	1	1	1	3	1	0	2	1	4	7
4:00 AM	1	1	0	2	4	0	3	2	4	9	13
5:00 AM	2	5	12	7	26	6	6	15	6	33	59
6:00 AM	9	10	10	16	45	5	8	17	13	43	88
7:00 AM	11	22	32	80	145	18	20	25	32	95	240
8:00 AM	58	41	17	31	147	66	47	27	18	158	305
9:00 AM	13	8	26	23	70	20	17	22	19	78	148
10:00 AM	22	26	24	27	99	28	18	16	27	89	188
11:00 AM	24	26	26	27	103	28	26	25	24	103	206
12:00 PM	40	23	47	28	138	25	49	17	32	123	261
1:00 PM	27	50	36	46	159	30	38	45	33	146	305
2:00 PM	35	30	36	38	139	55	33	31	32	151	290
3:00 PM	40	34	29	29	132	32	28	22	33	115	247
4:00 PM	41	22	33	29	125	26	30	16	24	96	221
5:00 PM	33	40	39	43	155	21	36	23	25	105	260
6:00 PM	30	38	31	34	133	29	27	20	22	98	231
7:00 PM	30	16	26	15	87	29	32	19	48	128	215
8:00 PM	27	24	19	22	92	31	35	10	26	102	194
9:00 PM	18	14	14	11	57	12	9	4	6	31	88
10:00 PM	16	4	6	4	30	5	8	5	2	20	50
11:00 PM	7	6	2	2	17	6	1	1	0	8	25
Total	52.4%				1922	47.6%				1743	3665

AM% 34.9% **AM Peak** 381 **7:30 am to 8:30 am** **AM P.H.F.** 0.77
PM% 65.1% **PM Peak** 338 **1:15 pm to 2:15 pm** **PM P.H.F.** 0.94





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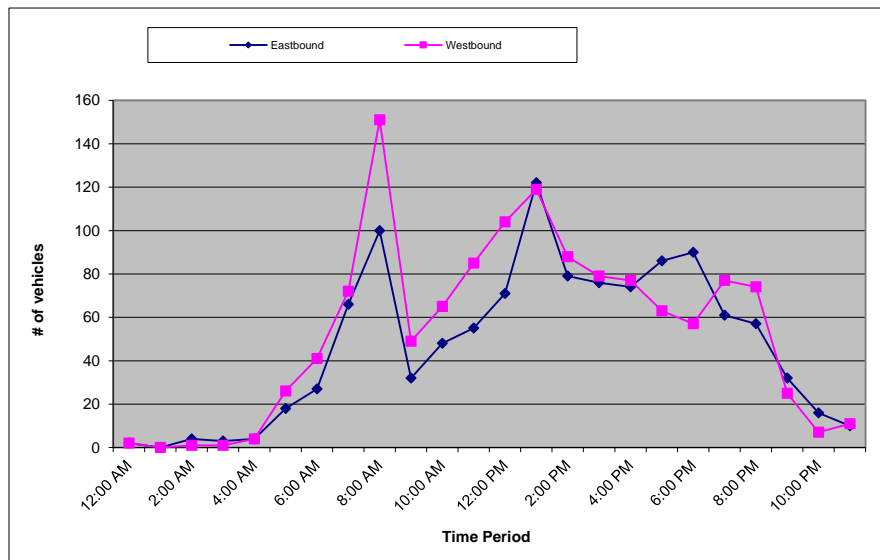
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Merced St **LATITUDE** 36.6339313
SEGMENT 2nd St to 1st St **LONGITUDE** -119.6740635
COLLECTION DATE Thursday, May 20, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	1	0	0	2	0	1	1	0	2	4
1:00 AM	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	2	0	1	1	4	1	0	0	0	1	5
3:00 AM	0	0	1	2	3	0	1	0	0	1	4
4:00 AM	3	1	0	0	4	1	1	0	2	4	8
5:00 AM	0	7	7	4	18	2	7	11	6	26	44
6:00 AM	5	7	7	8	27	10	9	9	13	41	68
7:00 AM	12	11	11	32	66	8	17	17	30	72	138
8:00 AM	41	41	12	6	100	69	49	14	19	151	251
9:00 AM	5	6	9	12	32	13	12	9	15	49	81
10:00 AM	9	8	15	16	48	11	18	14	22	65	113
11:00 AM	13	10	16	16	55	28	15	21	21	85	140
12:00 PM	17	16	20	18	71	33	31	20	20	104	175
1:00 PM	25	45	22	30	122	14	49	41	15	119	241
2:00 PM	25	24	16	14	79	34	20	18	16	88	167
3:00 PM	28	20	13	15	76	19	21	20	19	79	155
4:00 PM	19	24	13	18	74	19	14	21	23	77	151
5:00 PM	16	25	24	21	86	22	13	19	9	63	149
6:00 PM	30	21	22	17	90	23	5	15	14	57	147
7:00 PM	21	14	15	11	61	11	19	25	22	77	138
8:00 PM	21	12	14	10	57	15	10	17	32	74	131
9:00 PM	5	6	11	10	32	5	8	4	8	25	57
10:00 PM	6	7	1	2	16	2	1	4	0	7	23
11:00 PM	1	3	3	3	10	4	3	0	4	11	21
Total	47.0%				1133	53.0%				1278	
2411											

AM% 35.5% **AM Peak** 290 **7:30 am to 8:30 am** **AM P.H.F.** 0.66
PM% 64.5% **PM Peak** 261 **1:15 pm to 2:15 pm** **PM P.H.F.** 0.69





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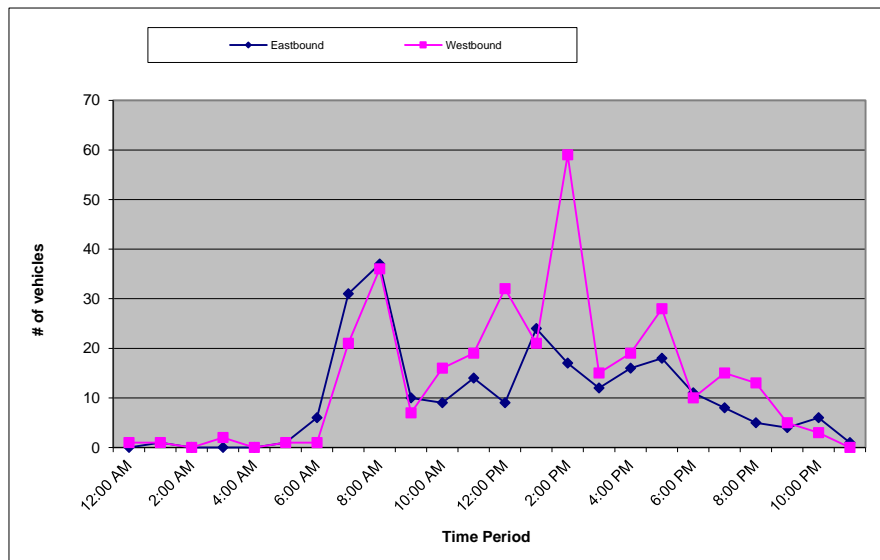
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Fresno St **LATITUDE** 36.629602
SEGMENT 5th St to 4th St **LONGITUDE** -119.6752078
COLLECTION DATE Tuesday, May 25, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals	
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total		
12:00 AM	0	0	0	0	0	1	0	0	0	1	1	
1:00 AM	0	0	1	0	1	0	0	1	0	1	2	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	2	0	0	2	2	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	1	0	0	1	0	0	0	1	1	2	
6:00 AM	3	1	1	1	6	0	0	1	0	1	7	
7:00 AM	1	0	8	22	31	0	2	4	15	21	52	
8:00 AM	24	12	1	0	37	19	8	5	4	36	73	
9:00 AM	6	1	1	2	10	1	3	2	1	7	17	
10:00 AM	2	1	3	3	9	1	0	3	12	16	25	
11:00 AM	6	5	1	2	14	2	9	3	5	19	33	
12:00 PM	0	2	5	2	9	9	12	7	4	32	41	
1:00 PM	4	3	6	11	24	3	2	8	8	21	45	
2:00 PM	3	2	9	3	17	39	6	8	6	59	76	
3:00 PM	2	6	2	2	12	1	4	6	4	15	27	
4:00 PM	2	5	5	4	16	5	4	5	5	19	35	
5:00 PM	8	5	1	4	18	9	5	8	6	28	46	
6:00 PM	4	4	2	1	11	4	0	4	2	10	21	
7:00 PM	1	4	1	2	8	8	4	0	3	15	23	
8:00 PM	1	1	2	1	5	4	6	1	2	13	18	
9:00 PM	2	0	2	0	4	2	1	1	1	5	9	
10:00 PM	5	1	0	0	6	1	2	0	0	3	9	
11:00 PM	0	1	0	0	1	0	0	0	0	0	1	
Total	42.5%					240	57.5%					325
565												

AM% 37.9% **AM Peak** 112 **7:30 am to 8:30 am** **AM P.H.F.** 0.65
PM% 62.1% **PM Peak** 86 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.51





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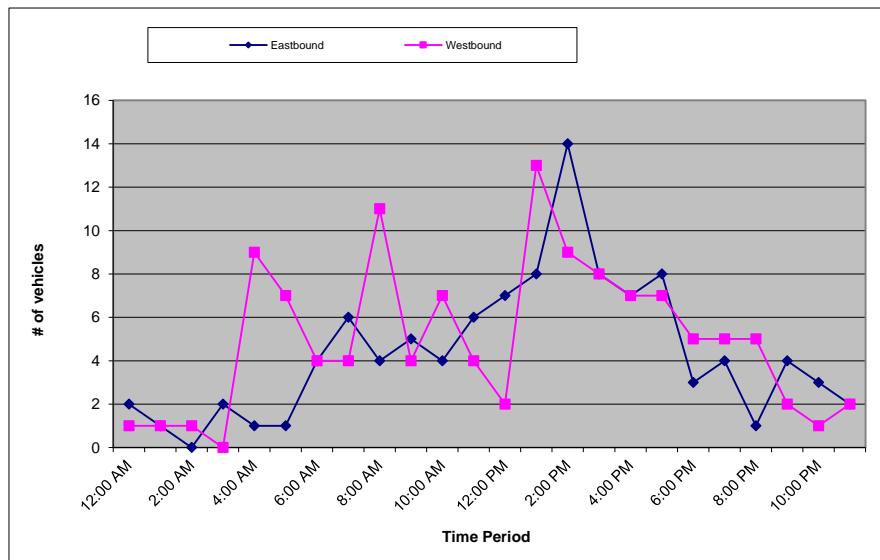
24 Hour Volume Report

Prepared For: **City of Fowler**
 128 S 5th St
 Fowler, CA 93625

STREET Mott Ave **LATITUDE** 36.6235526
SEGMENT Golden State to Temperance **LONGITUDE** -119.665554
COLLECTION DATE Tuesday, May 11, 2021 **WEATHER** Clear
NUMBER OF LANES 2

Hour	Eastbound					Westbound					Hourly Totals
	:00	:15	:30	:45	Total	:00	:15	:30	:45	Total	
12:00 AM	1	0	1	0	2	0	0	0	1	1	3
1:00 AM	0	0	1	0	1	0	1	0	0	1	2
2:00 AM	0	0	0	0	0	0	0	0	1	1	1
3:00 AM	0	2	0	0	2	0	0	0	0	0	2
4:00 AM	0	0	1	0	1	0	1	1	7	9	10
5:00 AM	0	1	0	0	1	3	3	1	0	7	8
6:00 AM	1	0	2	1	4	2	0	1	1	4	8
7:00 AM	0	1	1	4	6	0	1	2	1	4	10
8:00 AM	1	0	0	3	4	2	2	5	2	11	15
9:00 AM	2	2	0	1	5	0	2	2	0	4	9
10:00 AM	1	0	2	1	4	2	2	3	0	7	11
11:00 AM	0	3	2	1	6	1	1	1	1	4	10
12:00 PM	1	3	2	1	7	0	1	1	0	2	9
1:00 PM	1	3	3	1	8	3	3	2	5	13	21
2:00 PM	4	2	5	3	14	2	3	1	3	9	23
3:00 PM	2	2	4	0	8	4	1	2	1	8	16
4:00 PM	1	0	4	2	7	3	2	1	1	7	14
5:00 PM	3	4	1	0	8	5	0	1	1	7	15
6:00 PM	0	0	2	1	3	1	2	1	1	5	8
7:00 PM	0	0	3	1	4	4	0	1	0	5	9
8:00 PM	0	0	1	0	1	2	2	0	1	5	6
9:00 PM	1	1	1	1	4	1	0	1	0	2	6
10:00 PM	1	0	2	0	3	1	0	0	0	1	4
11:00 PM	0	0	1	1	2	1	0	0	1	2	4
Total	46.9%				105	53.1%				119	
224											

AM% 39.7% **AM Peak 16** **8:30 am to 9:30 am** **AM P.H.F. 0.80**
PM% 60.3% **PM Peak 23** **2:15 pm to 3:15 pm** **PM P.H.F. 0.96**



APPENDIX D

TRAFFIC VOLUMES AND ANALYSES



PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

**Fowler General Plan
Table D-1**

<u>No.</u>	<u>Street</u>	<u>Segment</u>	<u>Existing Total Daily Volume</u>	<u>Existing Total AM Peak</u>	<u>Existing Total PM Peak</u>	<u>AM Peak Hour LOS</u>	<u>PM Peak Hour LOS</u>
1	American Ave	SR-99 to Golden State Blvd	4,238	347	345	C or better	C or better
2	American Ave	Golden State Blvd to Clovis Ave	2,461	187	180	C or better	C or better
3	Lincoln Ave	SR-99 to Golden State Blvd	993	104	99	C or better	C or better
4	Lincoln Ave	Clovis Ave to Fowler Ave.	805	67	56	C or better	C or better
5	Lincoln Ave	Fowler Ave to Armstrong Ave	916	71	68	C or better	C or better
6	Lincoln Ave	Armstrong Ave to Temperance Ave	733	68	55	C or better	C or better
7	Clayton Ave	Golden State Blvd to Fowler Ave	95	5	13	C or better	C or better
8	Adams Ave	W of Clovis Ave	1,675	123	107	C or better	C or better
9	Adams Ave	Clovis Ave to SR-99	1,591	131	133	C or better	C or better
10	Adams Ave	SR-99 to Golden State Blvd	4,539	386	308	C or better	C or better
11	Adams Ave	Golden State Blvd to 7th St	4,247	454	317	C or better	C or better
12	Adams Ave	East of 5th St	3,412	446	267	C or better	C or better
13	Adams Ave	W of Armstrong	2,313	286	193	C or better	C or better
14	Adams Ave	Armstrong Ave to Temperance Ave	3,667	433	259	C or better	C or better
15	Adams Ave	Temperance Ave to Locan Ave	2,685	259	223	C or better	C or better
16	Walter Ave	W of Temperance	832	167	65	C or better	C or better
17	Walter Ave	Temperance Ave to Locan Ave	707	72	62	C or better	C or better
18	Sumner Ave	Clovis Ave to Sunnyside Ave.	1,318	97	122	C or better	C or better
19	Sumner Ave	Sunnyside Ave to Merced St	3,108	266	250	C or better	C or better
20	South Ave	Clovis Ave to Sunnyside Ave.	879	63	92	C or better	C or better
21	South Ave	Sunnyside Ave to Stanford Ave.	1,151	100	115	C or better	C or better
22	South Ave	Stanford Ave to S. Fowler Ave.	1,514	102	133	C or better	C or better
23	South Ave	W of Golden State Blvd	2,281	97	167	C or better	C or better
24	South Ave	Golden State Blvd to Harris Ave.	1,434	116	100	C or better	C or better
25	Parlier Ave	Clovis Ave to Sunnyside Ave.	98	3	9	C or better	C or better
26	Parlier Ave	Sunnyside Ave to Fowler Ave	151	13	9	C or better	C or better
27	Parlier Ave	Fowler Ave to SR-99	150	17	7	C or better	C or better
28	Manning Ave	W of 99 SB Ramps	5,802	375	426	C or better	C or better
29	Manning Ave	E of 99 NB Ramps	21,738	1,557	1,710	C or better	C or better
30	Manning Ave	E of Golden State	16,414	1,198	1,271	C or better	C or better
31	Springfield Ave	W of Temperance	50	4	11	C or better	C or better
32	Clovis Ave	S of Lincoln Ave	15,876	1,081	1,229	C or better	C or better
33	Clovis Ave	N of SR 99 NB Ramps, S of GS Frontage Connector Road	16,736	1,151	1,285	C or better	C or better
34	Clovis Ave	SR 99 SB off to Adams Ave	4,513	292	336	C or better	C or better
35	Clovis Ave	Adams Ave to Summer Ave	3,904	271	339	C or better	C or better
36	Clovis Ave	Summer Ave to South	3,428	254	299	C or better	C or better
37	Clovis Ave	South Ave to Parlier Ave	3,163	233	259	C or better	C or better
38	S Fowler Ave	Lincoln Ave to Clayton Ave	1,307	118	126	C or better	C or better
39	S Fowler Ave	Clayton Ave to Adams Ave	1,579	150	140	C or better	C or better
40	S Fowler Ave	Merced St. to Fresno St.	7,448	600	577	C or better	C or better
41	S Fowler Ave	Fresno St. to South Ave.	4,607	343	379	C or better	C or better
42	S Fowler Ave	South Ave to Parlier Ave	3,596	253	306	C or better	C or better
43	Armstrong Ave	Lincoln Ave to Clayton Ave	356	35	31	C or better	C or better
44	Armstrong Ave	Clayton Ave to Adams Ave	974	116	69	C or better	C or better
45	Temperance Ave	Lincoln Ave to Clayton Ave	1,717	142	150	C or better	C or better
46	Temperance Ave	Clayton Ave to Adams Ave	2,379	243	225	C or better	C or better
47	Temperance Ave	Adams Ave to Walter Ave	1,941	198	183	C or better	C or better
48	Temperance Ave	Walter Ave to Mott Ave	1,797	154	168	C or better	C or better
49	Temperance Ave	Mott Ave to South Ave	1,598	147	158	C or better	C or better
50	Temperance Ave	S of South Ave	2,138	171	194	C or better	C or better
51	Temperance Ave	Manning Ave to Springfield Ave	565	50	56	C or better	C or better
52	Golden State Blvd	American Ave to Lincoln Ave	6,584	467	717	C or better	C or better
53	Golden State Blvd	Lincoln Ave to Clayton Ave	5,525	380	620	C or better	C or better
54	Golden State Blvd	Clayton Ave to Adams Ave	5,509	375	620	C or better	C or better
55	Golden State Blvd	Adams Ave to Merced St.	6,084	411	651	C or better	C or better
56	Golden State Blvd	Merced St. to South Ave	8,524	599	700	C or better	C or better
57	Golden State Blvd	South Ave to Temperance Ave	8,846	520	759	C or better	C or better
58	Golden State Blvd	Temperance Ave to Valley Dr	10,058	587	858	C or better	C or better
59	Golden State Blvd	Valley Dr to Manning Ave	9,065	535	797	C or better	C or better
60	Golden State Blvd	Manning Ave to Springfield Ave	10,722	653	1,024	C or better	C or better
61	10th St	Main St to Fresno St	862	76	75	C or better	C or better
62	7th St	Tuolumne St to Merced St	1,212	96	105	C or better	C or better
63	5th St	Tuolumne St to Merced St	668	139	60	C or better	C or better
64	5th St	Fresno St to Vine St	696	64	48	C or better	C or better
65	Merced St	10th St to 9th St	11,840	991	894	D	D
66	Merced St	9th St to 8th St	10,944	927	779	D	D
67	Merced St	7th St to 6th St	4,172	392	300	C or better	C or better
68	Merced St	6th St to 5th St	3,665	381	260	C or better	C or better
69	Merced St	2nd St to 1st St	2,411	290	160	C or better	C or better
70	Fresno St	5th St to 4th St	565	112	46	C or better	C or better
71	Mott Ave	Harris to Temperance	224	15	20	C or better	C or better

Fowler General Plan

Table D-2

No.	Street	Segment	Designation	Planned Lanes	Model Speed	2042 Total Daily Volume	2042 Total AM Peak	2042 Total PM Peak	2042 AM Peak Hour LOS	2042 PM Peak Hour LOS
1	American Ave	SR-99 to Golden State Blvd	Arterial	4	45	15,022	1,189	1,191	C or better	C or better
2	American Ave	Golden State Blvd to Clovis Ave	Arterial	4	45	8,793	835	1,050	C or better	C or better
3	Lincoln Ave	SR-99 to Golden State Blvd	Collector	2	35	993	104	99	C or better	C or better
4	Lincoln Ave	Clovis Ave to Fowler Ave.	Collector	2	50	5,560	772	949	C or better	C or better
5	Lincoln Ave	Fowler Ave to Armstrong Ave	Collector	2	50	6,222	458	531	C or better	C or better
6	Lincoln Ave	Armstrong Ave to Temperance Ave	Collector	2	50	8,062	520	674	C or better	C or better
7	Clayton Ave	Golden State Blvd to Fowler Ave	Collector	2	40	1,091	987	804	C or better	C or better
8	Adams Ave	W of Clovis Ave	Collector	2	50	5,053	744	536	C or better	C or better
9	Adams Ave	Clovis Ave to SR-99	Collector	2	50	8,594	720	964	C or better	C or better
10	Adams Ave	SR-99 to Golden State Blvd	Collector	2	30	17,352	1,169	1,120	D	D
11	Adams Ave	Golden State Blvd to 7th St	Collector	2	30	11,407	1,002	864	D	D
12	Adams Ave	East of 5th St	Collector	2	30	7,694	809	618	D	C or better
13	Adams Ave	W of Armstrong	Collector	2	30	4,984	525	410	C or better	C or better
14	Adams Ave	Armstrong Ave to Temperance Ave	Collector	2	25	6,277	691	522	D	C or better
15	Adams Ave	Temperance Ave to Locan Ave	Collector	2	50	5,079	535	549	C or better	C or better
16	Walter Ave	W of Temperance	Collector	2	25	2,391	307	191	C or better	C or better
17	Walter Ave	Temperance Ave to Locan Ave	Collector	2	40	1,044	101	92	C or better	C or better
18	Sumner Ave	Clovis Ave to Sunnyside Ave.	Collector	2	35	5,494	585	651	C or better	D
19	Sumner Ave	Sunnyside Ave to Merced St	Collector	2	35	11,485	885	916	D	D
20	South Ave	Clovis Ave to Sunnyside Ave.	Collector	2	40	2,370	382	337	C or better	C or better
21	South Ave	Sunnyside Ave to Stanford Ave.	Collector	2	40	2,642	419	360	C or better	C or better
22	South Ave	Stanford Ave to S. Fowler Ave.	Collector	2	40	2,568	347	344	C or better	C or better
23	South Ave	W of Golden State Blvd	Collector	2	40	4,876	339	559	C or better	C or better
24	South Ave	Golden State Blvd to Harris Ave.	Collector	2	40	7,391	598	589	C or better	C or better
25	Parlier Ave	Clovis Ave to Sunnyside Ave.	Collector	2	40	703	64	174	C or better	C or better
26	Parlier Ave	Sunnyside Ave to Fowler Ave	Collector	2	40	724	55	160	C or better	C or better
27	Parlier Ave	Fowler Ave to SR-99	Collector	2	40	150	17	7	C or better	C or better
28	Manning Ave	W of 99 SB Ramps	Arterial	4	50	29,134	2,203	2,403	C or better	C or better
29	Manning Ave	E of 99 NB Ramps	Arterial	4	45	39,103	2,560	2,545	C or better	C or better
30	Manning Ave	E of Golden State	Arterial	4	45	32,092	1,832	2,048	C or better	C or better
31	Springfield Ave	W of Temperance	Collector	2	50	311	53	74	C or better	C or better
32	Clovis Ave	S of Lincoln Ave	Arterial	4	45	36,041	2,592	2,779	C or better	C or better
33	Clovis Ave	N of SR 99 NB Ramps, S of GS Frontage Connector Road	Arterial	4	45	39,075	2,827	3,002	C or better	C or better
34	Clovis Ave	SR 99 SB off to Adams Ave	Arterial	4	40	16,123	1,065	1,289	C or better	C or better
35	Clovis Ave	Adams Ave to Summer Ave	Arterial	4	50	17,174	1,377	1,956	C or better	C or better
36	Clovis Ave	Summer Ave to South	Arterial	4	50	9,493	853	1,128	C or better	C or better
37	Clovis Ave	South Ave to Parlier Ave	Arterial	4	50	6,719	499	783	C or better	C or better
38	S Fowler Ave	Lincoln Ave to Clayton Ave	Collector	2	40	2,568	299	566	C or better	C or better
39	S Fowler Ave	Clayton Ave to Adams Ave	Collector	2	40	3,224	432	681	C or better	C or better
40	S Fowler Ave	Merced St. to Fresno St.	Arterial	4	35	19,438	1,557	1,558	D	D
41	S Fowler Ave	Fresno St. to South Ave.	Arterial	4	40	15,352	1,166	1,276	C or better	C or better
42	S Fowler Ave	South Ave to Parlier Ave	Arterial	4	40	16,055	1,323	1,480	C or better	C or better
43	Armstrong Ave	Lincoln Ave to Clayton Ave	Collector	2	50	4,539	595	591	C or better	C or better
44	Armstrong Ave	Clayton Ave to Adams Ave	Collector	2	50	5,785	628	685	C or better	C or better
45	Temperance Ave	Lincoln Ave to Clayton Ave	Expressway	4	45	11,725	878	1,177	C or better	C or better
46	Temperance Ave	Clayton Ave to Adams Ave	Expressway	4	45	13,203	1,065	1,117	C or better	C or better
47	Temperance Ave	Adams Ave to Walter Ave	Expressway	4	45	12,502	1,039	1,132	C or better	C or better
48	Temperance Ave	Walter Ave to Mott Ave	Expressway	4	45	13,203	948	1,055	C or better	C or better
49	Temperance Ave	Mott Ave to South Ave	Expressway	4	45	15,959	1,187	1,327	C or better	C or better
50	Temperance Ave	S of South Ave	Expressway	4	45	17,218	1,384	1,485	C or better	C or better
51	Temperance Ave	Manning Ave to Springfield Ave	Collector	2	50	1,371	214	208	C or better	C or better
52	Golden State Blvd	American Ave to Lincoln Ave	Expressway	4	50	31,974	3,066	3,309	C or better	D
53	Golden State Blvd	Lincoln Ave to Clayton Ave	Expressway	4	50	26,225	2,589	2,744	C or better	C or better
54	Golden State Blvd	Clayton Ave to Adams Ave	Expressway	4	50	22,354	2,174	2,534	C or better	C or better
55	Golden State Blvd	Adams Ave to Merced St.	Expressway	4	45	28,845	2,056	2,553	C or better	C or better
56	Golden State Blvd	Merced St. to South Ave	Expressway	4	45	25,114	2,446	2,983	C or better	C or better
57	Golden State Blvd	South Ave to Temperance Ave	Expressway	4	45	23,504	2,055	2,513	C or better	C or better
58	Golden State Blvd	Temperance Ave to Valley Dr	Expressway	4	45	33,283	2,818	3,179	C or better	C or better
59	Golden State Blvd	Valley Dr to Manning Ave	Expressway	4	45	35,200	2,919	3,445	C or better	E or F
60	Golden State Blvd	Manning Ave to Springfield Ave	Expressway	4	50	27,929	2,273	2,856	C or better	C or better
61	10th St	Main St to Fresno St	Collector	2	25	1,946	206	290	C or better	C or better
62	7th St	Tuolumne St to Merced St	Collector	2	25	3,180	273	271	C or better	C or better
63	5th St	Tuolumne St to Merced St	Collector	2	25	2,900	477	514	D	D
64	5th St	Fresno St to Vine St	Collector	2	25	2,471	326	424	C or better	C or better
65	Merced St	10th St to 9th St	Collector	2	25	23,946	1,850	1,664	F	F
66	Merced St	9th St to 8th St	Collector	2	25	21,045	1,678	1,373	F	F
67	Merced St	7th St to 6th St	Collector	2	25	12,100	944	942	D	D
68	Merced St	6th St to 5th St	Collector	2	25	11,593	933	902	D	D
69	Merced St	2nd St to 1st St	Collector	2	25	6,092	654	642	D	D
70	Fresno St	5th St to 4th St	Collector	2	25	1,083	149	133	C or better	C or better
71	Mott Ave	Harris to Temperance	Local	2	40	1,208	163	220	C or better	C or better

APPENDIX E

INTERSECTION ANALYSIS SHEETS



PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Existing Conditions

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations						↗	↘	↕			↕	↗
Traffic Vol, veh/h	0	0	0	0	0	426	81	117	0	0	587	58
Future Vol, veh/h	0	0	0	0	0	426	81	117	0	0	587	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	180	-	-	-	-	120
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	0	0	0	0	468	89	129	0	0	645	64

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	65	709
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.08	4.28
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.39	2.29
Pot Cap-1 Maneuver	0	963	841
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	963	841
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	841	-	963	-
HCM Lane V/C Ratio	0.106	-	0.486	-
HCM Control Delay (s)	9.8	-	12.2	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.4	-	2.7	-

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↕↕			↕↕
Traffic Vol, veh/h	29	0	198	0	0	587
Future Vol, veh/h	29	0	198	0	0	587
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	32	0	218	0	0	645

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	541	-	0
Stage 1	218	-	-
Stage 2	323	-	-
Critical Hdwy	6.98	-	-
Critical Hdwy Stg 1	5.98	-	-
Critical Hdwy Stg 2	5.98	-	-
Follow-up Hdwy	3.59	-	-
Pot Cap-1 Maneuver	455	0	0
Stage 1	777	0	0
Stage 2	686	0	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	455	-	-
Mov Cap-2 Maneuver	455	-	-
Stage 1	777	-	-
Stage 2	686	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 455	-
HCM Lane V/C Ratio	- 0.07	-
HCM Control Delay (s)	- 13.5	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.2	-

Intersection												
Int Delay, s/veh	18											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔					↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	47	29	46	0	0	0	2	152	1	468	113	38
Future Vol, veh/h	47	29	46	0	0	0	2	152	1	468	113	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	85	-	120	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	53	33	52	0	0	0	2	173	1	532	128	43

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1283	1370	64	171	0	0	174	0	0
Stage 1	1192	1192	-	-	-	-	-	-	-
Stage 2	91	178	-	-	-	-	-	-	-
Critical Hdwy	7	6.7	7.1	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	2.3	-	-	2.3	-	-
Pot Cap-1 Maneuver	146	135	962	1347	-	-	1343	-	-
Stage 1	235	243	-	-	-	-	-	-	-
Stage 2	899	732	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	88	0	962	1347	-	-	1343	-	-
Mov Cap-2 Maneuver	88	0	-	-	-	-	-	-	-
Stage 1	235	0	-	-	-	-	-	-	-
Stage 2	543	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	95.8	0.1	7.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1347	-	-	160	1343	-	-
HCM Lane V/C Ratio	0.002	-	-	0.866	0.396	-	-
HCM Control Delay (s)	7.7	-	-	95.8	9.4	-	-
HCM Lane LOS	A	-	-	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	6	1.9	-	-

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↖	↗
Traffic Vol, veh/h	85	0	0	53	2	102
Future Vol, veh/h	85	0	0	53	2	102
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	0	0	65	2	124

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	170 105
Stage 1	-	-	-	-	104 -
Stage 2	-	-	-	-	66 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	820 949
Stage 1	-	0	0	-	920 -
Stage 2	-	0	0	-	957 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	819 948
Mov Cap-2 Maneuver	-	-	-	-	819 -
Stage 1	-	-	-	-	920 -
Stage 2	-	-	-	-	956 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	819	948	-	-
HCM Lane V/C Ratio	0.003	0.131	-	-
HCM Control Delay (s)	9.4	9.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0	0.5	-	-

Intersection												
Intersection Delay, s/veh	22.3											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑			↕			↕	
Traffic Vol, veh/h	0	189	28	217	95	0	9	0	306	191	80	32
Future Vol, veh/h	0	189	28	217	95	0	9	0	306	191	80	32
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	222	33	255	112	0	11	0	360	225	94	38
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	17.8	19.8	23.3	27.1
HCM LOS	C	C	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	0%	0%	100%	0%	63%
Vol Thru, %	0%	100%	0%	0%	100%	26%
Vol Right, %	97%	0%	100%	0%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	315	189	28	217	95	303
LT Vol	9	0	0	217	0	191
Through Vol	0	189	0	0	95	80
RT Vol	306	0	28	0	0	32
Lane Flow Rate	371	222	33	255	112	356
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.688	0.502	0.068	0.593	0.244	0.721
Departure Headway (Hd)	6.685	8.123	7.397	8.362	7.845	7.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	541	442	483	431	457	495
Service Time	4.742	5.885	5.158	6.121	5.603	5.343
HCM Lane V/C Ratio	0.686	0.502	0.068	0.592	0.245	0.719
HCM Control Delay	23.3	18.9	10.7	22.7	13.1	27.1
HCM Lane LOS	C	C	B	C	B	D
HCM 95th-tile Q	5.3	2.7	0.2	3.7	0.9	5.8

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑			↘			↕				
Traffic Vol, veh/h	179	504	0	0	300	210	11	0	155	0	0	0
Future Vol, veh/h	179	504	0	0	300	210	11	0	155	0	0	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	201	566	0	0	337	236	12	0	174	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	575	0	0
Stage 1	-	-	968
Stage 2	-	-	457
Critical Hdwy	4.13	-	6.43
Critical Hdwy Stg 1	-	-	5.43
Critical Hdwy Stg 2	-	-	5.43
Follow-up Hdwy	2.227	-	3.527
Pot Cap-1 Maneuver	993	0	149
Stage 1	-	0	367
Stage 2	-	0	636
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	993	-	119
Mov Cap-2 Maneuver	-	-	119
Stage 1	-	-	293
Stage 2	-	-	635

Approach	EB	WB	NB
HCM Control Delay, s	2.5	0	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	424	993	-	-	-
HCM Lane V/C Ratio	0.44	0.203	-	-	-
HCM Control Delay (s)	20	9.5	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	2.2	0.8	-	-	-

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗			↘	
Traffic Vol, veh/h	126	145	0	0	231	15
Future Vol, veh/h	126	145	0	0	231	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	142	163	0	0	260	17

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	142	142
Stage 1	-	-	142	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	848	903
Stage 1	-	-	883	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	848	903
Mov Cap-2 Maneuver	-	-	848	-
Stage 1	-	-	883	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	11.3
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	851	-	-
HCM Lane V/C Ratio	0.325	-	-
HCM Control Delay (s)	11.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.4	-	-

Intersection						
Int Delay, s/veh	9.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	128	38	88	173	9	443
Future Vol, veh/h	128	38	88	173	9	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	158	47	109	214	11	547

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	205	0	614
Stage 1	-	-	-	-	182
Stage 2	-	-	-	-	432
Critical Hdwy	-	-	4.22	-	6.52
Critical Hdwy Stg 1	-	-	-	-	5.52
Critical Hdwy Stg 2	-	-	-	-	5.52
Follow-up Hdwy	-	-	2.308	-	3.608
Pot Cap-1 Maneuver	-	-	1309	-	439
Stage 1	-	-	-	-	826
Stage 2	-	-	-	-	634
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1309	-	398
Mov Cap-2 Maneuver	-	-	-	-	398
Stage 1	-	-	-	-	826
Stage 2	-	-	-	-	574

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	398	835	-	-	1309	-
HCM Lane V/C Ratio	0.028	0.655	-	-	0.083	-
HCM Control Delay (s)	14.3	17.1	-	-	8	0
HCM Lane LOS	B	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	5	-	-	0.3	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Vol, veh/h	551	0	0	967	47	126
Future Vol, veh/h	551	0	0	967	47	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	605	0	0	1063	52	138

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	1137 303
Stage 1	-	-	-	-	605 -
Stage 2	-	-	-	-	532 -
Critical Hdwy	-	-	-	-	7 7.1
Critical Hdwy Stg 1	-	-	-	-	6 -
Critical Hdwy Stg 2	-	-	-	-	6 -
Follow-up Hdwy	-	-	-	-	3.6 3.4
Pot Cap-1 Maneuver	-	0	0	-	183 670
Stage 1	-	0	0	-	486 -
Stage 2	-	0	0	-	531 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	183 670
Mov Cap-2 Maneuver	-	-	-	-	183 -
Stage 1	-	-	-	-	486 -
Stage 2	-	-	-	-	531 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	183	670	-	-
HCM Lane V/C Ratio	0.282	0.207	-	-
HCM Control Delay (s)	32.2	11.8	-	-
HCM Lane LOS	D	B	-	-
HCM 95th %tile Q(veh)	1.1	0.8	-	-

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							↗	↘	↕		↕	↗
Traffic Vol, veh/h	0	0	0	0	0	629	52	190	0	0	650	63
Future Vol, veh/h	0	0	0	0	0	629	52	190	0	0	650	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	180	-	-	-	-	120
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	0	0	0	0	662	55	200	0	0	684	66

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	100 750 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.08 4.28
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.39 2.29
Pot Cap-1 Maneuver	0	0	914 810
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	0	914 810
Mov Cap-2 Maneuver	-	0	-
Stage 1	-	0	-
Stage 2	-	0	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	810	-	914	-
HCM Lane V/C Ratio	0.068	-	0.724	-
HCM Control Delay (s)	9.8	-	18.5	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.2	-	6.5	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑↑			↑↑
Traffic Vol, veh/h	36	0	242	0	0	650
Future Vol, veh/h	36	0	242	0	0	650
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	38	0	255	0	0	684

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	597	-	0	-	-	-
Stage 1	255	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.98	-	-	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.59	-	-	-	-	-
Pot Cap-1 Maneuver	418	0	-	0	0	-
Stage 1	744	0	-	0	0	-
Stage 2	671	0	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	418	-	-	-	-	-
Mov Cap-2 Maneuver	418	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	671	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 418	-
HCM Lane V/C Ratio	- 0.091	-
HCM Control Delay (s)	- 14.5	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.3	-

Intersection												
Int Delay, s/veh	51.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕					↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	76	34	186	0	0	0	1	168	6	501	149	38
Future Vol, veh/h	76	34	186	0	0	0	1	168	6	501	149	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	85	-	120	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	80	36	196	0	0	0	1	177	6	527	157	40

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	1302	1396	79				197	0	0	183	0	0
Stage 1	1211	1211	-				-	-	-	-	-	-
Stage 2	91	185	-				-	-	-	-	-	-
Critical Hdwy	6.96	6.66	7.06				4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	5.96	5.66	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.96	5.66	-				-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38				2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	145	133	946				1330	-	-	1347	-	-
Stage 1	233	242	-				-	-	-	-	-	-
Stage 2	905	731	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	88	0	946				1330	-	-	1347	-	-
Mov Cap-2 Maneuver	88	0	-				-	-	-	-	-	-
Stage 1	233	0	-				-	-	-	-	-	-
Stage 2	551	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	186.7	0	6.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1330	-	-	247	1347	-	-
HCM Lane V/C Ratio	0.001	-	-	1.261	0.392	-	-
HCM Control Delay (s)	7.7	-	-	186.7	9.4	-	-
HCM Lane LOS	A	-	-	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	15.6	1.9	-	-

Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	129	0	0	52	1	188
Future Vol, veh/h	129	0	0	52	1	188
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	147	0	0	59	1	214

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	207 148
Stage 1	-	-	-	-	147 -
Stage 2	-	-	-	-	60 -
Critical Hdwy	-	-	-	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.527 3.327
Pot Cap-1 Maneuver	-	0	0	-	779 896
Stage 1	-	0	0	-	878 -
Stage 2	-	0	0	-	960 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	778 895
Mov Cap-2 Maneuver	-	-	-	-	778 -
Stage 1	-	-	-	-	878 -
Stage 2	-	-	-	-	959 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	778	895	-	-
HCM Lane V/C Ratio	0.001	0.239	-	-
HCM Control Delay (s)	9.6	10.3	-	-
HCM Lane LOS	A	B	-	-
HCM 95th %tile Q(veh)	0	0.9	-	-

Intersection												
Intersection Delay, s/veh	18.2											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑			↕			↕	
Traffic Vol, veh/h	0	123	38	239	142	0	11	0	262	179	121	47
Future Vol, veh/h	0	123	38	239	142	0	11	0	262	179	121	47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	135	42	263	156	0	12	0	288	197	133	52
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	12.9	17.4	15.9	23.4
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	0%	0%	100%	0%	52%
Vol Thru, %	0%	100%	0%	0%	100%	35%
Vol Right, %	96%	0%	100%	0%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	273	123	38	239	142	347
LT Vol	11	0	0	239	0	179
Through Vol	0	123	0	0	142	121
RT Vol	262	0	38	0	0	47
Lane Flow Rate	300	135	42	263	156	381
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.519	0.29	0.081	0.561	0.311	0.696
Departure Headway (Hd)	6.23	7.728	7.005	7.688	7.173	6.568
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	576	464	509	467	499	549
Service Time	4.296	5.506	4.782	5.454	4.939	4.626
HCM Lane V/C Ratio	0.521	0.291	0.083	0.563	0.313	0.694
HCM Control Delay	15.9	13.7	10.4	19.9	13.2	23.4
HCM Lane LOS	C	B	B	C	B	C
HCM 95th-tile Q	3	1.2	0.3	3.4	1.3	5.4

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑			↘			↕				
Traffic Vol, veh/h	173	394	0	0	346	210	37	0	128	0	0	0
Future Vol, veh/h	173	394	0	0	346	210	37	0	128	0	0	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	182	415	0	0	364	221	39	0	135	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	587	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	983	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	983	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	2.9	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	372	983	-	-	-
HCM Lane V/C Ratio	0.467	0.185	-	-	-
HCM Control Delay (s)	22.9	9.5	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	2.4	0.7	-	-	-

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗			↘	
Traffic Vol, veh/h	136	189	0	0	190	15
Future Vol, veh/h	136	189	0	0	190	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	146	203	0	0	204	16

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	146	146
Stage 1	-	-	146	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	842	896
Stage 1	-	-	876	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	842	896
Mov Cap-2 Maneuver	-	-	842	-
Stage 1	-	-	876	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	10.7
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	846	-	-
HCM Lane V/C Ratio	0.261	-	-
HCM Control Delay (s)	10.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1	-	-

Intersection						
Int Delay, s/veh	15.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	180	63	142	178	8	650
Future Vol, veh/h	180	63	142	178	8	650
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	186	65	146	184	8	670

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	251	0	695 219
Stage 1	-	-	-	-	219 -
Stage 2	-	-	-	-	476 -
Critical Hdwy	-	-	4.19	-	6.49 6.29
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	-	-	2.281	-	3.581 3.381
Pot Cap-1 Maneuver	-	-	1275	-	398 803
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	611 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1275	-	347 803
Mov Cap-2 Maneuver	-	-	-	-	347 -
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	533 -

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	27.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	803	-	-	1275	-
HCM Lane V/C Ratio	0.024	0.834	-	-	0.115	-
HCM Control Delay (s)	15.6	27.7	-	-	8.2	0
HCM Lane LOS	C	D	-	-	A	A
HCM 95th %tile Q(veh)	0.1	9.6	-	-	0.4	-

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Vol, veh/h	811	0	0	814	44	86
Future Vol, veh/h	811	0	0	814	44	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	932	0	0	936	51	99

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	1400 466
Stage 1	-	-	-	-	932 -
Stage 2	-	-	-	-	468 -
Critical Hdwy	-	-	-	-	6.96 7.06
Critical Hdwy Stg 1	-	-	-	-	5.96 -
Critical Hdwy Stg 2	-	-	-	-	5.96 -
Follow-up Hdwy	-	-	-	-	3.58 3.38
Pot Cap-1 Maneuver	-	0	0	-	124 527
Stage 1	-	0	0	-	330 -
Stage 2	-	0	0	-	580 -
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	124 527
Mov Cap-2 Maneuver	-	-	-	-	124 -
Stage 1	-	-	-	-	330 -
Stage 2	-	-	-	-	580 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	124	527	-	-
HCM Lane V/C Ratio	0.408	0.188	-	-
HCM Control Delay (s)	52.7	13.4	-	-
HCM Lane LOS	F	B	-	-
HCM 95th %tile Q(veh)	1.7	0.7	-	-

General Plan Buildout Conditions

Intersection												
Int Delay, s/veh	66.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							↗	↘	↕		↕	↗
Traffic Vol, veh/h	0	0	0	0	0	846	422	590	0	0	1082	196
Future Vol, veh/h	0	0	0	0	0	846	422	590	0	0	1082	196
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	180	-	-	-	-	120
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	0	0	0	0	920	459	641	0	0	1176	213

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	- 321 1389	0 - - - 0
Stage 1	-	- - -	- - - - -
Stage 2	-	- - -	- - - - -
Critical Hdwy	-	- 7.08 4.28	- - - - -
Critical Hdwy Stg 1	-	- - -	- - - - -
Critical Hdwy Stg 2	-	- - -	- - - - -
Follow-up Hdwy	-	- 3.39 2.29	- - - - -
Pot Cap-1 Maneuver	0	0 ~ 655 ~ 454	- 0 0 - -
Stage 1	0	0 - -	0 0 - -
Stage 2	0	0 - -	0 0 - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	-	0 ~ 655 ~ 454	- - - - -
Mov Cap-2 Maneuver	-	0 - -	- - - - -
Stage 1	-	0 - -	- - - - -
Stage 2	-	0 - -	- - - - -

Approach	WB	NB	SB
HCM Control Delay, s	209.7	31.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	~ 454	- 655	-	-
HCM Lane V/C Ratio	1.01	- 1.404	-	-
HCM Control Delay (s)	75.3	- 209.7	-	-
HCM Lane LOS	F	- F	-	-
HCM 95th %tile Q(veh)	13.4	- 41.4	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	26.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵		↑↑			↑↑
Traffic Vol, veh/h	126	0	1012	0	0	1076
Future Vol, veh/h	126	0	1012	0	0	1076
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	137	0	1100	0	0	1170

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1685	-	0	-	-	-
Stage 1	1100	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.98	-	-	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.59	-	-	-	-	-
Pot Cap-1 Maneuver	~ 79	0	-	0	0	-
Stage 1	266	0	-	0	0	-
Stage 2	501	0	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 79	-	-	-	-	-
Mov Cap-2 Maneuver	~ 79	-	-	-	-	-
Stage 1	266	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 466.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 79	-
HCM Lane V/C Ratio	- 1.734	-
HCM Control Delay (s)	-\$ 466.2	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 11.7	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	4059.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔					↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	260	42	168	0	0	0	21	752	2	577	297	329
Future Vol, veh/h	260	42	168	0	0	0	21	752	2	577	297	329
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	85	-	120	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	283	46	183	0	0	0	23	817	2	627	323	358

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	2032	2442	162	681	0	0	819	0	0
Stage 1	1577	1577	-	-	-	-	-	-	-
Stage 2	455	865	-	-	-	-	-	-	-
Critical Hdwy	7	6.7	7.1	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	6	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.6	4.1	3.4	2.3	-	-	2.3	-	-
Pot Cap-1 Maneuver	~ 45	~ 28	830	856	-	-	756	-	-
Stage 1	~ 144	156	-	-	-	-	-	-	-
Stage 2	583	351	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	~ 7	0	830	856	-	-	756	-	-
Mov Cap-2 Maneuver	~ 7	0	-	-	-	-	-	-	-
Stage 1	~ 140	0	-	-	-	-	-	-	-
Stage 2	~ 100	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay \$	21110.7	0.3	13.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	856	-	-	11	756	-	-
HCM Lane V/C Ratio	0.027	-	-	46.443	0.83	-	-
HCM Control Delay (s)	9.3	-	-	21110.7	28.4	-	-
HCM Lane LOS	A	-	-	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	65.4	9.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	↗
Traffic Vol, veh/h	425	0	0	357	4	128
Future Vol, veh/h	425	0	0	357	4	128
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	462	0	0	388	4	139

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	851 463
Stage 1	-	-	-	-	462 -
Stage 2	-	-	-	-	389 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	-	0	0	-	330 599
Stage 1	-	0	0	-	634 -
Stage 2	-	0	0	-	685 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	330 598
Mov Cap-2 Maneuver	-	-	-	-	330 -
Stage 1	-	-	-	-	634 -
Stage 2	-	-	-	-	684 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	330	598	-	-
HCM Lane V/C Ratio	0.013	0.233	-	-
HCM Control Delay (s)	16.1	12.8	-	-
HCM Lane LOS	C	B	-	-
HCM 95th %tile Q(veh)	0	0.9	-	-

Intersection												
Intersection Delay, s/veh	67.7											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑			↕			↕	
Traffic Vol, veh/h	0	426	143	492	216	0	41	0	606	244	232	93
Future Vol, veh/h	0	426	143	492	216	0	41	0	606	244	232	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	463	155	535	235	0	45	0	659	265	252	101
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	139	208.6	385.4	336.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	0%	0%	100%	0%	43%
Vol Thru, %	0%	100%	0%	0%	100%	41%
Vol Right, %	94%	0%	100%	0%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	647	426	143	492	216	569
LT Vol	41	0	0	492	0	244
Through Vol	0	426	0	0	216	232
RT Vol	606	0	143	0	0	93
Lane Flow Rate	703	463	155	535	235	618
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.764	1.253	0.391	1.515	0.632	1.643
Departure Headway (Hd)	12.268	13.614	12.86	13.974	13.436	13.23
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	302	273	283	267	272	278
Service Time	10.268	11.314	10.56	11.674	11.136	11.23
HCM Lane V/C Ratio	2.328	1.696	0.548	2.004	0.864	2.223
HCM Control Delay	385.4	177.7	23.6	284.1	36.7	336.2
HCM Lane LOS	F	F	C	F	E	F
HCM 95th-tile Q	33.8	16.1	1.8	23	3.9	27.9

Intersection												
Int Delay, s/veh	210.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	369	903	0	0	670	260	36	0	243	0	0	0
Future Vol, veh/h	369	903	0	0	670	260	36	0	243	0	0	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	401	982	0	0	728	283	39	0	264	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1013	0	- - - 0 2656 2797 984
Stage 1	-	-	- - - 1784 1784 -
Stage 2	-	-	- - - 872 1013 -
Critical Hdwy	4.13	-	- - - 6.43 6.53 6.23
Critical Hdwy Stg 1	-	-	- - - 5.43 5.53 -
Critical Hdwy Stg 2	-	-	- - - 5.43 5.53 -
Follow-up Hdwy	2.227	-	- - - 3.527 4.027 3.327
Pot Cap-1 Maneuver	681	- 0 0	- - - ~ 25 18 300
Stage 1	-	- 0 0	- - - 147 133 -
Stage 2	-	- 0 0	- - - 407 315 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	681	- - -	- - - ~ 10 0 299
Mov Cap-2 Maneuver	-	- - -	- - - ~ 10 0 -
Stage 1	-	- - -	- - - 60 0 -
Stage 2	-	- - -	- - - 406 0 -

Approach	EB	WB	NB
HCM Control Delay, s	5.1	0	\$ 1847.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	63	681	-	-	-
HCM Lane V/C Ratio	4.814	0.589	-	-	-
HCM Control Delay (s)	\$ 1847.6	17.6	-	-	-
HCM Lane LOS	F	C	-	-	-
HCM 95th %tile Q(veh)	33.4	3.9	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	13.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗			↘	
Traffic Vol, veh/h	254	585	0	0	541	22
Future Vol, veh/h	254	585	0	0	541	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	276	636	0	0	588	24

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	276	276
Stage 1	-	-	276	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	712	760
Stage 1	-	-	768	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	712	760
Mov Cap-2 Maneuver	-	-	712	-
Stage 1	-	-	768	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	32.5
HCM LOS		D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	714	-	-
HCM Lane V/C Ratio	0.857	-	-
HCM Control Delay (s)	32.5	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	10.1	-	-

Intersection						
Int Delay, s/veh	194.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	756	225	108	874	128	557
Future Vol, veh/h	756	225	108	874	128	557
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	822	245	117	950	139	605

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1067	0	2129 945
Stage 1	-	-	-	-	945 -
Stage 2	-	-	-	-	1184 -
Critical Hdwy	-	-	4.22	-	6.52 6.32
Critical Hdwy Stg 1	-	-	-	-	5.52 -
Critical Hdwy Stg 2	-	-	-	-	5.52 -
Follow-up Hdwy	-	-	2.308	-	3.608 3.408
Pot Cap-1 Maneuver	-	-	617	-	~ 51 ~ 304
Stage 1	-	-	-	-	362 -
Stage 2	-	-	-	-	277 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	617	-	~ 30 ~ 304
Mov Cap-2 Maneuver	-	-	-	-	~ 30 -
Stage 1	-	-	-	-	362 -
Stage 2	-	-	-	-	166 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	\$ 750.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	30	304	-	-	617	-
HCM Lane V/C Ratio	4.638	1.992	-	-	0.19	-
HCM Control Delay (s)	\$ 1902.8	\$ 485.7	-	-	12.2	0
HCM Lane LOS	F	F	-	-	B	A
HCM 95th %tile Q(veh)	16.8	43	-	-	0.7	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	130.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Vol, veh/h	1150	0	0	1739	176	455
Future Vol, veh/h	1150	0	0	1739	176	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	1250	0	0	1890	191	495

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	2195 625
Stage 1	-	-	-	-	1250 -
Stage 2	-	-	-	-	945 -
Critical Hdwy	-	-	-	-	7 7.1
Critical Hdwy Stg 1	-	-	-	-	6 -
Critical Hdwy Stg 2	-	-	-	-	6 -
Follow-up Hdwy	-	-	-	-	3.6 3.4
Pot Cap-1 Maneuver	-	0	0	-	~ 35 ~ 409
Stage 1	-	0	0	-	218 -
Stage 2	-	0	0	-	320 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	~ 35 ~ 409
Mov Cap-2 Maneuver	-	-	-	-	~ 35 -
Stage 1	-	-	-	-	218 -
Stage 2	-	-	-	-	320 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 728
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	35	409	-	-
HCM Lane V/C Ratio	5.466	1.209	-	-
HCM Control Delay (s)	\$ 2236.3	144.6	-	-
HCM Lane LOS	F	F	-	-
HCM 95th %tile Q(veh)	22.7	20	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	86.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							↗	↘	↕		↕	↗
Traffic Vol, veh/h	0	0	0	0	0	849	279	799	0	0	1268	181
Future Vol, veh/h	0	0	0	0	0	849	279	799	0	0	1268	181
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	180	-	-	-	-	120
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	0	0	0	0	923	303	868	0	0	1378	197

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	434 1575 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.08 4.28
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.39 2.29
Pot Cap-1 Maneuver	0	0	~ 551 383
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	0	~ 551 383
Mov Cap-2 Maneuver	-	0	-
Stage 1	-	0	-
Stage 2	-	0	-

Approach	WB	NB	SB
HCM Control Delay, s	\$ 330.6	10.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	383	-	551	-
HCM Lane V/C Ratio	0.792	-	1.675	-
HCM Control Delay (s)	42	-	\$ 330.6	-
HCM Lane LOS	E	-	F	-
HCM 95th %tile Q(veh)	6.8	-	53	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	18.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗↗			↗↗
Traffic Vol, veh/h	94	0	1078	0	0	1264
Future Vol, veh/h	94	0	1078	0	0	1264
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	102	0	1172	0	0	1374

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1859	-	0
Stage 1	1172	-	-
Stage 2	687	-	-
Critical Hdwy	6.98	-	-
Critical Hdwy Stg 1	5.98	-	-
Critical Hdwy Stg 2	5.98	-	-
Follow-up Hdwy	3.59	-	-
Pot Cap-1 Maneuver	~ 60	0	0
Stage 1	243	0	0
Stage 2	442	0	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	~ 60	-	-
Mov Cap-2 Maneuver	~ 60	-	-
Stage 1	243	-	-
Stage 2	442	-	-

Approach	WB	NB	SB
HCM Control Delay, s	489.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 60	-
HCM Lane V/C Ratio	- 1.703	-
HCM Control Delay (s)	- \$ 489.6	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 9.4	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	9027.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔					↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	442	46	613	0	0	0	10	637	12	617	370	370
Future Vol, veh/h	442	46	613	0	0	0	10	637	12	617	370	370
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	85	-	120	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	480	50	666	0	0	0	11	692	13	671	402	402

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	2112	2471	201				804	0	0	705	0	0
Stage 1	1744	1744	-				-	-	-	-	-	-
Stage 2	368	727	-				-	-	-	-	-	-
Critical Hdwy	6.96	6.66	7.06				4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	5.96	5.66	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.96	5.66	-				-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38				2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	~ 41	~ 27	788				778	-	-	850	-	-
Stage 1	~ 118	130	-				-	-	-	-	-	-
Stage 2	653	413	-				-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 9	0	788				778	-	-	850	-	-
Mov Cap-2 Maneuver	~ 9	0	-				-	-	-	-	-	-
Stage 1	~ 116	0	-				-	-	-	-	-	-
Stage 2	~ 138	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay \$	25544.1	0.1	10.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	778	-	-	21	850	-	-
HCM Lane V/C Ratio	0.014	-	-	56.988	0.789	-	-
HCM Control Delay (s)	9.7	-	-	\$ 25544.1	23.1	-	-
HCM Lane LOS	A	-	-	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	150	8.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	481	0	0	477	4	236
Future Vol, veh/h	481	0	0	477	4	236
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	523	0	0	518	4	257

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	1042 524
Stage 1	-	-	-	-	523 -
Stage 2	-	-	-	-	519 -
Critical Hdwy	-	-	-	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.527 3.327
Pot Cap-1 Maneuver	-	0	0	-	253 551
Stage 1	-	0	0	-	593 -
Stage 2	-	0	0	-	595 -
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	253 550
Mov Cap-2 Maneuver	-	-	-	-	253 -
Stage 1	-	-	-	-	593 -
Stage 2	-	-	-	-	594 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	253	550	-	-
HCM Lane V/C Ratio	0.017	0.466	-	-
HCM Control Delay (s)	19.5	17.1	-	-
HCM Lane LOS	C	C	-	-
HCM 95th %tile Q(veh)	0.1	2.5	-	-

Intersection												
Intersection Delay, s/veh	35.2											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑			↕			↕	
Traffic Vol, veh/h	0	255	156	558	390	0	54	0	550	185	248	114
Future Vol, veh/h	0	255	156	558	390	0	54	0	550	185	248	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	277	170	607	424	0	59	0	598	201	270	124
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	35.5	253.8	304.8	276.3
HCM LOS	E	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	0%	0%	100%	0%	34%
Vol Thru, %	0%	100%	0%	0%	100%	45%
Vol Right, %	91%	0%	100%	0%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	604	255	156	558	390	547
LT Vol	54	0	0	558	0	185
Through Vol	0	255	0	0	390	248
RT Vol	550	0	156	0	0	114
Lane Flow Rate	657	277	170	607	424	595
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.594	0.75	0.426	1.675	1.112	1.522
Departure Headway (Hd)	9.969	12.095	11.346	12.37	11.835	10.64
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	374	302	320	297	309	345
Service Time	7.969	9.795	9.046	10.07	9.535	8.64
HCM Lane V/C Ratio	1.757	0.917	0.531	2.044	1.372	1.725
HCM Control Delay	304.8	43.7	22.2	346.9	120.7	276.3
HCM Lane LOS	F	E	C	F	F	F
HCM 95th-tile Q	33.3	5.6	2	30.5	13.6	28.8

Intersection												
Int Delay, s/veh	525											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↘			↔				
Traffic Vol, veh/h	318	675	0	0	832	254	117	0	190	0	0	0
Future Vol, veh/h	318	675	0	0	832	254	117	0	190	0	0	0
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	346	734	0	0	904	276	127	0	207	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	1182	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	587	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	587	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	6.3	0	\$ 4059.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	35	587	-	-	-
HCM Lane V/C Ratio	9.534	0.589	-	-	-
HCM Control Delay (s)	\$ 4059.9	19.5	-	-	-
HCM Lane LOS	F	C	-	-	-
HCM 95th %tile Q(veh)	40.4	3.8	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	15					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗			↘	
Traffic Vol, veh/h	265	640	0	0	554	25
Future Vol, veh/h	265	640	0	0	554	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	288	696	0	0	602	27

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	288	288
Stage 1	-	-	288	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	698	746
Stage 1	-	-	756	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	698	746
Mov Cap-2 Maneuver	-	-	698	-
Stage 1	-	-	756	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	38.4
HCM LOS		E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	700	-	-
HCM Lane V/C Ratio	0.899	-	-
HCM Control Delay (s)	38.4	-	-
HCM Lane LOS	E	-	-
HCM 95th %tile Q(veh)	11.6	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	818	286	175	1089	30	817
Future Vol, veh/h	818	286	175	1089	30	817
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	889	311	190	1184	33	888

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1200	0	2609 1045
Stage 1	-	-	-	-	1045 -
Stage 2	-	-	-	-	1564 -
Critical Hdwy	-	-	4.19	-	6.49 6.29
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	-	-	2.281	-	3.581 3.381
Pot Cap-1 Maneuver	-	-	558	-	~ 26 ~ 269
Stage 1	-	-	-	-	329 -
Stage 2	-	-	-	-	183 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	558	-	0 ~ 269
Mov Cap-2 Maneuver	-	-	-	-	0 -
Stage 1	-	-	-	-	329 -
Stage 2	-	-	-	-	~ 1 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2	
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	269	-	-	558	-
HCM Lane V/C Ratio	-	3.301	-	-	0.341	-
HCM Control Delay (s)	\$	1072.8	-	-	14.8	0
HCM Lane LOS	-	F	-	-	B	A
HCM 95th %tile Q(veh)	-	81.5	-	-	1.5	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	155.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↘
Traffic Vol, veh/h	1490	0	0	1777	148	205
Future Vol, veh/h	1490	0	0	1777	148	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	1620	0	0	1932	161	223

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	2586 810
Stage 1	-	-	-	-	1620 -
Stage 2	-	-	-	-	966 -
Critical Hdwy	-	-	-	-	6.96 7.06
Critical Hdwy Stg 1	-	-	-	-	5.96 -
Critical Hdwy Stg 2	-	-	-	-	5.96 -
Follow-up Hdwy	-	-	-	-	3.58 3.38
Pot Cap-1 Maneuver	-	0	0	-	~ 19 311
Stage 1	-	0	0	-	~ 139 -
Stage 2	-	0	0	-	316 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	~ 19 311
Mov Cap-2 Maneuver	-	-	-	-	~ 19 -
Stage 1	-	-	-	-	~ 139 -
Stage 2	-	-	-	-	316 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 1599.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	19	311	-	-
HCM Lane V/C Ratio	8.467	0.716	-	-
HCM Control Delay (s)	\$ 3757.2	41.1	-	-
HCM Lane LOS	F	E	-	-
HCM 95th %tile Q(veh)	20.7	5.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix J: City of Fowler Background Report



Background Report

City of Fowler **General Plan Update**

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1. INTRODUCTION

California law requires that each county and city in the state develop and adopt a general plan. The general plan typically provides both an assessment of community needs and a statement of development policy, including diagrams and text setting forth community values, guiding principles, objectives, standards, and specific policy or program proposals. It is a comprehensive long-term plan for managing the physical development of the community. In this sense, it is a “blueprint” for the future.

PURPOSE

The Background Report (Report) provides a snapshot in time of the City of Fowler’s existing conditions. Its purpose as a reporting document is to inform community members, City staff, and elected officials of the baseline conditions in the City of Fowler and the surrounding planning area. This Report provides useful information for future environmental analysis and informs the policies in the 2040 Fowler General Plan. The data and information in the Report are generally current as of 2019.

REPORT ORGANIZATION

This Report is organized by topic to generally align with the chapters of the General Plan. Some topics have been combined where common themes or issues exist. Analysis in each chapter is communicated through text, tables, diagrams, and maps. The chapters of this Report include:

Chapter 1: Introduction. Provides an overview of the Report’s organization.

Chapter 2: The 2040 General Plan. Describes the General Plan update process and provides an overview of the Planning Area, Sphere of Influence, expansion areas, and City Limits. This information provides context for the extent of the data covered in subsequent chapters.

Chapter 3: Land Use. Discusses historic and projected population growth, existing land uses within the Planning Area as of 2019, and the presence of disadvantaged communities.

Chapter 4: Transportation and Mobility. Provides an overview of the City’s roadway system, commute patterns and trends, and alternative modes of transportation.

Chapter 5: Open Space and Conservation. Describes Fowler’s existing landscape, the use of existing parks and open space, air quality, and natural resources including biological and cultural resources.

Chapter 6: Public Facilities and Services. Addresses public facilities and services including education, library, law enforcement, fire protection and emergency response, landscape and lighting districts, water, wastewater, stormwater, and solid waste.

Chapter 7: Hazards and Safety. Discusses the potential for geologic and seismic issues, flooding, hazardous materials and contaminated sites, noise, and climate adaptation.

Chapter 8: Economic Development. Provides a high-level overview of current conditions contributing to economic development within the Planning Area.

Appendices. The appendices of this Report are supplementary material that may be helpful in providing a more comprehensive understanding of the topics discussed above and include:

Appendix A: Special Status Species

Appendix B: California Air Resources Board (CARB) Air Quality Attainment Standards

Appendix C: Contaminated Sites Cleanup Status

Appendix D: Noise Regulations

2. THE 2040 FOWLER GENERAL PLAN

The City of Fowler incorporated in 1908 and adopted its first comprehensive General Plan in 1976. In 2004, the City updated the Land Use and Circulation elements and added an Economic Development chapter. These changes were the first updates to the General Plan document since its adoption in 1976.

The Housing Element of the Fowler General Plan was more recently adopted in April of 2016, as required by the Government Code. It was updated as part of a coordinated effort with Fresno County and 12 of the 15 cities in Fresno County. The Multi-Jurisdictional Housing Element created a regional plan for addressing the housing needs of Fresno County. The 2040 City of Fowler General Plan (Fowler General Plan) incorporates the adopted Multi-Jurisdictional Housing Element by reference.

While certain chapters have been revised or added, the City has not completed a comprehensive update of its General Plan since original adoption. Additionally, new laws affecting General Plans have been passed, new social and environmental issues have emerged, and new planning strategies and practices have been developed.

The Fowler General Plan looks ahead to the year 2040, making adjustments to policies and land uses based on current issues and emergent trends. The update also brings the General Plan into compliance with new laws related to environmental justice, complete streets, flood and fire protection, and climate adaptation. The Fowler General Plan comprehensively assesses current conditions and allows today's residents to express a vision for the future.

PLANNING BOUNDARIES

This section describes the major political and geographic boundaries that influence the long-term growth and development of Fowler.

The Planning Area

The General Plan addresses all lands located within the City limits and an area beyond the City that, in the City's judgment, bears relation to its planning efforts. This entire area is referred to as the General Plan Planning Area and encompasses approximately 5,690 acres, or roughly nine square miles, inclusive of public rights-of-way. The Planning Area includes the existing City limits, the Sphere of Influence (SOI), and approximately 1,195 acres beyond the SOI for a potential expansion area, as illustrated in Figure 2-1: Planning Boundaries. The Planning Area includes the area into which the SOI and, subsequently, the incorporated City boundaries may eventually expand, subject to approval by the Fresno Local Agency Formation Commission (Fresno LAFCo). Fowler has an interest in guiding land use and circulation decisions within the Planning Area because of the impacts that decisions made for these lands may have on quality of life in the City.

The boundary of the Planning Area is determined in accordance with State law requiring each city to include in its General Plan all territory within the boundaries of the incorporated area as well as "any land outside

its boundaries which in the planning agency's judgement bears relation to its planning" (California Government Code Section 65300).

The General Plan includes goals and policies for the area within the incorporated boundaries of the City of Fowler. In addition, the General Plan can set policy for the City's SOI and a broader Planning Area in case of future annexation and to help coordinate long-term development policy with adjacent jurisdictions.

Expansion Areas

The potential expansion area includes the approximately 1,195 acres located beyond the existing SOI for the City of Fowler. This area has been included in the Planning Area as it represents land outside the existing City limits and SOI boundaries which, in the City's judgement, bears relation to its planning efforts. The expansion area is comprised of three sections of land, as shown on **Figure 2-1: Planning Boundaries**.

The northwestern expansion area would extend the City's potential for expansion west to Minnewawa and Kenneth Avenues, respectively. This expansion area would capture the SR 99 and Clovis Avenue interchange in a more effective way than the current SOI boundary does.

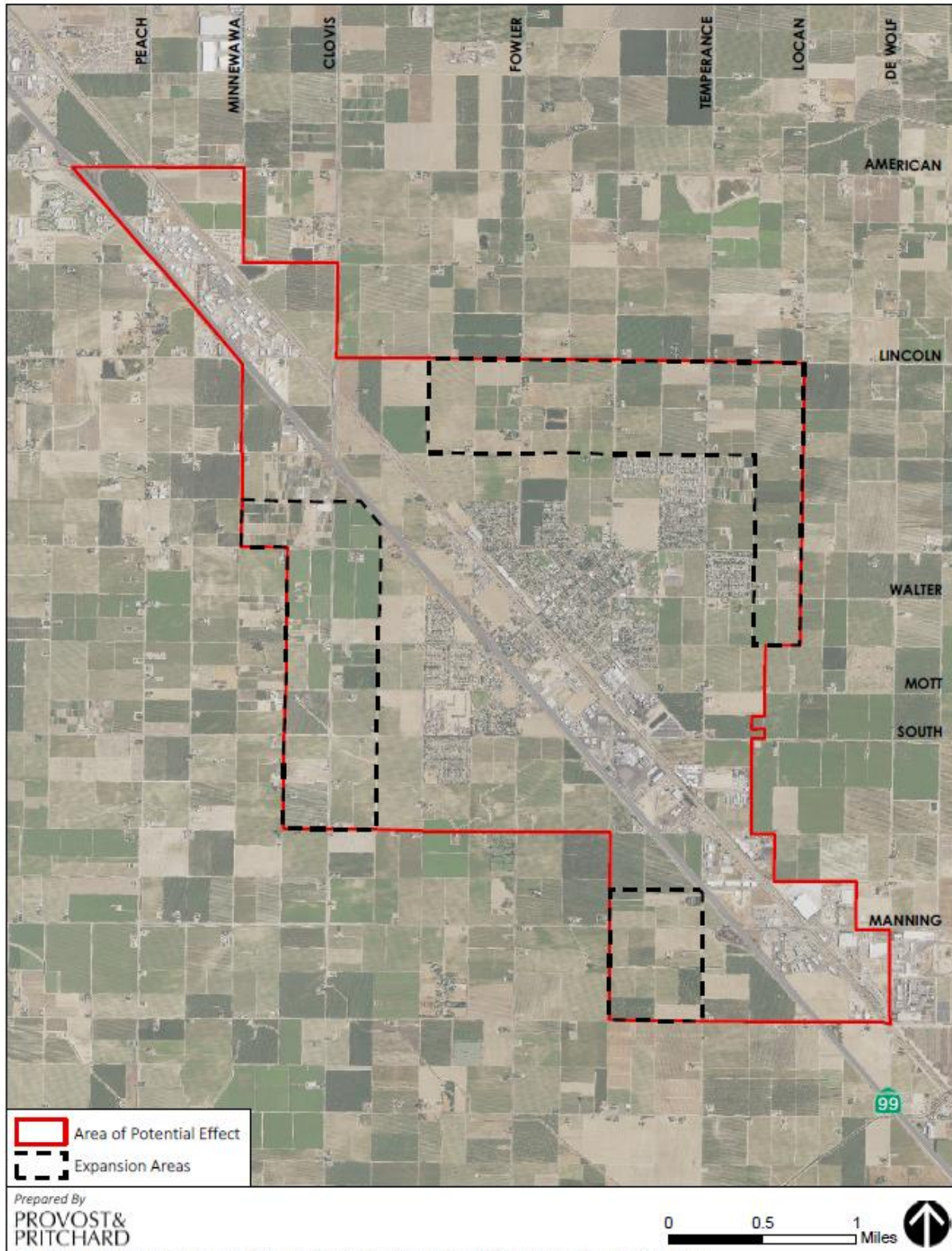
The southern expansion area proposes to expand the City's potential for expansion to Temperance and Manning Avenue south to Springfield Avenue and connecting back to SR 99 squaring off the southern boundary of the City and, again, taking advantage of the SR 99 and Manning Avenue interchange and entrance into the southern portion of the City.

The northeastern expansion area proposes to expand the City's potential for expansion to Lincoln on the north and Locan on the east.

Sphere of Influence

A Sphere of Influence (SOI) indicates an area of service provision and likely annexation by the city, although it is typically outside of the city limits and usually made up of unincorporated land administered by a county. The purpose of a SOI is to prevent overlapping jurisdictions and duplication of services, and thereby ensure the efficient provision of services while discouraging urban sprawl and the premature conversion of agricultural and open space lands. Local Agency Formation Commissions (LAFCo) determine SOIs for all local governmental agencies and are required to review the boundaries every five years. Fowler applies for SOI changes to the Fresno LAFCo

Figure 2-1: Planning Boundaries



3. LAND USE

The purpose of this chapter is to briefly describe the historical and existing development patterns in the City of Fowler, as well as basic trends in development. This chapter will also briefly describe the regulatory context, including the zoning ordinance that is in place today (as of 2019).

GROWTH TRENDS

Historical Growth

The origins of Fowler can be traced to 1872 with the opening of a railroad switch yard, known as the Fowler switch. At the time, the Central Pacific Railroad was in the process of expanding southeast of Fresno. Prominent State Senator, Thomas Fowler, used his influence to build a siding¹ to his and other ranches for the purpose of shipping cattle. A post office was soon built at the Fowler switch, marking the beginning of community growth and development.

The area around Fowler was used primarily for grazing until the introduction of irrigation in the 1880s. With a steady water supply, wheat farming was introduced. A short time later, grape vineyards and raisin processing were introduced. In 1889, the Fowler Fruit and Raisin Packing Company was built, establishing Fowler as a major raisin and dried fruit processing center.² The City was incorporated in 1908.

As of 2004, Fowler had approximately 1,445 homes and the population had increased from 2,245 in 1974,³ to 4,100 in 2004,⁴ nearly doubling in size over 30 years. Since 2004, Fowler has experienced continued growth in the form of new dwelling unit production at an average annual rate of 2.4 percent, according to building permits issued by the City. As of 2019, Fowler's City limits are mostly built out or have been approved for future development. As of January 1, 2019, the City contained 2,061 housing units and 6,605 residents.⁵

Projected Growth

The City has grown at a slower rate than surrounding cities over the past decade and is expected to maintain a 2-3% growth rate over the planning period. This would be consistent with overall Fresno County growth. At a 2% growth rate, the population of the City would increase from 4,100 in 2004 to approximately 6,214 and 8,364 in 2025 and 2040, respectively. At 3%, the population would increase to 7,707 and 11,883 in 2025 and 2040, respectively.⁶

¹ Rail siding is a railroad term used to describe a section of track off the main line where rail cars are sometimes dropped or exchanged.

² 1974 Fowler General Plan. Page 9.

³ Ibid.

⁴ (City of Fowler, 2004, p. 4)

⁵ Department of Finance, E-5: City/County Population and Housing Estimates, 1/1/2019

⁶ The 2-3% growth rate is based on City of Fowler growth data tracking dwelling units added annually. California Department of Finance estimates a 1.46% growth rate for the City of Fowler, which would increase to a population of 7,041 in 2025 and a population of 8,751 in 2040.

Growth Management

As part of the 2004 update to the 2025 General Plan, the City established growth management policies that established limits to urban growth. The intent of these policies was to maintain Fowler as a freestanding city surrounded by agricultural land and maintain quality of life within the community. Implementation of these Plan policies included the adoption of a Growth Management Ordinance in June 2004.

The Growth Management Ordinance set growth objectives for the City, limited growth rates to certain percentages per year, and set limits on growth rates averaged over five-year periods. This ordinance was implemented until the passing of SB 330, the Housing Crisis Act of 2019, which prohibits a city or county from enacting development policies, standards, or conditions that could result in building moratoriums or permit caps. The ordinance did not comply with the intent of SB 330, and enforcement was suspended in February 2020.

While the Ordinance was enforced, annual reports were prepared to help monitor growth rates. This was done through the tracking of building permits. At no time did Fowler's growth rate exceed the limits established by the Ordinance.

In order to meet the requirements of SB33, policies in the 2040 General Plan have been revised to guide development through the use of urban growth tier boundaries, which focus urban growth to certain areas of the City without the potential use of permit caps or building moratoriums.

EXISTING LAND USE

Existing land uses represent the uses that are currently occupying a property. These uses are distinguished from the zoning district or planned land use for a property, as often, the existing use on-site differs from what may be allowed for new development on a property. **Table 3-1** shows the breakdown of the existing land uses within the City limits, SOI, Expansion Area, and total Planning Area. Residential uses make up the largest category of uses in the City limits, with nearly 31 percent, followed by vacant lands at 22 percent. Agricultural uses make up a significant portion of both the SOI and Expansion Area, at 84.2 percent and 89.7 percent, respectively. The distribution of the existing land uses is shown in **Figure 3-1** through **Figure 3-4**.

Table 3-1: Existing Land Uses

Existing Land Use	City Limits Acres (%)	Sphere of Influence ^a Acres (%)	Expansion Area ^b Acres (%)	Planning Area ^c Acres (%)
Residential Uses	378.1 (30.8%)	46.1 (1.8%)	17.7 (2.8%)	441.9 (9.9%)
1 Unit	334.9	41.6	17.8	394.35
2-4 Units	14.2	4.0	5.0	23.2
5+ Units	24.0	0.5	-	24.5
Manufactured Home Park	5.0	-	-	5.0
Commercial and Office Uses	69.1 (5.6%)	29.6 (1.1%)	23.9 (3.8%)	122.6 (2.7%)
Commercial	3.5	-	-	3.5
Day Care	8.0	5.2	-	13.2
Food Store	0.3	-	-	0.3
Fraternal Lodge	18.8	-	-	18.8
Funeral Home	1.0	-	-	1.0
Garage	0.4	1.4	-	1.9
General Office	8.7	3.2	5.1	17.0
Medical-Dental Office	4.9	5.7	-	10.7
Motel	5.1	-	-	5.1
Parking Lot	5.3	-	-	5.3
Plant Nursery	1.6	1.1	-	2.7
Restaurant	-	13.0	18.8	31.8
Service Station	8.5	-	-	8.5
Used Car Lot	1.9	-	-	1.9
Industrial Uses	223.7 (18.2%)	197.1 (7.6%)	0.0 (0%)	420.8 (9.4%)
Cold Storage	8.5	-	-	8.5
Factory	12.2	-	-	12.2
Freight Truck Terminal	4.2	-	-	4.2
Light Industrial Facility	32.7	44.2	-	76.9
Packing House	45.3	9.5	-	54.8
Warehouse	120.8	143.4	-	264.2
Public/Quasi-Public and Institutional Uses	191.3 (15.6%)	29.9 (1.2%)	0.0 (0%)	221.2 (5%)
Church	18.4	-	-	18.4
Government	1.7	-	-	1.7
Health Facility	2.4	-	-	2.4
Library	0.7	-	-	0.7
Oil, Gas	4.6	-	-	4.6
Park	8.0	-	-	8.0
Ponding Basin	24.1	22.1	-	46.2
Railroad	27.8	7.8	-	35.6
School	85.7	-	-	85.7
Solar	15.8	-	-	15.8
Utility	2.2	-	-	2.2
Agriculture	96.7 (7.9%)	2185.4 (84.2%)	567.2 (89.7%)	2849.4 (63.9%)
Agricultural crops	96.7	2185.4	1,075.2	3,357.0
Vacant and Right-of-Way	270.2 (22%)	108.1 (4.2%)	23.8 (3.8%)	402.1 (9%)
Vacant	208.8	36.2	23.8	268.8
Vacant – Minor Improvements	42.6	49.0	-	91.6
Right-of-Way	18.7	22.9	-	41.6
TOTAL	1229.0	2596.3	632.6	4457.8

^a Includes acreage in the Sphere of Influence (SOI) boundary, exclusive of acreage in the City limits.

^b Includes acreage in the Expansion Area, exclusive of acreage in the City limits and SOI.

^c Includes acreage in City limits, SOI, and Expansion Area

Figure 3-1: Existing Land Uses Index Code

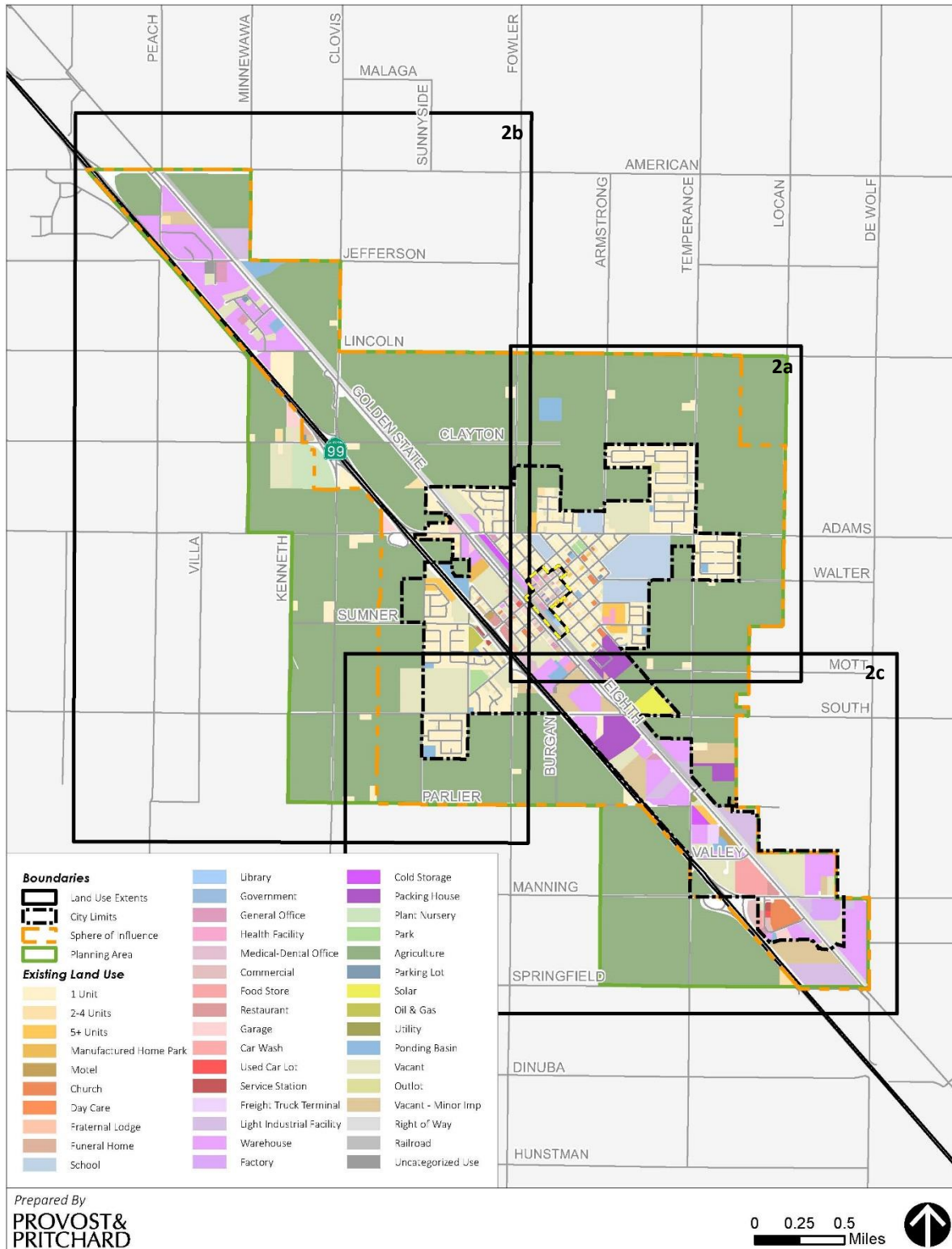


Figure 3-2: Existing Land Uses Northeast

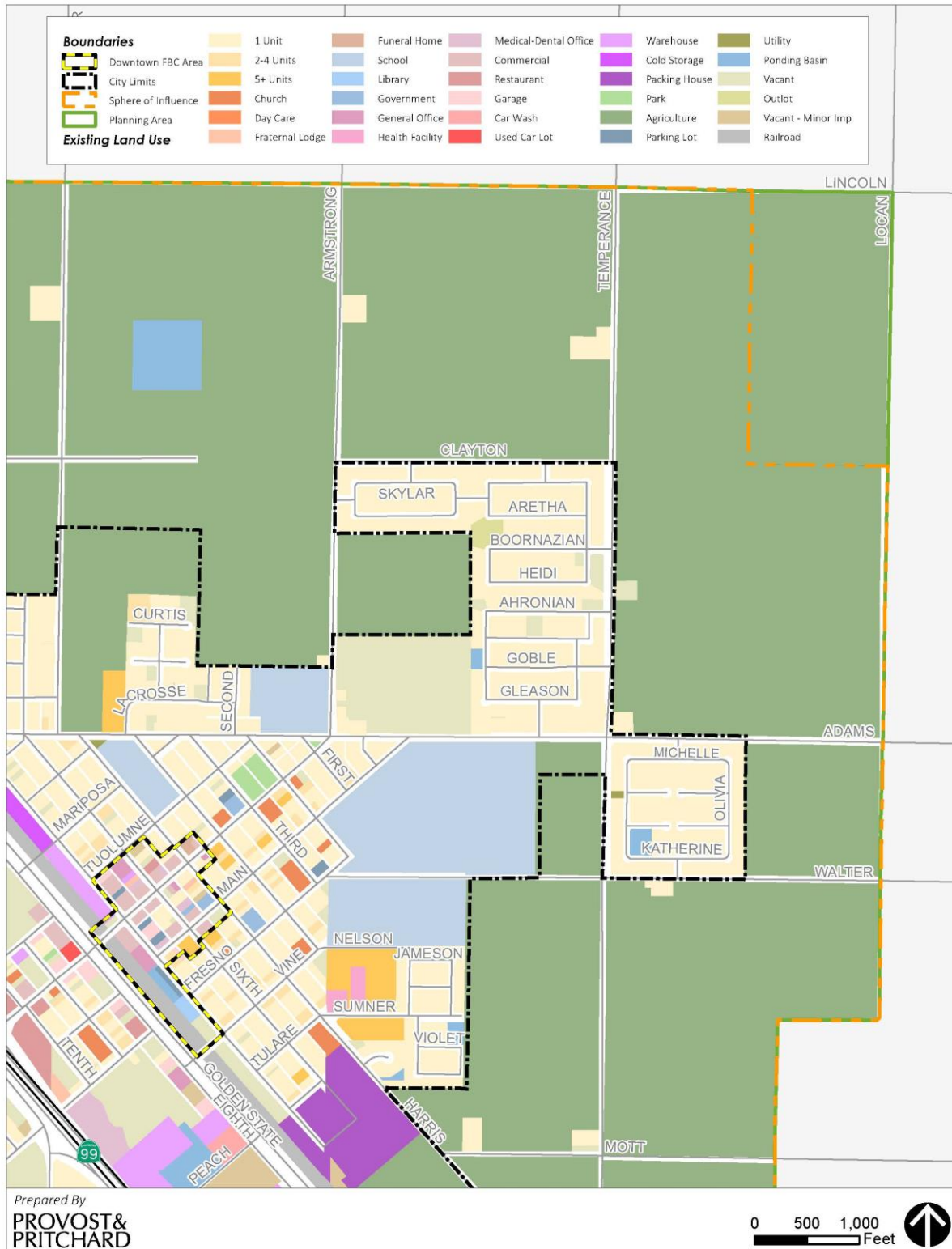


Figure 3-3: Existing Land Uses Northwest

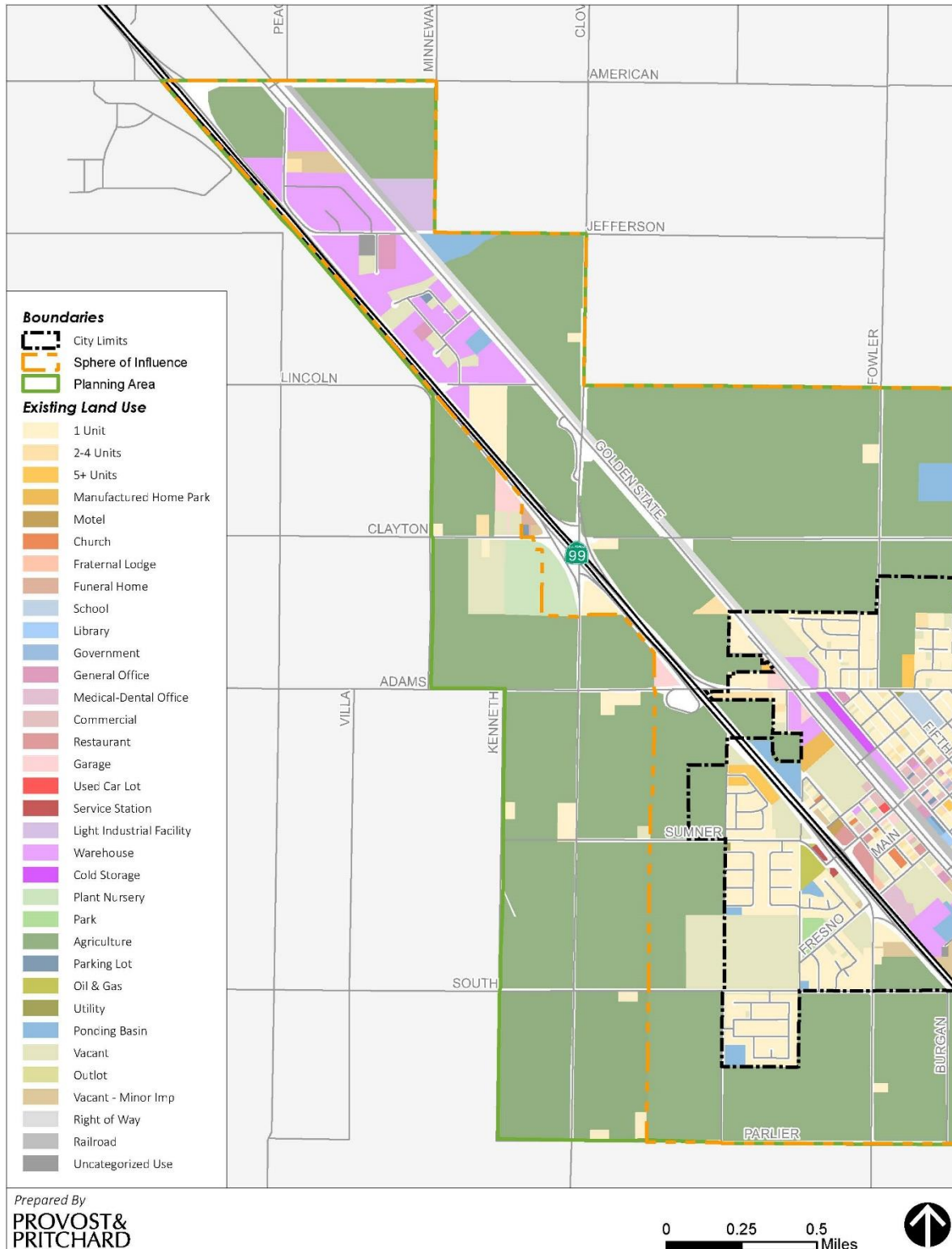
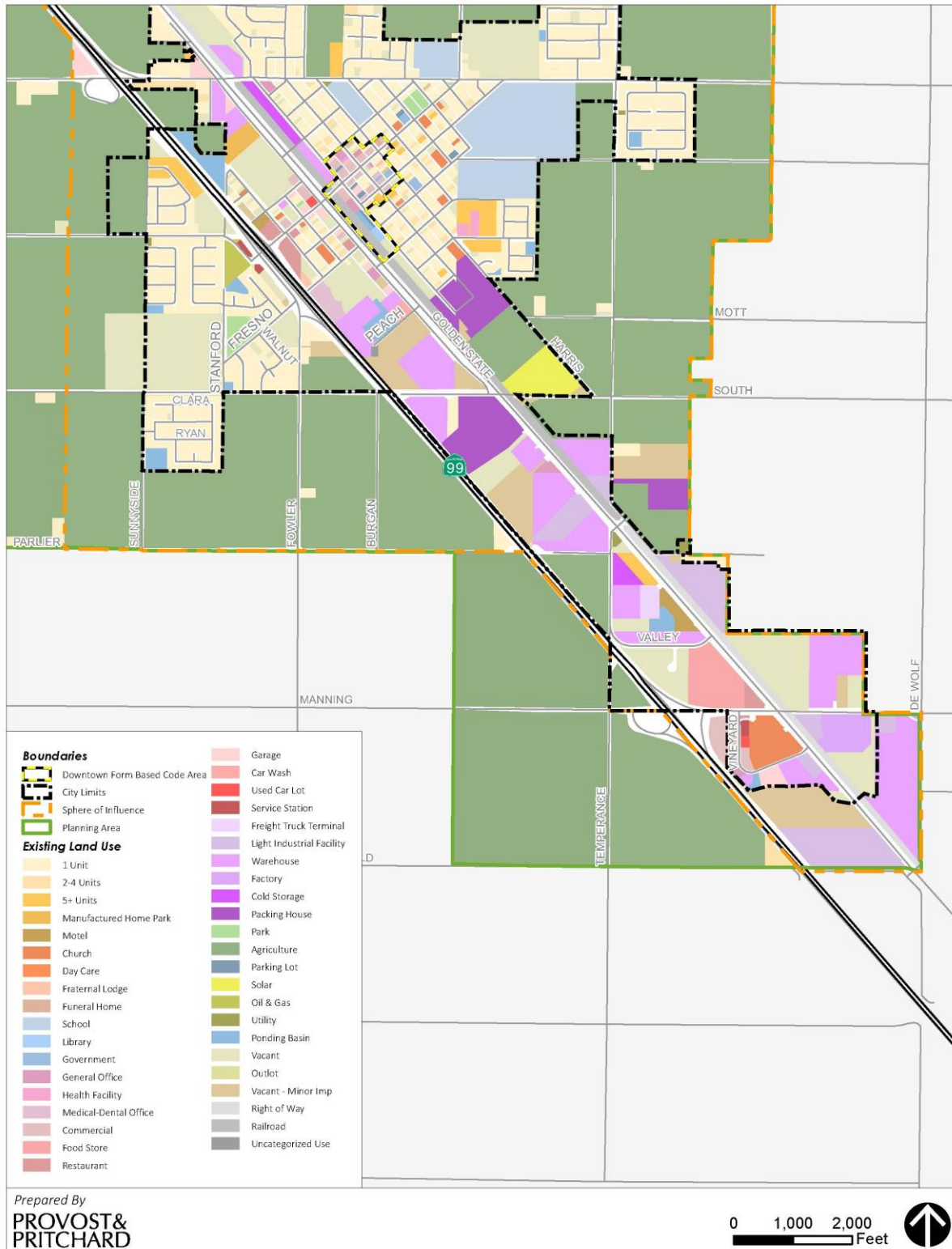


Figure 3-4: Existing Land Uses South



DISADVANTAGED COMMUNITIES

Environmental Justice (SB 1000)

Senate Bill (SB) 1000, also known as the *Planning for Healthy Communities Act*, was signed into law on September 24th, 2016. The purpose of this law is to create healthier cities and counties by protecting sensitive land uses and prioritizing the needs of disadvantaged communities (DACs). This law defines disadvantaged communities as “an area identified by the California Environmental Protection Agency (CalEPA) pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation.”

As a result of this law, cities and counties must identify DACs within the planning area, and if present, must adopt an environmental justice element, or integrate environmental justice policies, into their general plans. These policies must work to reduce unique or compounded health risks in DACs by addressing the following:

- *Pollution exposure and air quality,*
- *Access to public facilities,*
- *Access to healthy food,*
- *Access to safe and sanitary homes,*
- *Access to spaces for physical activity,*
- *Community engagement, and*
- *Program improvements to identify and reverse systemic funding inequities for disadvantaged communities.*

The primary screening tool used to identify disadvantaged communities is CalEnviroScreen. CalEnviroScreen is a mapping tool maintained by CalEPA that identifies DACs by census tract. Scores are assigned to each census tract based on 20 different statewide indicators which are shown to significantly impact health or influence vulnerability to disease, including pollution exposures, environmental effects, sensitive populations, and socioeconomic factors.⁷ Using the scores calculated through the CalEnviroScreen tool, all census tracts are ordered from highest to lowest and assigned a percentile rank. The percentile ranking for each census tract demonstrates the tract’s degree of burdens relative to the rest of the state’s census tracts. Areas with higher percentages experience a higher pollution burden than areas with lower percentages. A search of the CalEnviroScreen tool indicates that most of the City and Planning Area fall within the 91-100% category with the remaining area falling within the 81-90% category. Based on these results, environmental justice policies have been integrated into the Fowler General Plan. Additional research and data collection beyond the CalEnviroScreen search has been conducted to identify conditions unique to Fowler which could not be easily identified at the census tract level. For more detailed information, see the City of Fowler’s *Environmental Justice Policy Paper*.

⁷ (California Environmental Justice Alliance, 2018)

Disadvantaged Unincorporated Communities (SB 244)

Senate Bill (SB) 244 was passed in 2011, with the purpose of addressing the complex legal, financial, and political barriers that contribute to regional inequity and infrastructure deficits within disadvantaged unincorporated communities (DUCs). SB 244 requires cities and counties to identify and include DUCs in their long-range planning efforts. DUCs are defined by statute as meeting all the following criteria:

- Contains 10 or more dwelling units in close proximity to one another;
- Is either within city sphere of influence (“fringe community”), is an island within a city boundary (“island community”), or is geographically isolated and has existed for more than 50 years (“legacy community”); and
- Has a median household income that is 80 percent or less than the statewide median household income.

In 2020, the Fresno Local Agency Formation Commission (LAFCo) mapped DUCs in Fresno County using similar criteria.⁸ At the time, a median household income of less than \$48,706 was the threshold for identifying a DUC. As of the completion of this mapping effort, there were no DUCs identified within the City of Fowler or the Planning Area.

MILITARY COMPATIBILITY

California jurisdictions are required to consult with the United States Military if planned land uses could interfere with military operations. A search of the California Military Land Use Compatibility Analyst (CMLUCA), a mapping tool developed by OPR that local governments and developers can use to identify whether proposed planning projects are located in the vicinity of military bases, military training areas, or military airspace was conducted on November 19, 2021. This mapping tool confirmed that the Planning Area does not fall within military air space, training areas, or bases. There are also no military airports within the Planning Area.

⁸ DUCs mapped by Fresno LAFCo included inhabited territory (meaning 12 or more registered voters) that constitutes all or a portion of a community with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. In 2013, Fresno LAFCo updated this definition to refer to areas with at least 15 dwelling units at a density of not less than one unit per acre.

4. TRANSPORTATION AND MOBILITY

A city's circulation network provides for the movement of people, goods, energy, and other resources throughout its community. This network is heavily correlated with existing and planned land uses. The two planning efforts work together to create a system of places and linkages which form the identity and framework of the community overall, with each one informing and shaping the other.

When analyzing a city's transportation system, it is important to take inventory not just of physical infrastructure and its capacity, but also how the system serves the community in which it operates. This concept is often thought of as mobility. While the term transportation can be easily associated with infrastructure and physical accommodations for travel, mobility is often described as the ability to move freely and easily through the built environment. An abundance of physical connection points, bike lanes, sidewalks, public transportation routes, as well as transit availability and frequency are all aspects of a transportation system which enhances mobility. Together, features of transportation and mobility form a circulation network which affects a community's physical, social, and economic environment, as well as its health.

This chapter describes the current state of Fowler's local transportation and mobility network, including facilities, linkages to regional transit routes, and access to rail and air transportation services. An inventory of these elements will provide an important perspective when performing future analysis as part of the General Plan Update.

TRAVEL/COMMUTE PATTERNS AND TRENDS

In order to provide a relevant perspective on Fowler's circulation network, it is important to understand travel and commute patterns taking place in the community. The commuting characteristics summarized below have been provided by the United States Census Bureau's American Community Survey 2019 5-Year Estimates. Topics covered include journey to work statistics such as commute times and method of travel.

Journey to Work

Where people work, how they get there, and how long it takes are valuable statistics when planning for infrastructure improvements, transportation services, and mobility enhancements. Journey to work statistics inform the needs for services which serve disabled populations, bicycle commuters, carpools and rideshare participants, and other public transit users. This information is also useful in planning efforts which focus on improving public health. For example, long commute times have been linked to obesity rates as well as higher amounts of pollution and poor air quality.⁹

In Fowler, personal automobile use is by far the dominant mode of transportation to work, with almost 90 percent of workers traveling by either car, truck, or van. Approximately 81 percent of automobile users drove alone to work, while 9 percent participated in carpools. Approximately 2.1 percent of workers either walked or traveled by bicycle, while 4.5 percent of the workforce works from home. There was zero

⁹ (Mammoser, 2019)

utilization of public transit as a means of travel to work. An overview of this information is provided in **Figure 4-1** below.

Most workers' commute times measure fewer than 30 minutes, accounting for approximately 77 percent of all work trips. Approximately six percent of all commutes lasted between 45 and 60 minutes. **Figure 4-2** provides a more in-depth overview of commute times for workers aged 16 years or over who did not work at home.

Figure 4-1: Means of Transportation to Work (Workers Age 16 or Older), 2019¹⁰

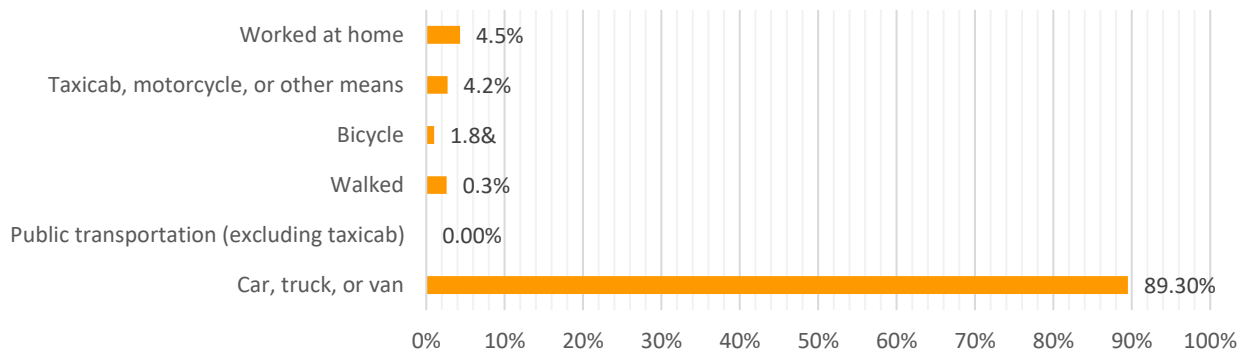
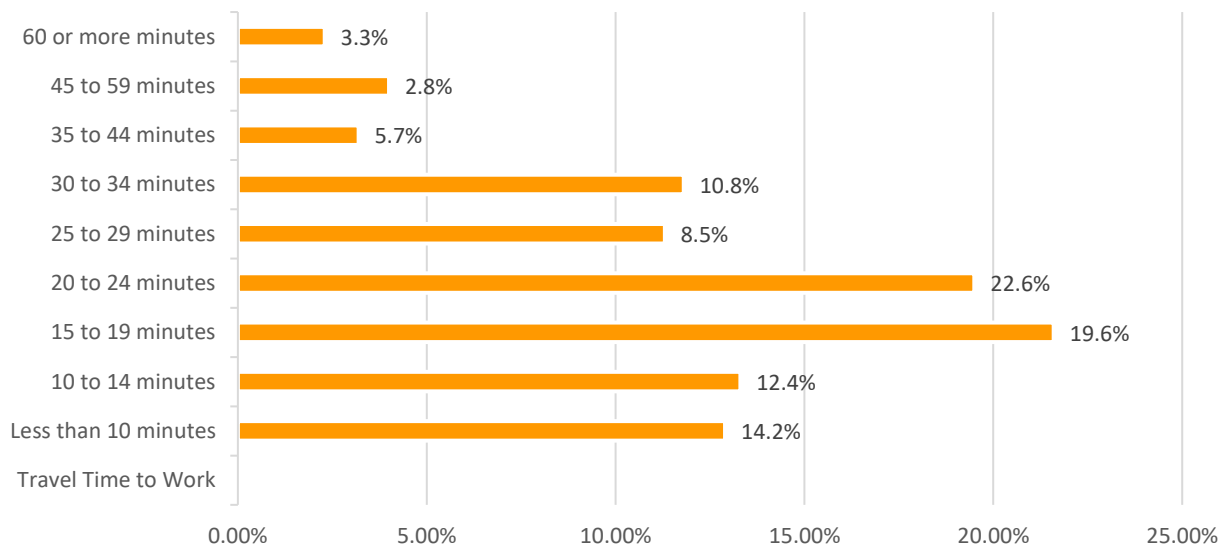


Figure 4-2: Travel Time to Work (Workers Age 16 or Older), 2019¹¹



¹⁰ (Bureau, 2019)

¹¹ (Bureau, 2019)

EXISTING MAJOR ROADWAYS

The roadway system within the Fowler planning area includes State Route (SR) 99 as well as numerous City and County route. The 2025 Fowler General Plan has established a hierarchy of roads, also known as a functional classification system, which groups streets into categories by service provided. There are five classifications established in the 2025 General Plan, as follows:

- **Freeways.** Freeways carry regional traffic through the community with access only at major street interchanges.
- **Expressways.** Expressways connect regional destinations on the non-freeway system and generally pass through several jurisdictions. Traffic carrying capacity is maintained through access control at two-mile intervals.
- **Arterials.** Arterials serve as the principal network for cross-town traffic flow. They connect areas of major traffic generation within the urban area and link important county roads with state highways. They also provide for the distribution and collection of through traffic to and from collector and local streets.
- **Collectors.** Collectors provide for traffic movement between arterial and local streets, traffic movement within and between neighborhoods and major activity centers, and limited direct access to abutting properties.
- **Local Streets.** Local streets provide direct access to abutting properties and for localized traffic movements within residential, commercial, and industrial areas.

The Fowler General Plan designates Fowler's roadways according to this system and provides measurements for recommended rights of way. **Figure 4-3** shows the location of the major roadways in the City, while **Table 4-1** provides a description and summary of those roadways.

Access

State Route 99 is the major regional transportation route into and out of the City. There are three exits from SR 99 that provide access directly into the City, including:

- Adams Avenue,
- Manning Avenue, and
- Merced Street.

Other notable entrances into Fowler include:

- North Fowler Avenue,
- South Fowler Avenue,
- South Temperance Avenue,
- Golden State Boulevard, and
- East South Avenue.

An overview of SR 99 and how it interacts with the City of Fowler can be seen in **Figure 4-4**.

Connectivity

While Fowler’s position along SR 99 provides easy access to northern and southern California, it also acts as a dominant physical barrier, separating the east and west sides of the City. Most land area lies on the east side of SR 99; however, substantial residential land uses exist west of SR 99. Retail and industrial uses are generally clustered along SR 99 to the west of the highway. Only Merced Street, Adams Avenue, and Manning Avenue provide access across the highway, limiting the flow of both automobile and pedestrian traffic between the east and west sides of Fowler.

Table 4-1: Existing Roadway Classifications

Classification	Street Name	Recommended Right-of-Way ¹²
Freeway		
	State Route 99	220'
Expressway		
	Temperance Avenue	100'
Arterial		
	American Avenue	84'
	Fowler Avenue	84'
	Golden State Boulevard	150'
	Manning Avenue	84'
Collector		
	5 th	80'
	7 th	80'
	8 th	80'
	Adams	80'
	Armstrong	80'
	Clayton	80'
	Fowler	80'
	Fresno	80'
	Lincoln	80'
	Merced	80'
	Parlier	80'
	South	80'
	Springfield	80'
	Sumner	80'
	Sunnyside	80'
	Walter	80'

¹² (City of Fowler, 2004)

Figure 4-3: Circulation Network, 2040 Fowler General Plan

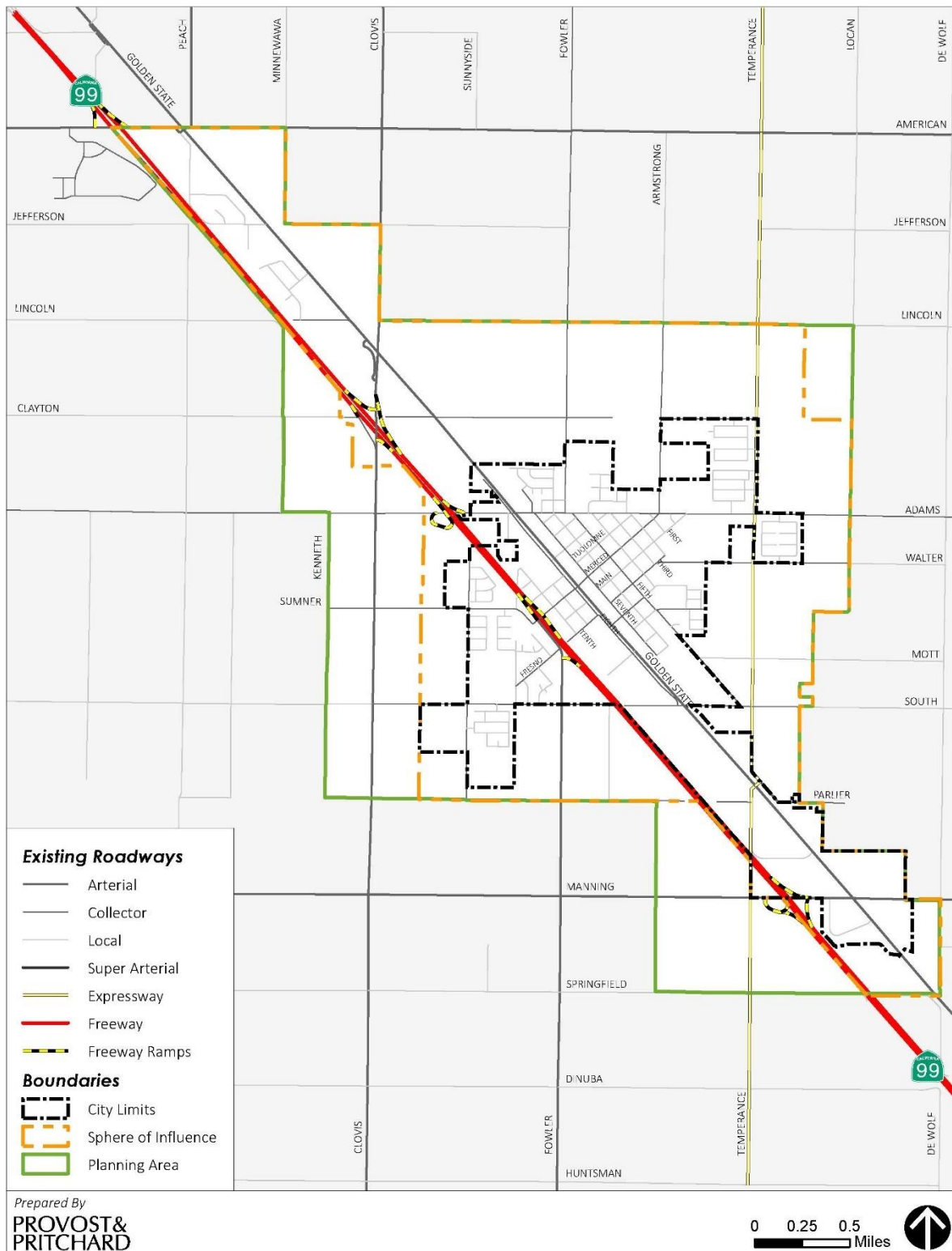
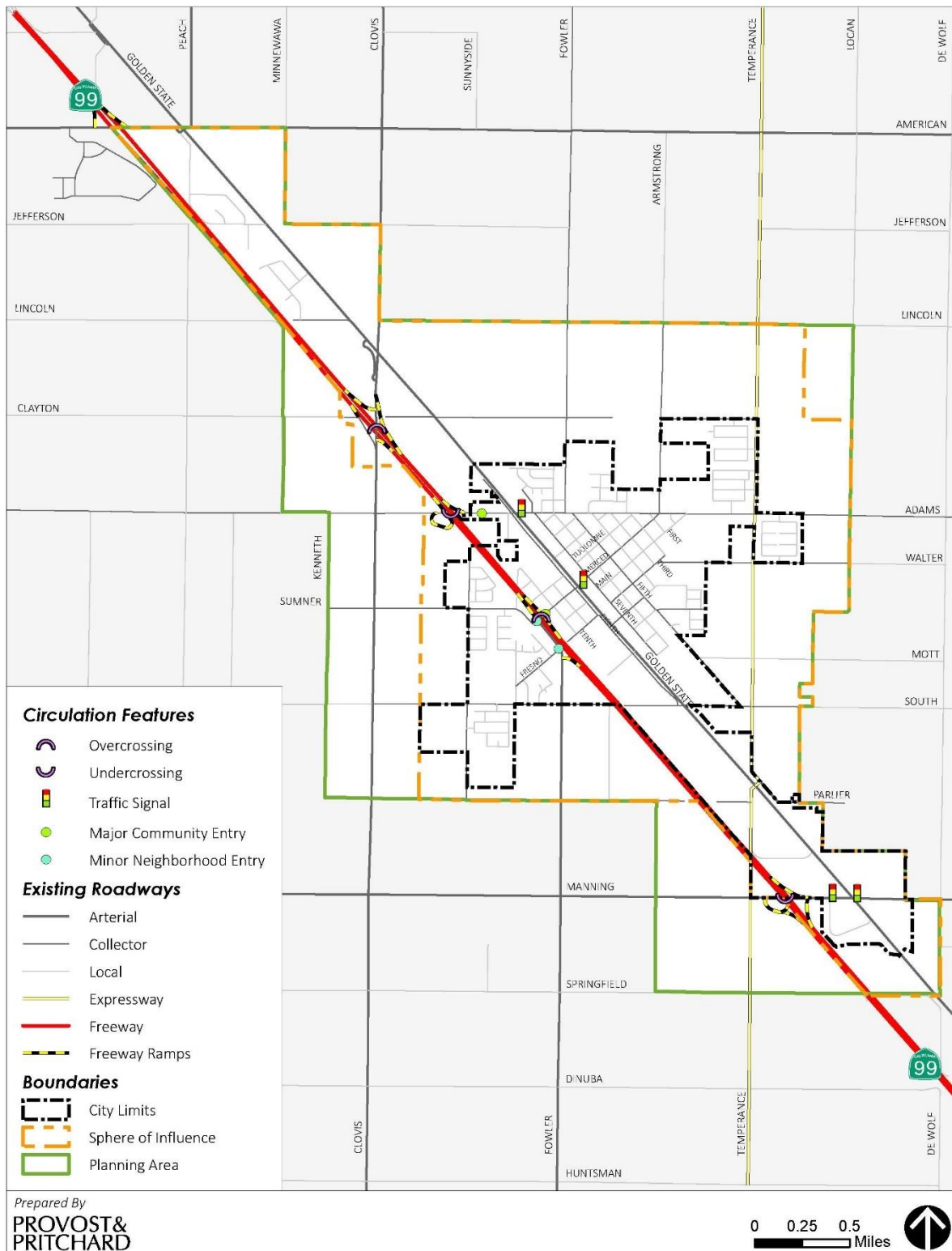


Figure 4-4: State Route 99



ALTERNATIVE MODES OF TRANSPORTATION

Pedestrian and Bicycle Facilities

While there have been some recent additions to bicycle and pedestrian facilities in Fowler, the City does not have an extensive system of bike lanes, bike paths, or walking trails. The ease of walking and driving in Fowler varies depending on the area. The downtown area is more walkable due to its short blocks, moderate density, occurrence of mature trees for shading, and close proximity of destinations. In addition, there is a class II bicycle lane along Adams Avenue from Vista to Temperance and Golden State Boulevard.

The Fresno Regional Active Transportation Plan (ATP) identifies current bicycling and sidewalk facilities in Fowler as of 2017. **Table 4-2** provides a summary of those facilities. **Figure 4-5** also provides an overview of bicycle facilities throughout the City.

Table 4-2: City of Fowler Existing Bicycle and Pedestrian Facilities

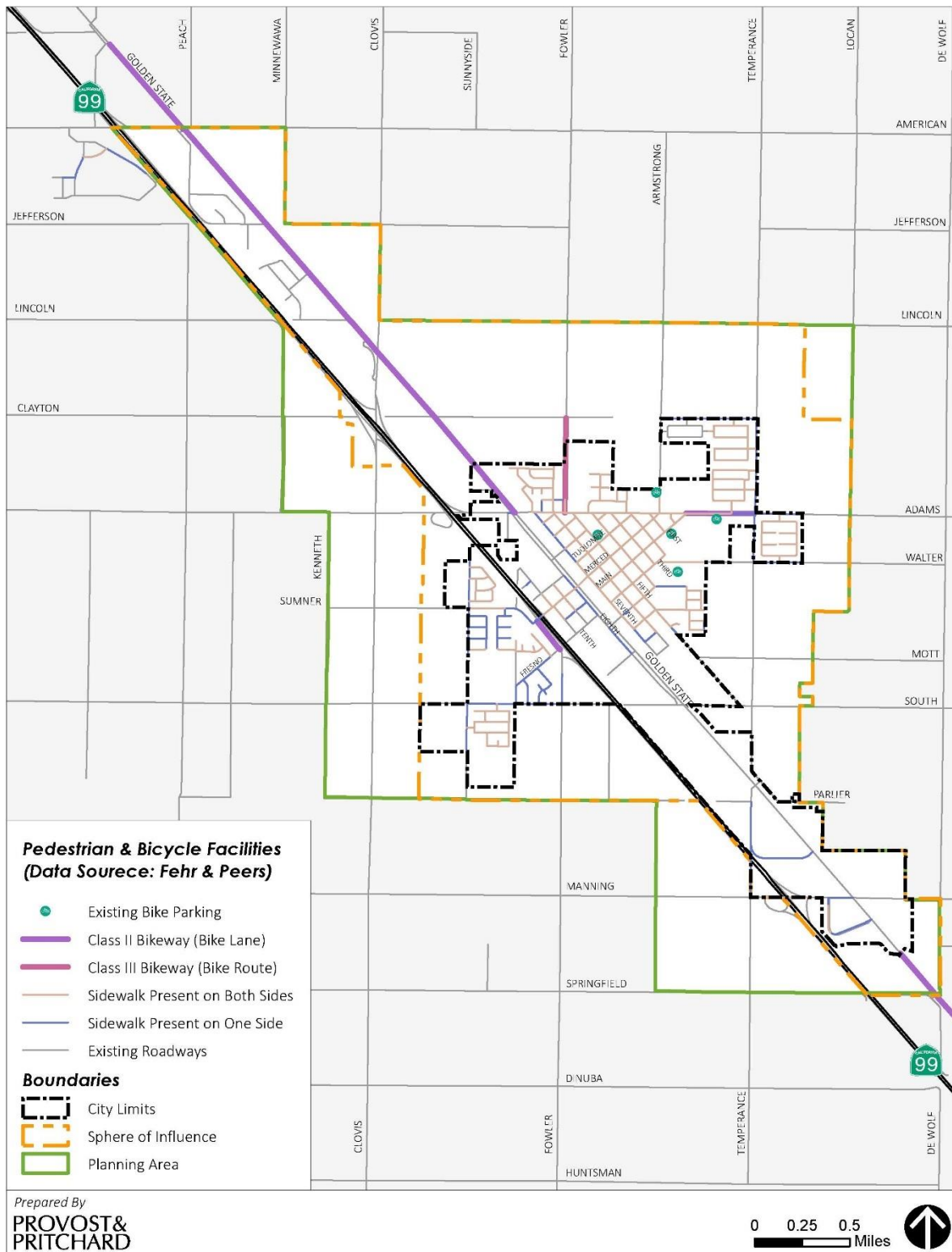
Type	Description/ Definition	Miles
Sidewalks	Paved areas immediately adjacent to the vehicular right-of-way for the exclusive use of pedestrians. Sidewalks may be used by cyclists unless prohibited.	42.9
Class I Bike Paths	Completely separated right of way, for exclusive use for bicycles and pedestrians.	0.0
Class II Bike Lanes	On-street striped lane for one-way bike travel.	7.0
Class III Bike Routes	Shared on street facility, commonly identified by pavement markings or signage.	1.0
Class IV Separated Bikeway	Physically separated bicycle facilities that are distinct from the sidewalk and designed for exclusive use by bicyclists. Also commonly known as cycle tracks.	0.0

The Fresno Regional ATP identifies the following challenges which impact the safety and comfort of biking and walking in Fowler:

- Irregular intersections where the railroad grid creates challenges for bicyclists and pedestrians;
- Sidewalk gaps, high curbs, lack of curb ramps, and angled intersections on Adams Avenue; and
- Challenges crossing Merced Street at 10th Street due to proximity to SR 99 interchange ramps.

The ATP also identifies key destinations for cyclists and pedestrians in Fowler, including local schools, businesses along Merced Street, and local parks.

Figure 4-5: Existing Bicycle Facilities



Public Transportation

Local Services

The Fresno County Rural Transit Agency (FCRTA)

The FCRTA was formed through a joint-powers agreement between Fresno County and the incorporated cities within its service area, including the City of Fowler, to provide fixed-route and on demand transit services through its service area. The FCRTA vehicles are wheelchair accessible, and all full-size buses include bike racks.

The FCRTA operates one fixed-route service, with minor route deviations, linking the City of Fowler with the cities of Fresno, Selma, and Kingsburg. Three round trips are provided each day. Services are provided Monday through Friday. The FCRTA also supports several specialized transportation programs, including shared-ride car and vanpool services, social service dial-a-ride, and specialized services for seniors and persons with disabilities.

Regional Services

AMTRAK

Fresno County's sole AMTRAK station is located in the City of Fresno downtown and provides AMTRAK services to San Francisco and Sacramento to the north, as well as Bakersfield and Los Angeles to the south. The AMTRAK San Joaquins line provides seven trains daily traveling along both north and southbound routes. The San Joaquins line joins with the Union Pacific Railroad line southeast of downtown Fresno, then separates and moves south, bypassing the City of Fowler.

There is not a train terminal in the City of Fowler. The closest station to the City of Fowler is in downtown Fresno, approximately 11 miles to the north. The next closest station is in Hanford, approximately 23 miles to the south.

High Speed Rail Authority (HSRA)

The California High-Speed Rail Authority (HSRA) is responsible for planning, designing, and building the California high speed rail. Once complete, the rail will connect major regions of the state. Phase 1 will run from San Francisco to Los Angeles. Subsequent phases will extend to Sacramento and San Diego.

The first phase of rail construction will connect Merced to Bakersfield, with stations planned in downtown Merced, downtown Fresno and downtown Bakersfield. As of July 2019, construction in Fresno County was underway, with work beginning on construction of the arches at the San Joaquin River Viaduct and the final pavings at Avenue 8 in Madera.

Airports

Public-use general aviation airports located near Fowler include Fresno Chandler Downtown Airport, Reedley Municipal Airport, and the Selma Aerodrome. The Reedley Municipal Airport occupies approximately 138 acres just north of the City of Reedley. It has one paved runway serving single and light twin-engine aircraft. Runway operations are expected to reach 36,538 by the year 2020, all of which will

be general aviation.¹³ The Selma Aerodrome provides private services only. Fresno Yosemite International Airport (FAT) is Fresno County's primary passenger airport facility and the largest and busiest airport in the San Joaquin Valley. FAT supports seven commercial airlines and provides aviation facilities for both business and government agencies.

MOVEMENT OF GOODS

Freight generators in Fresno County consist of five distribution centers, two large agricultural businesses, an airport, and an import/export distribution facility.¹⁴ The distribution centers identified specialize in transportation and warehousing, wholesale and retail trade, as well as grocery retail. Fowler's position along the SR 99 corridor makes it an efficient and cost-effective location for distributing and receiving products.

Truck Routes

There are several local businesses that rely on transporting goods via SR 99. Movement of goods from those businesses relies on prescribed trucking routes in order to navigate to the nearest SR 99 intersection. The estimated pass-through truck trips along SR 99 within the City of Fowler and Golden State Boulevard is currently unknown.

In 2016, Fresno Council of Governments published the San Joaquin Valley 1-5/SR99 Goods Movement Study. The study identified truck traffic generators, congested segments, collision hotspots, and truck service facilities along the SR 99 corridor. The study identified that while Fowler is impacted by traffic along these freeways, the City does not have a significant amount of congested or critical safety segments.¹⁵

The 2025 General Plan establishes preferred designated truck routes as part of the circulation element. The City's municipal code expands that list of designated truck routes and offers clarification as to the purpose and types of vehicles which must travel along such routes. **Figure 4-6** provides a visual overview of designated truck routes as prescribed in the 2025 General Plan as well as the Fowler Municipal Code.

¹³ (Wadell Engineering Corporation, 2003)

¹⁴ (Cambridge Systematics, Inc., 2015)

¹⁵ (Cambridge Systematics, Inc., 2015)

Figure 4-6: Bus Facilities

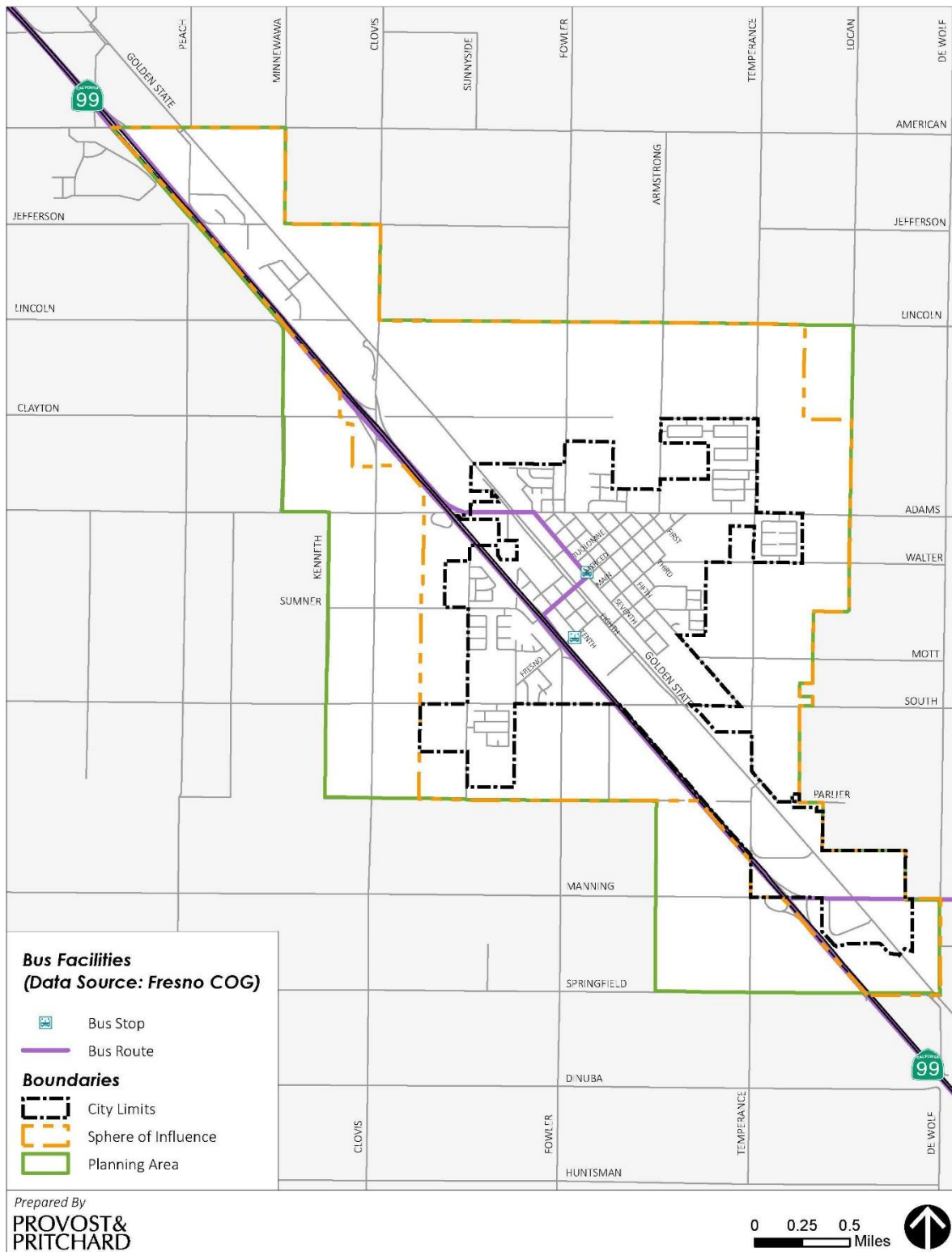
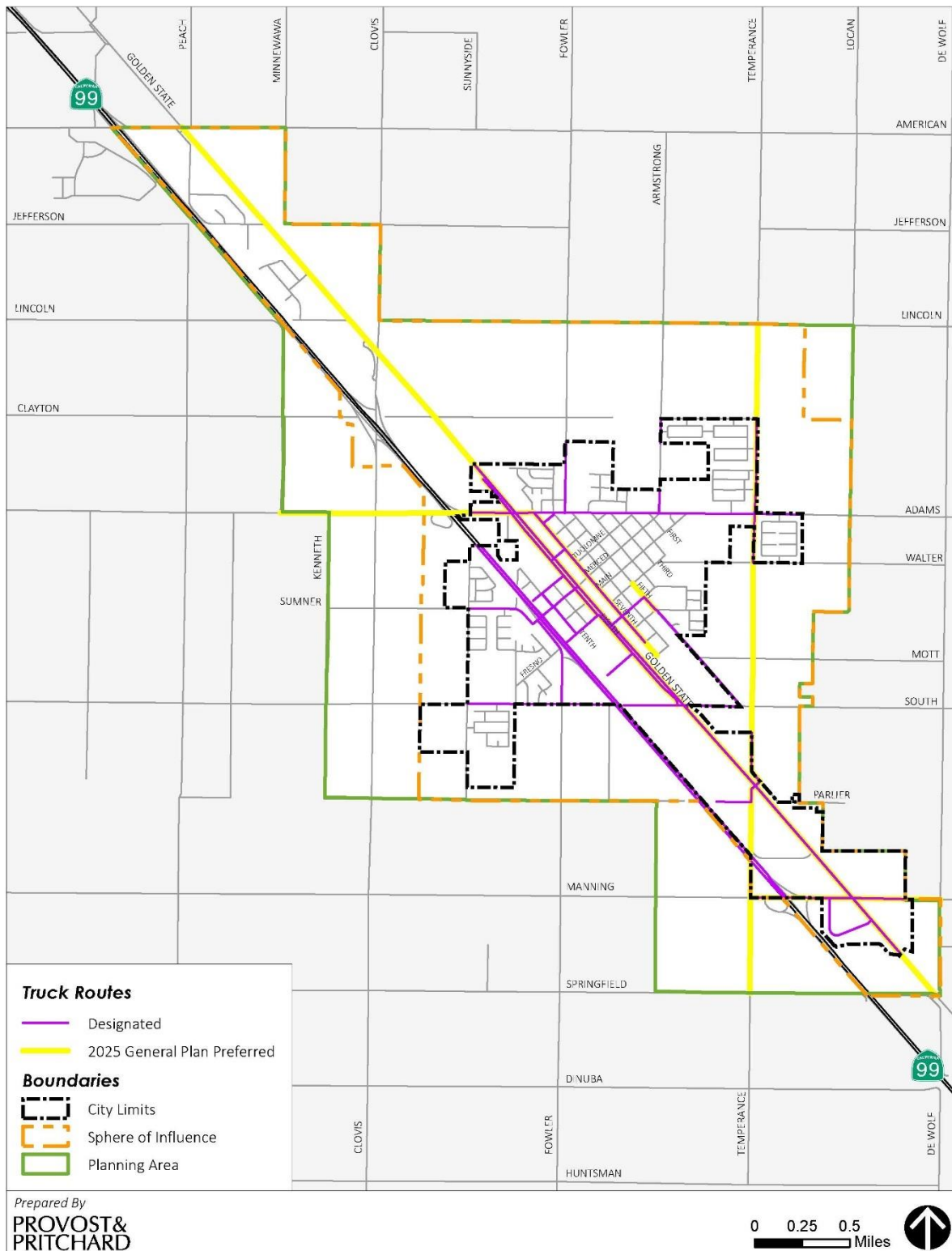


Figure 4-7: Designated Truck Routes



Air and Rail Cargo

The Union Pacific Railroad provides freight service in Fowler, connecting the City with major markets in northern and southern California. There is a rail siding¹⁶ located in the southern portion of the City, next to major packing facility, National Raising Company.

Air cargo is a fast-growing method of transporting goods in and out of the area. The Fresno Yosemite International Airport is the major cargo-handling airport in the San Joaquin Valley.

While both rail and air provide freight services to the Valley and the City of Fowler, it is expected that trucks will continue to be the predominant method of goods movement for the foreseeable future.

RELATED PLANS AND POLICIES

Fresno County Regional Active Transportation Plan

In conjunction with the Fresno County Council of Governments (COG) the Active Transportation Plan assesses the status and future plans for biking and walking facilities in the City of Fowler. The preliminary report identifies approximately 42 miles of sidewalk, seven miles of Class II bike lanes, and one mile of Class III bike routes.

Expansion is planned for existing bicycle and pedestrian routes. Once complete, the total length of local sidewalks would increase to 50 miles, Class I bike lanes would increase to approximately 28 miles, and Class III bike routes would increase to an approximate total of four miles. The proposed expansions are designed to provide access to key destinations and to serve as recreational assets.

San Joaquin Valley Interregional Goods Movement Plan

The San Joaquin Valley Interregional Goods Movement Plan was developed in 2013 for the San Joaquin Valley Regional Transportation Planning Agencies. The study analyzed goods movement throughout the eight counties (Kern, Kings, Tulare, Fresno, Madera, Merced, Stanislaus, and San Joaquin) making up the San Joaquin Valley. The study focused on regionally significant commodity flows, transport operations, goods movement issues, and goods movement impacts. The study did not delve deeply into urban and localized goods movement issues that are particular to specific cities or rural areas within the study area.

Building on prior efforts, including the SJV Regional Goods Movement Action Plan (2007), corridor studies along SR 99 and other highways around the region, and new analysis, the purpose of this plan was to prioritize projects and develop strategic programs and policies that guide goods movement planning in the region.

San Joaquin Valley 1-5/SR99 Goods Movement Study

The San Joaquin Valley 1-5/SR99 Goods Movement Study was prepared in 2016 as a technical memorandum covering the eight county San Joaquin Valley region, including Kern, Kings, Tulare, Fresno, Madera, Merced, Stanislaus, and San Joaquin counties. The study identified strategic programs for goods

¹⁶ Rail siding is a railroad term used to describe a section of track off the main line where rail cars are sometimes dropped or exchanged.

movement along with planned improvements and projects and assessed their feasibility. Some of the data gathered as part of this effort was to identify congested travel segment relative to truck operations and collision hotspots. The conclusions of this study will inform the selection of preferred strategies for addressing goods movement throughout the San Joaquin Valley region.

5. OPEN SPACE AND CONSERVATION

Key issues regarding natural resources in the City of Fowler include maintaining public parks and recreational facilities, preserving scenic, cultural, and biological resources, open space, as well as hydrology and water quality, and air quality. This chapter describes existing conditions relevant to these topics within the City of Fowler in order to provide direction for future analysis for the General Plan update.

EXISTING PARK AND RECREATION FACILITIES

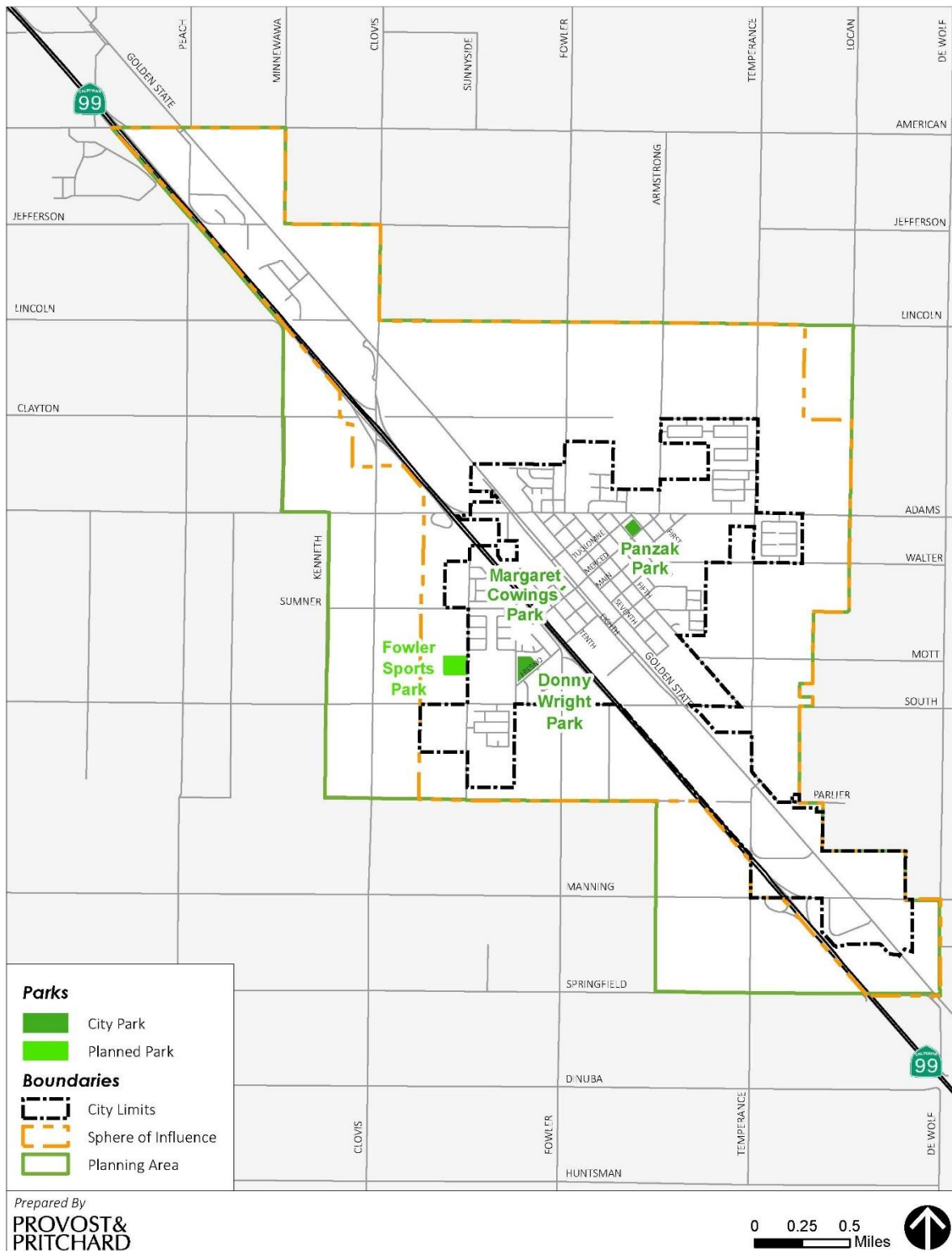
There are currently four City parks in Fowler, all of which are managed by the Department of Parks and Recreation. Panzak Park is approximately 2.5 acres and includes a covered picnic area, large shade trees, playground equipment, and tennis courts. The recently developed Donny Wright Park covers an area of approximately six acres and includes an expanse of irrigated lawn and trails for recreation. Margaret Cowings Park is an approximate 0.05-acre neighborhood park with an irrigated lawn and shade trees located on N. 9th Street between Merced and Tuolumne. Also considered a City park, the Fowler Veteran's Monument covers an area of approximately 0.1 acres and includes benches on paved surfaces, a fountain, several flag poles, ornamental hedges, and rose gardens. While not yet constructed, an eight-acre sports park west of SR 99 is in the planning and development stage. There are no State or regional parks located in the planning area.

The City of Fowler also operates the Edwin Blayney Senior Center, which offers a meeting place and specialized recreation opportunities for senior citizens. The center operates Monday through Friday from 10:00 am to 3:00 pm and is assisted by funding from the Fresno-Madera Area Agency on Aging. **Figure 5-1** shows the locations of the City's existing and proposed parks and recreational facilities.

Joint Use Facilities

The City has a memorandum of understanding in place with the Fowler Unified School District (FUSD) for the use of school facilities after hours for youth sports and community recreation. The City provides funds to the School District from its utility users account intended for supplementary maintenance to school facilities that will be required due to the added usage. The annual contribution is subject to budget availability and approval by City Council.

Figure 5-1: Parks and Recreation Facilities



SCENIC RESOURCES

Scenic resources contribute to a sense of community identity and can provide economic value from tourism. The definition and value of a scenic resource is subjective, but the term generally refers to the uniqueness, unity, and appeal of a view. In a city context, this can mean a variety of things, including views and viewpoints, scenic corridors, view streets, and visual focal points. It should be noted that scenic resources can be elements of either the natural or built environment valued for aesthetics. In Fowler there are two main sources for scenic resources: built structures which help define the identity and aesthetic quality of the City and views of the natural and human made landscape, including the Sierra Nevada mountains and agricultural land.

Built Structures

Downtown Fowler has a particular ambiance and charm due to a mixture of historic buildings and specialized architectural design standards for new development. Street level aesthetics and character are regulated on a city-wide level by Fowler's Zoning and Building Ordinances. The downtown area is more specifically regulated by a Form-Based Code Area, adopted as part of the Zoning Ordinance. The intent of the Form-Based Code Area is to preserve the character of downtown. As a result, all development in downtown Fowler is subject to a specific set of design standards regulating building form, streets, and open space to ensure that the area evolves cohesively, where new growth is compatible with historic buildings in the area. In addition to zoning regulation, expanded design guidelines and analysis for the downtown area are covered in the Central Fowler Revitalization Plan (2007).

The Golden State Corridor also has specific design guidelines, provided in the Golden State Corridor Economic Development Infrastructure Improvements Design Guidelines Manual (2011), developed by Fresno COG. The purpose of the Golden State Corridor Design Manual is to provide guidelines that promote quality design along the Golden State Corridor connecting the cities of Fowler, Selma, and Kingsburg in Fresno County.

Landscape

Other scenic resources in the area include views of the Sierra Nevada mountains or foothills to the east on a clear day, or the vast expanse of agricultural fields in the vicinity. As one of the cities along the Fresno County Blossom Trail, Fowler offers scenic views of blossoming orchard groves each spring and vibrant foliage in autumn.

CULTURAL RESOURCES

Cultural resources can refer to prehistoric and historic archaeological sites; architectural properties like buildings, bridges, and infrastructure; and locations significant to Native Americans.

Historical Context

The City of Fowler lies within an area once inhabited by the Northern Valley Yokuts. Yokuts villages were situated near major waterways, like the Kings River, and featured structures made with woven tule reeds.

As with other Native American Tribes in California, the Yokuts population was drastically reduced following the influx of Spanish explorers, missionaries, miners, ranchers, and other European immigrants to the San Joaquin Valley after 1700. During the gold rush, miners began to settle along major waterways such as the San Joaquin River and Kings River. The momentum of the gold rush could not be sustained, and miners began to pursue vocations in ranching and farming. The successful development of irrigation systems led to the agricultural boom as more tracts of land became suitable for crops.

Following the completion of the transcontinental railroad in 1869, the Central Pacific Railroad (now known as the Southern Pacific Railroad) began construction of a rail line through the Central Valley, and the segment through Fowler was laid around 1872. The valley branch of the historic Southern Pacific Railroad is presently owned and operated by the Union Pacific Railroad.

Golden State Boulevard runs north-south through the City of Fowler. Also known as “Old Highway 99” and initially named State Route 4, Golden State Boulevard was the Central Valley’s first highway which connected Sacramento and Los Angeles. Groundbreaking began in 1912 and the highway opened approximately two years later. The roadway was laid over centuries of previously traveled corridors consisting initially of a series of Native American trails, later used for horse and stagecoach travel.

Known Historical Resources in the Planning Area

Fowler’s Switch

In May 1973, Fowler’s Switch was registered as a California Historical Resource.¹⁷ The City is named for Thomas Fowler, State senator from 1869–72 and 1877–78, and a railroad switch was built on the Fowler ranch in 1872. The town developed around the railroad switch and became known as Fowler’s Switch.¹⁸ The City was incorporated in 1908 and its name was eventually shortened.¹⁹

BIOLOGICAL RESOURCES

California contains several rare species known to have low populations or limited distributions. As the human population grows and urban expansion occurs, habitat for these sensitive species is diminished which makes them increasingly more vulnerable to extirpation, or local extinction.

State and Federal regulations have authorized the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service to conserve and protect the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. The California Native Plant Society (CNPS) maintains a list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as “special status species” and are recorded within the California Natural Diversity Database (CNDDDB).

¹⁷ State of California Office of Historic Preservation. <http://www.ohp.parks.ca.gov/ListedResources/Detail/P299> Accessed 5 September 2019.

¹⁸ (The Encyclopedia of California, 1999)

¹⁹ United States Geological Survey. https://geonames.usgs.gov/apex/f?p=gnispq:3:0::NO::P3_FID:1659724 Accessed 5 September 2019.

The sections below provide an overview of special habitats and endangered species known to exist within the Fowler planning area and provide additional context to land use decisions that will be considered during the General Plan Update process.

Habitat Types

The majority of the Fowler planning area consists of developed, ruderal, and agricultural habitats. Due to urbanization and agricultural practices, water features in the vicinity are limited to channelized irrigation canals and human made basins. Habitats within the planning area are disturbed or frequently maintained and therefore are of relatively low quality for most native wildlife species.

Developed Habitats

Developed habitats include residential communities and commercial and industrial business development. Concrete sidewalks, paved streets and lots, and landscaping are present throughout the planning area. Landscaping consists of manicured lawns, flower beds, and ornamental trees and shrubs. Developed lands in the planning area represent low-quality habitat for the majority of wildlife species. However, trees and shrubs in landscaped areas may provide nesting habitat for disturbance-tolerant species.

Ruderal Habitats

Ruderal habitats are characterized by a high level of human disturbance and dominated by non-native plant species or devoid of vegetation. Within the City of Fowler, there are vacant, ruderal parcels of land interspersed throughout developed areas and agricultural lands. Ruderal areas within the planning area have minimal value to wildlife due to frequent human disturbance, presence of domestic dogs and cats, and an absence of vegetative cover. However, some disturbance-tolerant species may make incidental use of these ruderal lands.

Agricultural Habitats

Vineyards and orchards — single species of grapes or trees planted in a row — dominate the agricultural landscape in Fowler and the surrounding land. Rows under the vines or trees are usually sprayed with herbicides to prevent the growth of weedy herbaceous plants. Intensive agricultural practices in vineyards and orchards likely limit their value to wildlife; however, some avian and mammalian species have adapted to vineyard habitats.

Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. California Department of Fish and Wildlife (CDFW) is responsible for classifying and mapping all natural communities in California. Just like the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern within the planning area.

Designated Critical Habitat

The U.S. Fish and Wildlife Service (USFWS) often designates areas of “critical habitat” when listing species as threatened or endangered. Critical habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. These areas designated as critical habitat can be found within the CNDDDB.

According to CNDDDB, there are no areas of designated critical habitat within the planning area.

Wildlife Movement Corridors

Wildlife movement corridors are routes that wild animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The planning area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the City of Fowler is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration.

Special Status Plants and Animals

A search of the CNDDDB for published accounts of special status plant and animal species was conducted for the *Malaga* and *Conejo* 7.5-minute quadrangles that contain the City of Fowler in its entirety, and for the 10 surrounding quadrangles: *Caruthers*, *Riverdale*, *Laton*, *Burriss Park*, *Selma*, *Sanger*, *Round Mountain*, *Clovis*, *Fresno North*, and *Fresno South*.

According to CNDDDB, there have been no recorded observations of special status species within the planning area; however, the special status plant and animal species list, found in **APPENDIX A**, have recorded observations in the surrounding vicinity. Due to past and ongoing disturbance and an absence of suitable habitat, many of the species listed in

APPENDIX A are unlikely to occur within the planning area. Furthermore, a number of the observations were recorded more than 50 years ago, and the associated populations may have been subsequently extirpated.

HYDROLOGY AND WATER QUALITY

The City of Fowler is located within the Kennedy Pond watershed.²⁰ The San Joaquin River and the Kings River are the two principal drainages within the San Joaquin Valley. Fowler is located approximately 18 miles south of the San Joaquin River and nine miles west of the Kings River.

The City of Fowler lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.²¹ Due to groundwater overdraft and contamination from agricultural chemicals,

²⁰ (U.S. Environmental Protection Agency, n.d.)

²¹ DWR Bulletin 118 Groundwater Basin Boundary Assessment Tool. <https://gis.water.ca.gov/app/bbat/> Accessed 3 September 2019.

provision of reliable sources of groundwater in both quantity and quality have been a challenge throughout the Central Valley.

Recent legislation has led to more proactive management plans related to groundwater. In 2014, the Sustainable Groundwater Management Act (SGMA) was enacted which requires government and water agencies of certain groundwater basins to halt overdraft and bring the basins into balanced levels of pumping and recharge. Under SGMA, local agencies form Groundwater Sustainability Agencies (GSAs) to manage basins and adopt Groundwater Sustainability Plans (GSPs) to outline how groundwater basins will reach long term sustainability. The City of Fowler is part of the South Kings GSA. The Groundwater Sustainability Plan for this GSA has recently been released for public review. Updates to the City of Fowler's General Plan will be coordinated with the adopted GSP.

For more detailed information on the City of Fowler's water supply and delivery system, please see **Chapter 6 Public Services and Facilities**, which provides an overview of City utilities and public services.

AIR QUALITY

Federal and state laws require emissions control measures in areas where air pollution exceeds standards. There are a variety of agencies implementing air pollution reduction programs at the federal, state, and local level.

The federal government, primarily through the Environmental Protection Agency (EPA), sets standards; oversees state and local actions; and implements programs for toxic air pollutants, heavy-duty trucks, locomotives, ships, aircraft, off-road diesel equipment, and some types of industrial equipment.²² Areas classified under the Federal Clean Air Act are labeled as either "attainment", "nonattainment", or "extreme nonattainment" based on whether National Ambient Air Quality Standards (NAAQS) have been achieved.

State government, through the California Air Resources Board (CARB) and Bureau of Automotive Repair, sets more stringent state standards, oversees local actions, and implements programs for motor vehicle emissions, fuels, and smog checks.²³ State air quality standards are determined by CARB and are based on California Ambient Air Quality Standards (CAAQS).

At the local level, air pollution control districts develop plans and implement control measures in their areas. The City of Fowler lies within the San Joaquin Valley Air Basin (SJVAB), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). There are eight counties managed by the SJVAPCD, including the County of Fresno and City of Fowler by extension.

Air quality in the SJVAB is influenced by a variety of factors, including topography, regional meteorology, pollutant transport, and increasing wildfires due to drought and forest mismanagement. The SJVAB is approximately 250 miles long and is shaped like a narrow bowl. The sides and southern boundary of the "bowl" are bordered by mountain ranges, including the Sierra Nevada to the east, the Tehachapi Mountains to the south, and the California coastal ranges to the west. The bowl-shaped Valley collects and holds

²² (San Joaquin Valley Air Pollution Control District, 2012)

²³ (San Joaquin Valley Air Pollution Control District, 2012)

emissions caused by the activities of the Valley's residents and their vehicles, as well as vehicles from other areas traveling on SR 99 and Interstate 5.

The Valley's weather conditions include frequent temperature inversions, long, hot summers, and stagnant, foggy winters. The presence of surrounding mountains, in combination with stagnant weather patterns, prevent the dispersal of pollutants that accumulate within the Valley, while temperature inversions prohibit the vertical mixing of air mass, effectively acting as a lid, trapping pollution within the Valley basin.²⁴

In addition, pollutants are also transported into the Valley from the Bay Area and the Sacramento Valley. Air pollution transported from the San Francisco Bay and Sacramento areas account for approximately seven percent of the total emissions in the South Valley (the Valley portion of Kern and Tulare Counties).²⁵

In addition to topographical and meteorological factors, wildfires are becoming an increasingly problematic factor in reducing pollution and achieving attainment goals. For the last several years, tree mortality due to lack of water, drought-related bark beetle infestation, and the buildup of combustible materials through decades of forest mismanagement have made the forests in the region vulnerable to wildfire activity. Consequently, California and the Western United States have seen an increase in the frequency of large wildfires during the past 10 years. In 2018, more than 7,000 wildfires were recorded in California, 34 of which impacted the Valley's air quality and the health of Valley residents from July through November. Pollutant emissions from wildfires are enormous and greatly exceed all mobile and stationary source emissions in the Valley, easily overwhelming all control measures.²⁶

Attainment Status

Local air districts use air quality plans, or attainment plans, to bring the applicable air basin into attainment with all State and Federal ambient air quality standards designed to protect the health and safety of residents within that air basin.

As illustrated in **Table 5-1** below, the San Joaquin Valley is designated as a State and Federal nonattainment area for ozone (O₃) and particulate matter at 2.5 microns (PM_{2.5}), and a State nonattainment area for particulate matter at 10 microns (PM₁₀). These criteria pollutants are discussed in more detail below. The SJVAB is in attainment for the remainder of the criteria pollutants. For more detailed air quality standards and current measurements for the San Joaquin Valley, please see **APPENDIX B**.

Despite being hard to detect through sight and smell, both ozone and particulate matter have harmful health impacts, including coughing, wheezing, chest pain, headaches, nausea, and fatigue. Recently, poor air quality has been linked to dementia in multiple studies.²⁷ Additionally, ozone and particulate matter can aggravate chronic respiratory diseases, such as asthma and bronchitis and when exposed to high levels people can experience shortness of breath and impaired lung function.²⁸

²⁴ (San Joaquin Valley Air Pollution Control District, 2004)

²⁵ (San Joaquin Valley Air Pollution Control District, 2016)

²⁶ (San Joaquin Valley Air Pollution Control District, 2018)

²⁷ (Reuben, 2019)

²⁸ (San Joaquin Valley Air Pollution Control District, 2012)

Ozone

Ground level ozone, not to be confused with atmospheric ozone, is unique in that it requires the presence of two separate pollutants to be created. Ozone, also more commonly referred to as smog, is a pollutant that forms when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) combine in the presence of sunlight. Virtually invisible and odorless, smog can have harmful health impacts and is the most intense on hot summer days. Attainment plans carried out by SJVAPCD focus on reducing the sources of VOCs and NO_x. **Figure 5-2** and **Figure 5-3** provides an overview of where VOCs and NO_x typically form in the San Joaquin Valley.²⁹

Table 5-1: Ambient Air Quality Attainment Designation

Ambient Air Quality Standards & Attainment Designation			
Pollutant	Averaging Time	California Standards	National Standards
Ozone (O ₃)	1-hour	Nonattainment/Severe	No Federal Standard
	8-hour	Nonattainment	Nonattainment (Extreme)
Particulate Matter (PM ₁₀)	AAM ³⁰	Nonattainment	Attainment
	24-hour		
Fine Particulate Matter (PM _{2.5})	AAM	Nonattainment	Nonattainment
	24-hour		
Carbon Monoxide (CO)	1-hour	Attainment/Unclassified	Attainment/Unclassified
	8-hour		
	8-hour (Lake Tahoe)		
Nitrogen Dioxide (NO ₂)	AAM	Attainment	Attainment/Unclassified
	1-hour		
Sulfur Dioxide (SO ₂)	AAM	Attainment	Attainment/Unclassified
	24-hour		
	3-hour		
	1-hour		
Lead (Pb)	30-day Average	Attainment	No Designation/Classification
	Calendar Quarter		
	Rolling 3-Month Average		
Sulfates (SO ₄)	24-hour	Attainment	No Federal Standards
Hydrogen Sulfide (H ₂ S)	1-hour	Unclassified	No Federal Standards
Vinyl Chloride (C ₂ H ₃ Cl)	24-hour	Attainment	No Federal Standards
Visibility-Reducing Particle Matter	8-hour	Unclassified	No Federal Standards

Source: California Air Resources Board (CARB)

²⁹ (San Joaquin Valley Air Pollution Control District, 2018)

³⁰ Annual Arithmetic Mean

Figure 5-2: Annual VOC Emissions

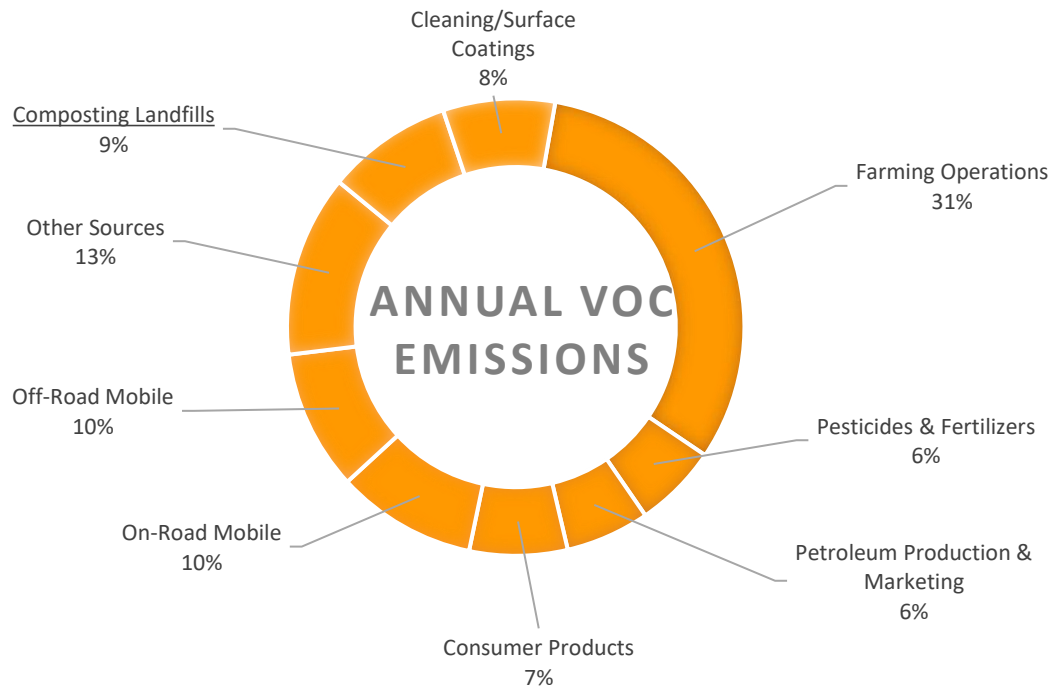
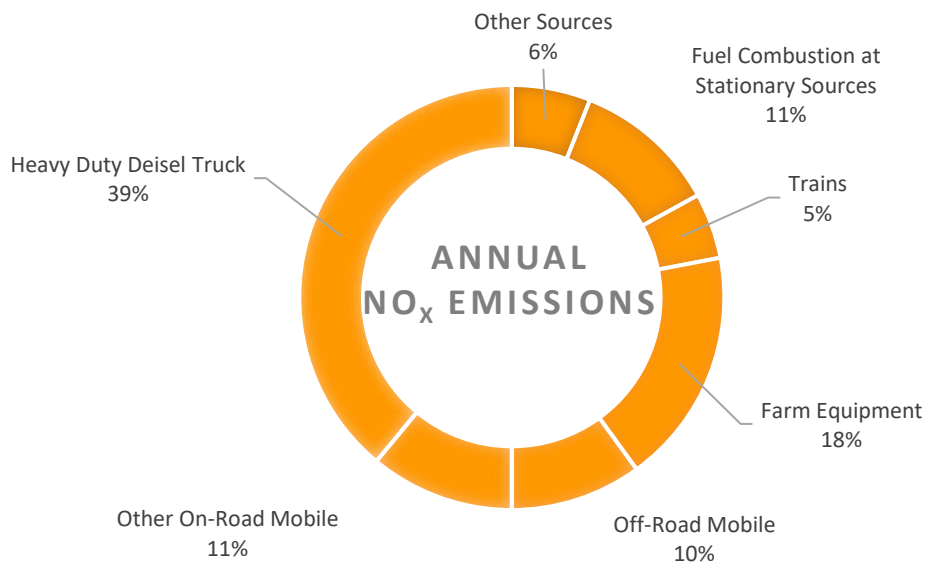


Figure 5-3: Annual NO_x Emissions



Particulate Matter

Particulate matter is made up of fine liquid or solid matter, such as dust, ash, soot, smoke, aerosols, and condensing vapors.³¹ Once emitted, these particles can remain suspended in the air for long periods of time, negatively impacting health and aggravating chronic respiratory diseases. The EPA has set standards

³¹ (San Joaquin Valley Air Pollution Control District, 2012)

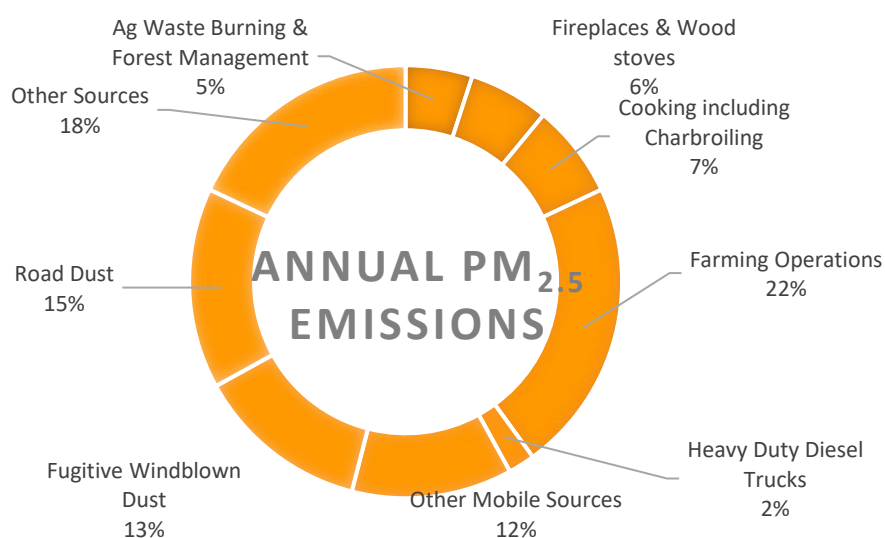
for particles smaller than 10 microns (PM₁₀) and smaller than 2.5 microns (PM_{2.5}). Particulate matter is either emitted directly from primary sources, in the form of dust or soot, or develops in the atmosphere through photochemical reactions or gaseous precursors, which are secondary sources. Much of the Valley's ambient particulate matter originates from atmospheric reactions of NO_x.³²

Figure 5-4 provides an overview of PM 2.5 emissions sources throughout the Valley.³³

In order to reduce particulate matter pollution in the San Joaquin Valley, the SJVAPCD has adopted the 2018 PM_{2.5} Plan. This plan commits the district to pursue clean air strategies through:

- Restrictions on the use of wood burning fireplaces;
- New rules for industrial pollution sources, such as agriculture, boilers, steam generators, and combustion engines;
- Innovative strategies for commercial restaurants using underfired charbroilers;
- A suite of clean air grants for Valley residents focusing on clean air vehicles, carpools, and replacing gas mowers with electric mowers; and
- Incentive programs for Valley businesses focusing on replacing polluting trucks, off-road vehicles, and agricultural equipment.

Figure 5-4: Annual PM_{2.5} Emissions



Greenhouse Gases

Commonly identified GHG emissions and sources include the following:

Carbon dioxide (CO₂) is an odorless, colorless natural greenhouse gas. CO₂ is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter;

³² (San Joaquin Valley Air Pollution Control District, 2018)

³³ (San Joaquin Valley Air Pollution Control District, 2018)

respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood.

Methane (CH₄) is a flammable greenhouse gas. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

Nitrous oxide (N₂O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Water vapor is the most abundant, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone (O₃) is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. HFCs are human made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

6. PUBLIC SERVICES AND FACILITIES

The purpose of this chapter is to report on the current public facilities and services, including utilities, provided by the City of Fowler or quasi-public organizations. These services include education, library, law enforcement, fire protection and emergency response, landscape and lighting, water, wastewater, stormwater, and solid waste.

EDUCATION

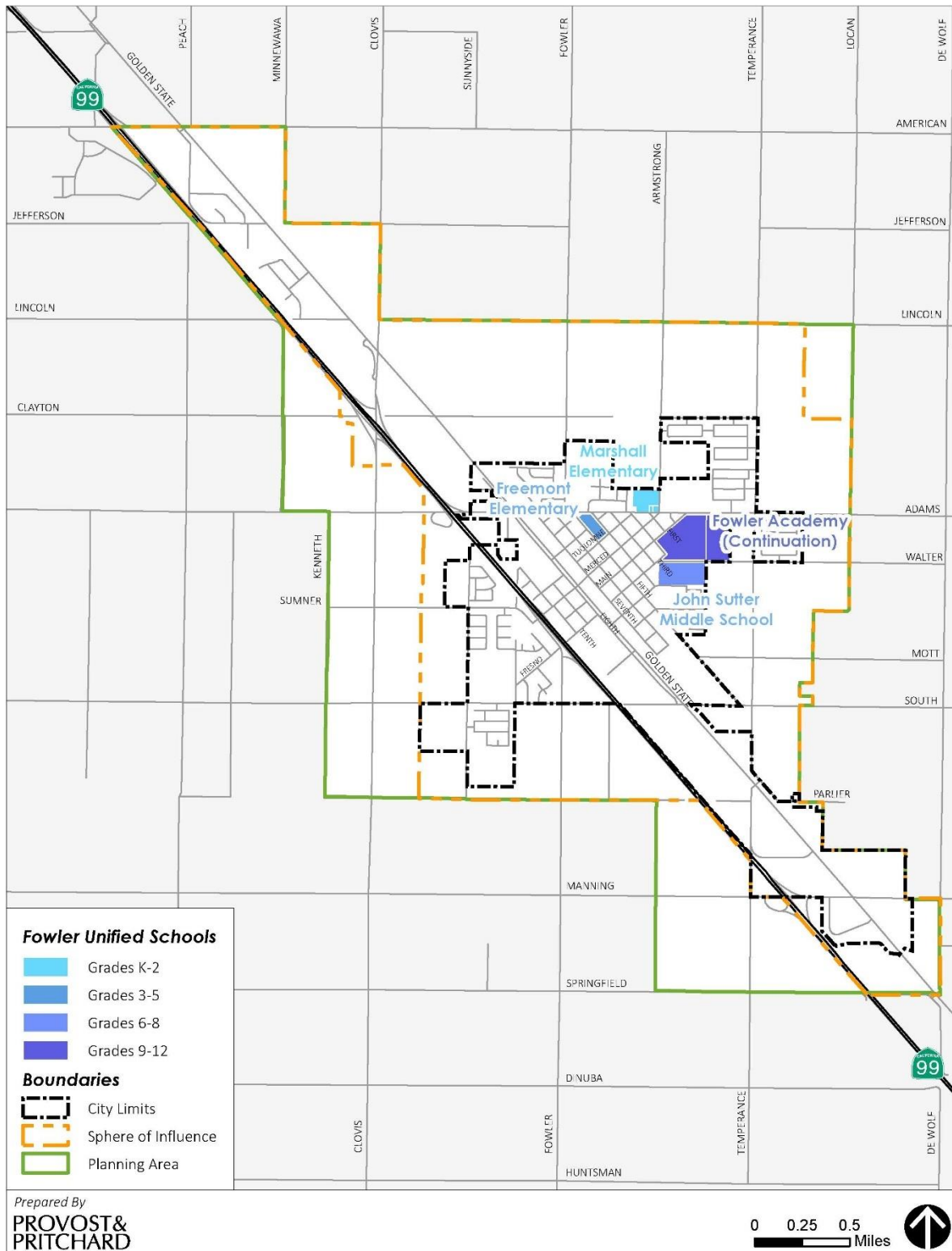
The City is served by the Fowler Unified School District (FUSD) which provides K-12 school education. Fowler is home to two elementary schools, one high school, and one continuation high school. Over the past five years, the FUSD has maintained a graduation rate of 98 percent, the highest in Fresno County.³⁴ In November 2016, Measure J passed with 78 percent voter approval. This school bond authorizes up to \$42 million in funds to modernize and upgrade the District's facilities. As of publication, the FUSD has completed pool construction at Fowler High School, modernized playground equipment at the elementary schools, and widened Walter Avenue from the high school to Temperance Ave, among other improvements. The District and the City have established joint powers agreements for the provision of park and recreation facilities. See **Chapter 5 Open Space and Conservation** for details on the agreements. **Figure 6-1** shows the location of the FUSD schools operated by the District that lie within the Fowler planning area.

LIBRARY SERVICES

A reading room was established in Fowler in 1890, and Fresno County Public Library opened a branch in the City in 1910. In 1913, the two merged and the library remained in the same building for 94 years until 2008 when the Fowler branch was relocated to a new 8,660 square-foot building at 306 S. 7th Street. While not city run, the branch offers accessible and inclusive programs year-round for Fowler residents of all ages. In addition to lending materials, the branch also provides 20 internet stations for public use, printing and photocopying for a fee, and meeting room space.

³⁴ Fowler Unified School District. <https://www.fowlerusd.org/> Accessed 4 September 2019.

Figure 6-1: Fowler Unified School District Facilities



POLICE SERVICES

The Fowler City Police Department provides law enforcement services within the City limits. The entire City is served from the headquarters office in downtown Fowler, at 128 S. 5th Street in City Hall. Fowler has no detention facilities and prisoners are taken to the Fresno County Jail in Fresno.

In August 2018, Fowler's City Council voted unanimously in favor of adding Measure N to the upcoming election ballot. The measure passed on November 6, 2018 with approximately 55% in favor. Measure N authorizes the City to enact a one percent sales tax with revenues earmarked to build a new police station and restore or replace out-of-date police equipment. Revenue may also be used to repair City streets and pay escalating pensions and other general fund obligations. At the time of the election, the one percent tax was estimated to generate approximately \$953,000 annually toward these causes. As of the end of the 2018 fiscal year, Measure N has generated approximately \$9,000 and continues to contribute additional funding in the current fiscal year.

Staffing

The Fowler Police Department currently has one Chief of Police, ten sworn officers, three sworn part-time officers, and two support staff members. The staffing ratio as of 2019³⁵ is approximately 1.5 full-time officers per 1,000 residents. Equipment includes 15 patrol cars. The police department operates two patrol units on a 24-hours basis in two 12-hour shifts, with a minimum of two officers per shift. Support staff includes one civilian evidence technician and one administrative employee. Unincorporated portions of the planning area are served by the area 3 substation of the Fresno County Sheriff's Department, which employs 29 deputy sheriffs, 11 detectives, and four service officers.

FIRE SERVICES/EMERGENCY RESPONSE

This document contains information that is accurate as of 2019. Since that time, the City has begun a process to change the way they provide fire services and emergency response in Fowler.

The City of Fowler Fire Department is a volunteer-based department and provides services within the City limits. The department has 12 firefighters and is approved for 14. There are no plans to transition to a full-time department. The City has a contract with the City of Selma for emergency medical services provided by American Ambulance. The department is also capable of emergency medical support. Emergency response times are six minutes during the day and eight to 10 at night while American Ambulance responds to emergencies within eight minutes on average.

Construction on a new fire station across from City Hall is expected to be completed in December 2019 and the station will be staffed in January 2020. Once operating, the department will have four fire engines at its disposal, all of which will meet the National Fire Protection Association's standards for fire apparatus.³⁶

³⁵ as of August 20th, 2019.

³⁶ National Fire Protection Association. <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards>
Accessed 4 September 2019.

Two type 1 engines will allow the department to address structural fires with a minimum of 1,000 gallons per minute of water transfer. Two wildland engines, a type 3 and a type 5, will equip the department to fight wildfires. Wildland engines are designed to pump-and-roll, where water is sprayed while the truck is on the move. Compared to type 3 engines, type 5 engines have a smaller tank capacity but increased maneuverability.

Unincorporated portions of the planning area are within the jurisdiction of the Fresno County Fire Protection District. Additionally, the District responds to some emergencies within the City limits, including vehicle accidents and structure fires. The City has entered into a transition agreement with the District to provide property tax revenue as areas annex to the City to reduce fiscal impacts on the District.

LANDSCAPE MAINTENANCE DISTRICT

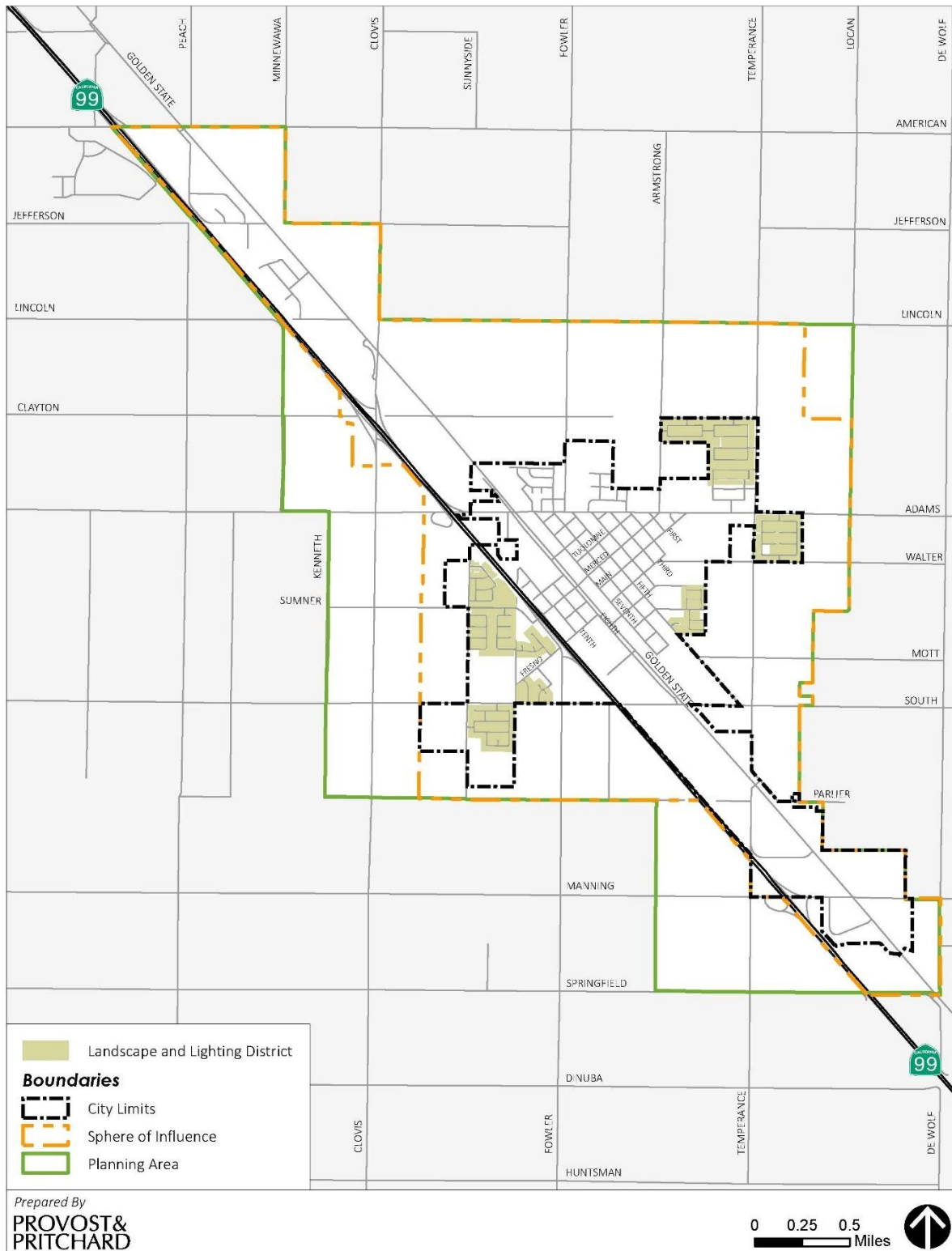
A Landscape Maintenance District (LMD) is a special district formed to provide property owners the opportunity to pay for enhanced landscaping and appurtenant improvements, maintenance, and services beyond those generally provided by City of Fowler. The LMD is funded through special property taxes assessed on the properties served by the district. There is one LMD within the City of Fowler, which serves several neighborhoods throughout the City. A map of parcels included in the LMD can be seen in **Figure 6-2**.

WATER SUPPLY AND WATER QUALITY

The City of Fowler relies on groundwater for its drinking water supply, sourced from six local wells. Distribution is provided by the Water Division of the City's Public Works Department through a system in which pumps deliver water to a network of mains, pipelines, and laterals to distribute water to residents and businesses. In accordance with state and federal standards, municipal water is tested monthly to ensure quality. The City's Public Works department is responsible for repairs and replacement of water lines, pumps, meters, and other equipment and maintains the integrity of the system.

In 2014, the City of Fowler entered into an agreement with Consolidated Irrigation District (CID) to fund groundwater recharge programs in order to sustain the aquifer the City is relies on. CID provides water from the Kings River for groundwater recharge and irrigation to more than 6,000 growers within its 144,000-acre service area, which includes land surrounding the City of Fowler.

Figure 6-2: Landscape Maintenance District



City of Fowler Water Rate Study

The City of Fowler Water Rate Study was completed in April 2015. The purpose of the report was to identify whether existing water rates would adequately provide for reliable water supply and delivery based on current needs and the state of City infrastructure. The study reported that previous rate increases (a base rate increase in 2003 and an overuse rate increase in 2009) are no longer keeping pace with operating costs. The study proposed rate increases to cover operating and maintenance costs and to begin adequately funding necessary capital improvements to the water system.

The report also estimated that annual costs for groundwater recharge with CID could total as much as \$200,605 through 2022. The City has identified approximately \$2,000,000 of capital improvement projects needed to upgrade the system over a ten-year period. The upgrades are necessary for the City to maintain current levels of service.³⁷

South Kings Groundwater Sustainability Agency and Plan

In 2014, the Sustainable Groundwater Management Act (SGMA) was enacted which requires government and water agencies of certain groundwater basins to halt overdraft and bring the basins into balanced levels of pumping and recharge. Under SGMA, local agencies form Groundwater Sustainability Agencies (GSAs) to manage basins and adopt Groundwater Sustainability Plans (GSPs) to outline how groundwater basins will reach long term sustainability. The City of Fowler is part of the South Kings GSA. The Groundwater Sustainability Plan for this GSA has recently been released for public review. Updates to the City of Fowler's General Plan will be coordinated with the adopted GSP.

WASTEWATER SYSTEM

In 1971, Fresno LAFCo formed the Selma-Kingsburg-Fowler County Sanitation District (District) pursuant to the County Sanitation District Act, California Health and Safety Code section 4700 et seq. At that time, the District's objective was to address significant reoccurring sewage problems within the three member cities. The County of Fresno requested the formation of a sanitation district as a vehicle to pursue federal and state aid to construct a regional treatment facility. Construction of the District's regional wastewater treatment plant unified the three benefitting cities with the fiscal responsibility to fund the District's long-term operation and administration costs. The District provides sewer service and wastewater treatment to its member cities through a mutual agreement.³⁸

The District owns, operates, and maintains a regional wastewater treatment plant that collects wastewater originating from the three cities and portions of unincorporated territory in Fresno County. Each city owns the section of the wastewater collection system within their respective city limits, and the District manages operations and performs maintenance, refurbishment, and replacement service on the entire system.³⁹

³⁷ (Peters Engineering Group, 2015)

³⁸ (SKF Municipal Service Review and SOI Update Report, 2017)

³⁹ Ibid.

The District is a dependent special district. Its governing body consists of five board members: one city council member from each of the three cities and two Fresno County supervisors. When the members of the board of supervisors or city councils change, the composition of the District's board is updated accordingly.⁴⁰

The capacity of the District's collection system was evaluated by the District's 2016 Collection System Master Plan, which included the Expansion Area. According to the Master Plan, the hydraulic design flows used for the capacity of the collection system consist of two key components: Peak Wet Weather Flows (PWWF) and Peak Dry Weather Flows (PDWF). The District anticipates the sewer system will continue to be built out consistent with the Master Plan. The District estimates its 2020 flow capacities as 7.87 million gallons per day (mgd) PDWF and 15.9 mgd PWWF.

STORMWATER SYSTEM

The City currently does not adhere to a storm drainage master plan. As such, the City reviews the capacity of its system and need for new storm drainage infrastructure as development projects are submitted, on a project-by-project basis. Each applicant is responsible for providing engineering details as part of their project submittal, which is then reviewed by the City Engineer. There are trunk lines that lead to various basins throughout the City, however some projects retain stormwater on-site through the incorporation of a new basin. A map of stormwater basin locations, as well as trunk lines, can be seen in **Figure 6-3**.

SOLID WASTE COLLECTION, RECYCLING, AND DISPOSAL

Solid waste collection in the City of Fowler is provided by Waste Management, Inc. The City's solid waste program includes waste disposal collection, a regular recyclables pickup program, and a green waste pickup program. After removing recyclable materials, Fowler's solid waste is transferred to the Kettleman Hills Nonhazardous Codisposal Site located at 35251 Old Skyline Road in Kettleman City, CA approximately 52 miles southeast of Fowler. The landfill is currently at approximately 44 percent capacity and has no scheduled closure date. In 2015, the City adopted Ordinance No. 2015-02, which mandates recycling and ensures compliance with Assembly Bill 341 which requires cities and counties to reduce, reuse, and recycle solid waste to the maximum extent feasible.

⁴⁰ Ibid.

Figure 6-3: Stormwater System Facilities

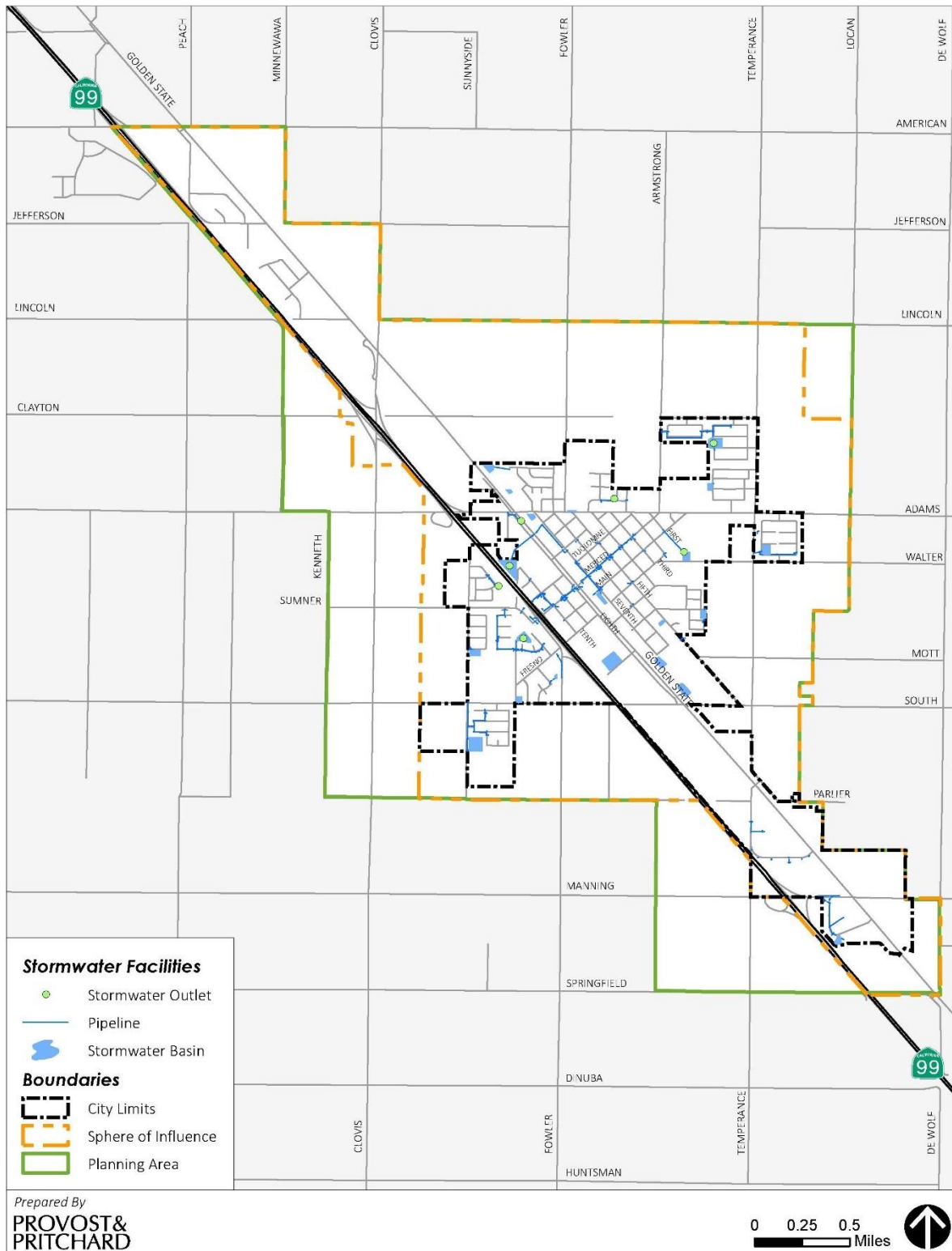
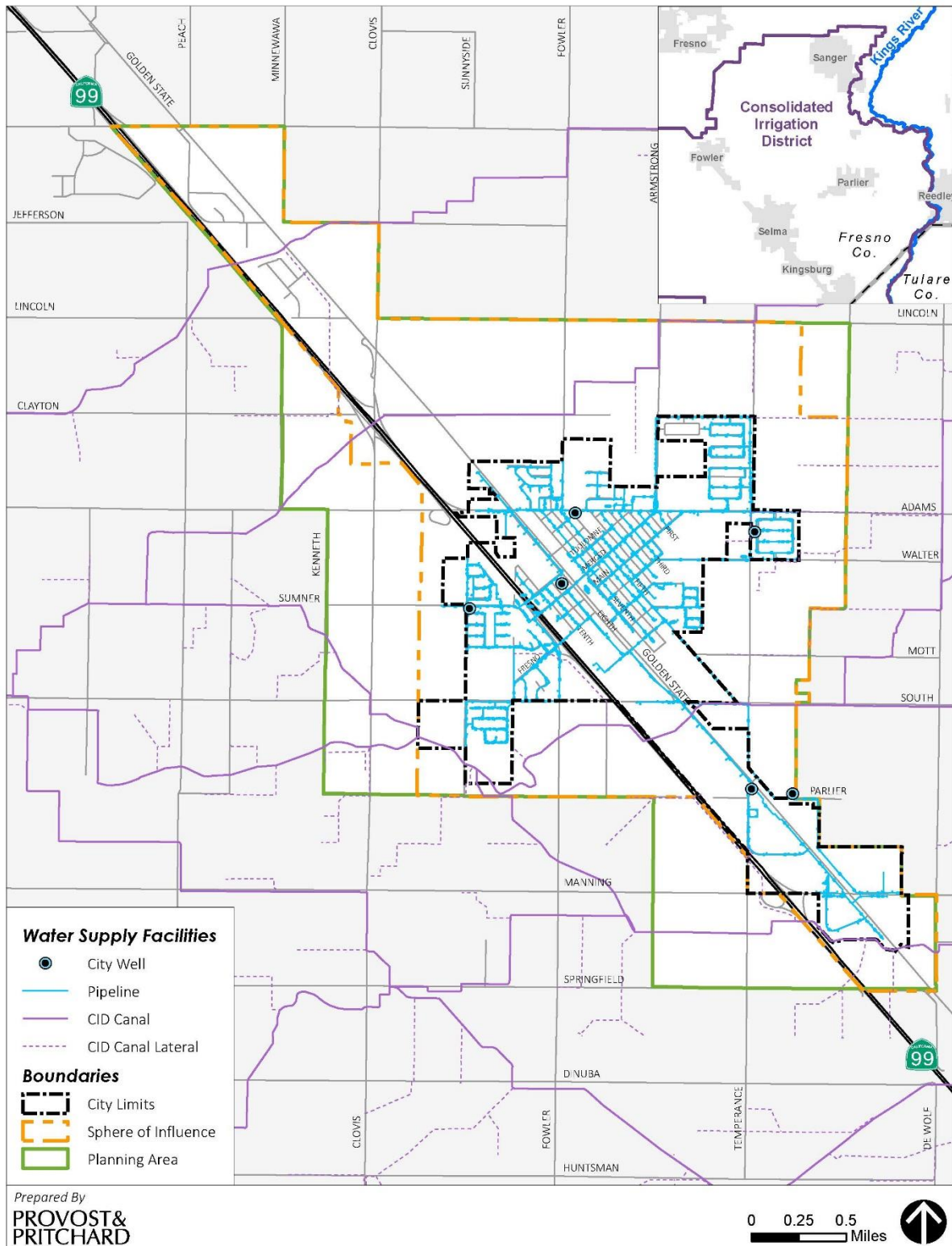


Figure 6-4: Water Supply Facilities



7. HAZARDS AND SAFETY

This chapter reviews the natural and humanmade hazards with potential to affect the City of Fowler. Hazards discussed include geologic and seismic issues, flooding, hazardous materials and contaminated sites, noise, and climate adaptation.

GEOLOGIC AND SEISMIC HAZARDS

The City of Fowler is located in central Fresno County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium.⁴¹ The Valley's geology makes for incredible fertility, but it also means the area is threatened by concerns like subsidence. The following sections assess Fowler's susceptibility to settling soil and other geologic hazards.

Faults and Shaking

The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The statute prohibits the location of most types of structures intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

The City of Fowler is not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults within the planning area. The nearest major fault is the San Andreas Fault, located approximately 65 miles southwest of the planning area. The San Andreas fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. The Nunez Fault is approximately 51 miles southwest and the Poso Fault is approximately 51 miles south of the planning area.

Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, the groundwater table, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in Fresno County, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high water table coincide. However, soil types along the Valley floor are not conducive to liquefaction because they are generally too coarse. Furthermore, the average depth to groundwater within the planning area is approximately 85 to 95 feet which also minimizes liquefaction potential.⁴²

⁴¹ (Harden, 1998, p. 479)

⁴² (City of Fowler, 2019)

Landslides

Landslides usually occur in locations with steep slopes and unstable soils. The City of Fowler is located on the Valley floor where no major geologic landforms exist, and the topography is essentially flat and level. The nearest foothills are approximately 15 miles northeast of the City. Therefore, the City of Fowler has minimal-to-no landslide susceptibility.

Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of groundwater, oil, or natural gas. These areas are typically composed of open-textured soils, high in silt or clay content, that become saturated. Although some areas in Fresno County have experienced subsidence due to groundwater overdraft, Fowler's elevation has remained relatively unchanged. The most current data from National Aeronautics and Space Administration (NASA) shows Fowler and surrounding lands have experienced minimal subsidence in recent years.⁴³

Flooding

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRM) that show regulated flood hazard zones, which are then used to assign risk and insurance rates for homeowners and businesses. As illustrated in **Figure 7-1**, potential flood hazards in the Fowler planning area are set forth on three FIRMs, which divide the area into flood hazard zones. Each flood hazard zone depicts the severity of or the type of flooding expected to occur in an area. FIRMs show the areas susceptible to a 100-year flood, which is defined by FEMA as "a flood with a 1 percent chance of being equaled or exceeded in any given year." The maps also show areas susceptible to 500-year flood hazards, which consist of areas that have a 0.2 percent chance of flooding in any given year. If an area is not protected from the 100-year flood, mandatory flood insurance is required.

The FEMA flood hazard designations from the FIRMs for the City of Fowler are described as follows:

Zone A. This flood insurance rate hazard zone corresponds to areas with a 1 percent annual chance of flooding, known as the 100-year floodplain. No depths or base flood elevations are shown within this zone. Flood insurance is required to be purchased within this zone and development is subject to floodplain management standards.

Zone X (shaded). This flood insurance rate hazard zone represents an area of moderate flood hazard, outside of the 100-year floodplain. This area has a 0.2 percent annual chance of flooding, which is also referred to as the 500-year flood zone. Mandatory flood insurance and building standards do not apply to this zone.

⁴³ NASA InSAR (Interferometric Synthetic Aperture Radar) data provided by the California Department of Water Resources (DWR).

Zone X (unshaded). The majority of the planning area lies within this flood insurance rate hazard zone which represents an area of minimal flood hazard. These areas are outside of special flood hazard areas and at elevations above those susceptible to the 500-year flood.

Central Valley Flood Protection Plan

The Central Valley Flood Protection Plan (CVFPP), first adopted in 2012 and updated every five years, was developed to better manage flood risk in the Central Valley using the following strategies:

- *Prioritize the state's investment in flood management over the next three decades,*
- *Promote multi-benefit projects, and*
- *Integrate and improve ecosystem functions associated with flood risk reduction projects.*

Following adoption of the initial CVFPP in 2012, the California Department of Water Resources (DWR) funded development of six Regional Flood Management Plans (RFMPs) to address regional flood management goals and challenges. The planning area is not included in a RFMP because the risk of flood in the region is minimal. Fowler and the surrounding lands are not located within the 100-year, 200-year, or 500-year floodplains.⁴⁴

Dam Inundation

Hundreds of dams and reservoirs have been built in California for water supply, flood control, hydroelectric power, and recreational use. The storage capacity of these dams varies across the State from large reservoirs with capacities exceeding millions of acre-feet to small reservoirs with capacities from hundreds to thousands of acre-feet. Depending on the season, water from these reservoirs is released into the river systems throughout the State and eventually reaches the Pacific Ocean. The Kings River, which flows approximately 9 miles east of the planning area, is the primary river in the vicinity of Fowler. The Kings River is impounded by a dam which forms the one-million-acre-foot Pine Flat reservoir, located approximately 23 miles northeast of the planning area. If Pine Flat dam were to fail, a large portion of Fresno County, including the City of Fowler, would be inundated with water. **Figure 7-2** shows the dam inundation areas in the event that Pine Flat dam were to fail.

⁴⁴ (DWR Best Available Maps, n.d.)

Figure 7-1: Flood Zones

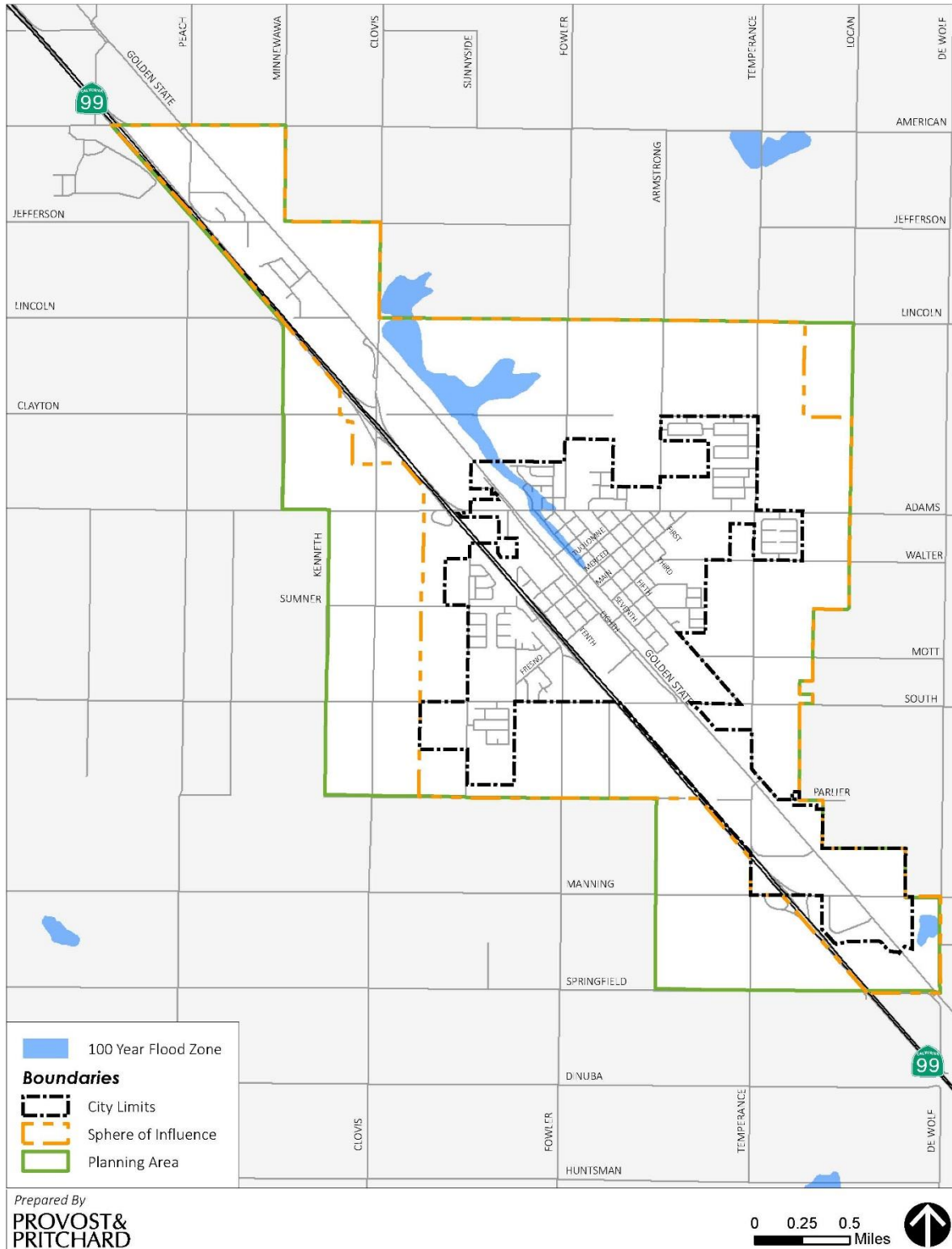
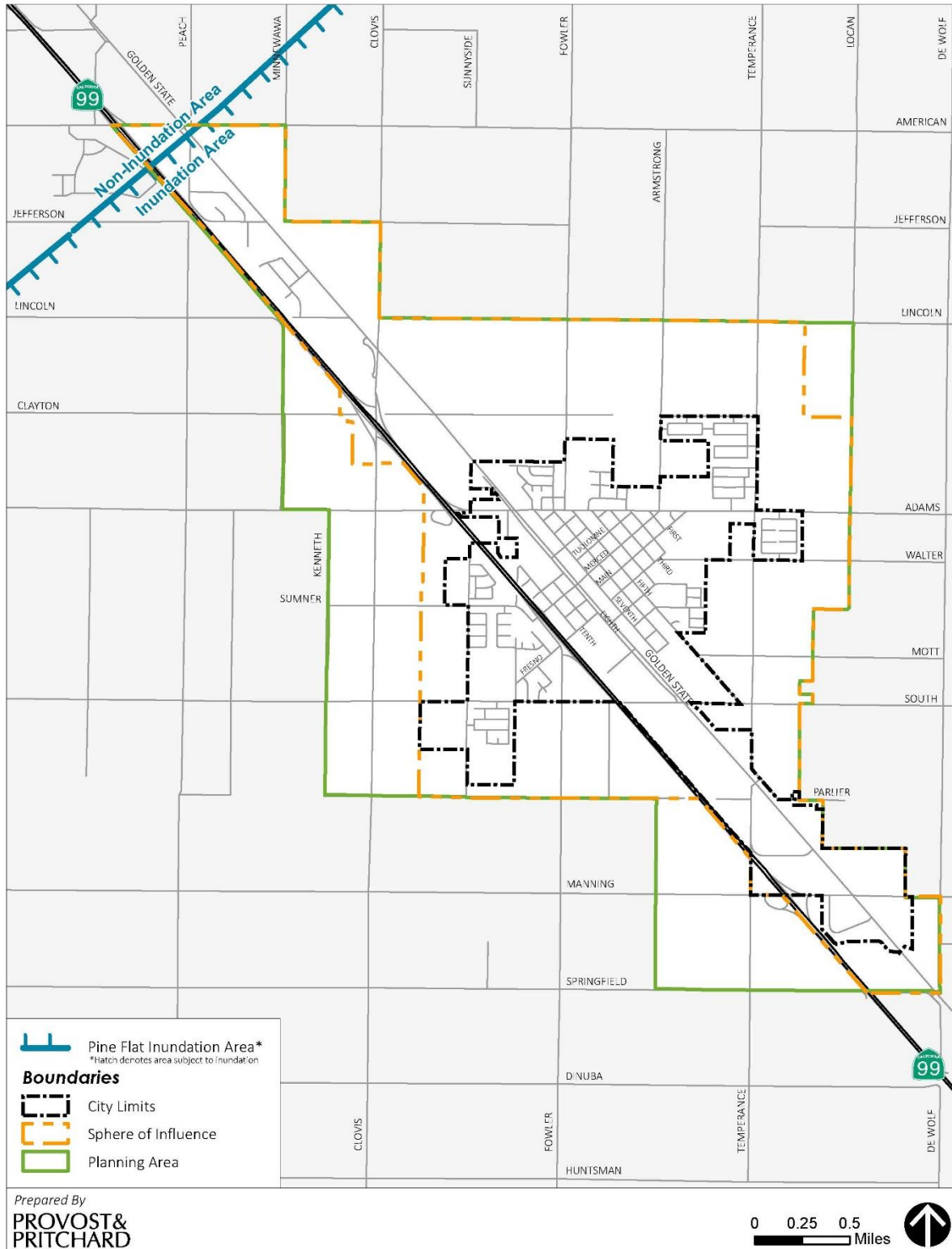


Figure 7-2: Dam Inundation Area



HAZARDOUS MATERIALS AND CONTAMINATED SITES

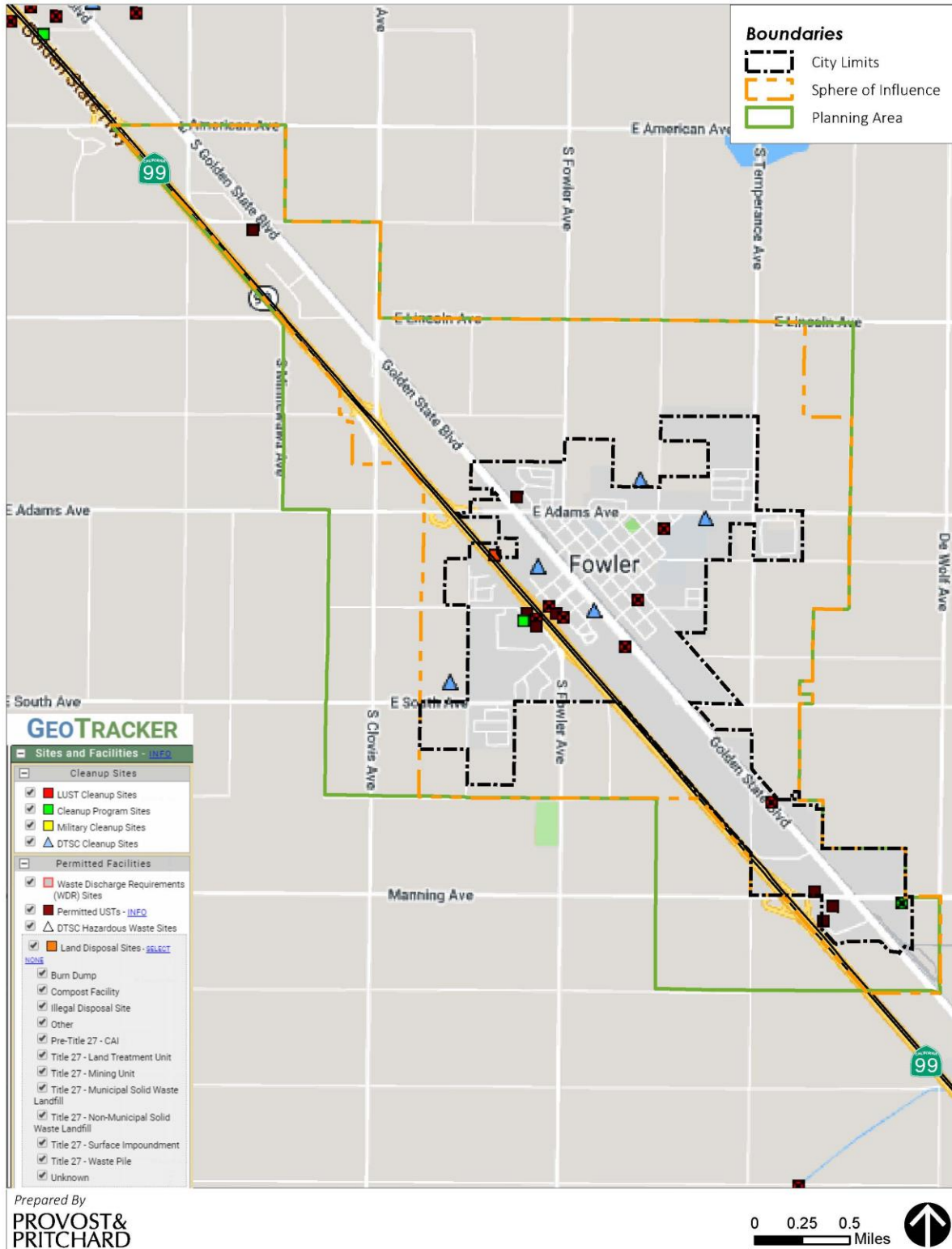
Sites where hazardous chemical compounds have been released into the environment can pose health threats. Historic or current activities, most often associated with industrial or commercial uses, such as car washes, gas stations, and dry cleaners, but also associated with some agricultural users, may result in the release of toxic substances which can contaminate soil and groundwater. Furthermore, ground disturbance through grading or excavation can result in public exposure to these chemicals. Improper handling of contaminated sites may result in further exposure via airborne dust, vapors, or surface water runoff.

The Hazardous Waste and Substances Sites (Cortese) List is a planning document that provides information about the location of hazardous materials release sites. Government Code (GC) Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (SWRCB) Geotracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups (SLIC) sites, Department of Defense (DOD) sites, and Land Disposal program. As illustrated in Table 7-1 and Figure 5-4 below, a search of the DTSC EnviroStor database and the SWRCB Geotracker performed on January 2, 2019 determined that there are four known open contaminated sites within the planning area. See **APPENDIX C** for a more detailed summary of each site's cleanup status.

Table 7-1: Contaminated Sites

ID	Site Name	Address	Case Type	Cleanup Status
Active Cases Identified by the DTSC				
60002638	Marshall Elementary School	142 North Armstrong	School Investigation	Active
10490099	PG&E Manufactured Gas Plant SQ-FK-FOW	West Fresno Street near South Eighth Street	Evaluation	Inactive: Needs Evaluation
Active Cases Identified by the SWRCB				
T10000011242	Wright Oil	114 North Sumner Avenue	Cleanup Program Site	Open: Site Assessment
L10004199996	Fowler City Landfill	Highway 99 and West Adams Avenue	Land Disposal Site	Open

Figure 7-3: Contaminated Sites



NOISE

Sound is a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. In most situations, there are many different sound sources, paths, and receivers. Noise is generally defined as loud, unpleasant, unexpected, or undesired sound.

The State of California and the City of Fowler both set guidelines for the compatibility of land uses with various noise levels. **APPENDIX B** contains a full review of state and local regulations pertaining to noise.

Noise Sensitive Land Uses

Noise sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities. Previous planning efforts have identified the following noise sensitive land uses within the City of Fowler:

- Residential uses,
- Schools,
- Parks,
- Hospitals, and
- Convalescent homes.

Major Noise Sources

Major sources of noise within the City include traffic on roadways, rail operations, and industrial facilities. Typical noise generators include:

- **Roadways** including major high-speed arterials, such as SR 99, East Adams Avenue, and Golden State Boulevard.
- **Rail Operations** such as Union Pacific Railroad, which provides freight service in Fowler.
- **Stationary Sources** which may include water well pump stations, trucking operations, auto maintenance and restoration shops, shopping centers, drive-thrus, car washes, loading docks, recycling centers, special events such as concerts and fireworks, and sports activities at schools. Mechanical systems, including heating, ventilating, air conditioning equipment, and swimming pool pumps, are also a considered stationary noise source.

CLIMATE ADAPTATION

The information contained in this chapter is discussed in further detail in the City of Fowler's *Climate Adaptation Policy Paper & Vulnerability Assessment* Report. The earth's climate has been warming for the past century. Scientific analysis of earth's historical climate shows that the climate system varies naturally over a wide range of timescales. In general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes. However, recent climate changes cannot be explained by natural causes

alone.⁴⁵ It is believed that this warming trend is related to anthropogenic⁴⁶ releases of certain gases, known as greenhouse gases (GHG), into the atmosphere. GHG absorb infrared energy that would otherwise escape from the Earth. As the infrared energy is absorbed, the air surrounding the Earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades.

Scientific and Legislative Context

Recent scientific analysis completed by the Intergovernmental Panel on Climate Change (IPCC) confirms that human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. This has led to atmospheric concentrations of carbon dioxide, methane, and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.

In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate. Some of these impacts include changes in extreme weather, changes in precipitation or melting snow which affect water resources, negative impacts on crop yields, and changing wildlife geographic ranges and migratory patterns.⁴⁷

In an effort to prepare for and mitigate climate change related impacts, new laws governing land use planning efforts have been enacted. In October 2015 the State of California passed Senate Bill 379, which ensures climate adaptation is integrated into local long-range planning documents such as Local Hazard Mitigation Plans and General Plan safety elements. These documents must be reviewed and updated to include climate adaptation and resiliency strategies, including:

1. ***A vulnerability assessment that identifies the risks climate change poses to the local jurisdiction and the geographic areas at risk from climate change.***
2. ***A set of adaptation and resilience goals, policies, and objectives based on the information specified in the vulnerability assessment.***
3. ***A set of feasible implementation measures designed to carry out the goals, policies, and objectives identified in the adaptation objectives.***

⁴⁵ (Causes of Climate Change, 2017)

⁴⁶ Resulting from the influence of human beings.

⁴⁷ (Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014)

8. ECONOMIC DEVELOPMENT

Fowler's economic strength comes from its residents, businesses, schools, community organizations, and government. Economic development efforts within the City work to expand resources for those groups. General Plan policies that foster infrastructure improvements, downtown preservation, and business friendly practices guide City leaders to enhance the quality of life and economy in Fowler. This chapter serves as a high-level overview of current conditions contributing to economic development. The topics covered below provide a snapshot of economic development organizations operating in the City, population demographics, as well as previous planning efforts which will frame the economic development policy discussions that are part of this General Plan Update.

PREVIOUS PLANNING EFFORTS

City of Fowler 2025 General Plan (2004)

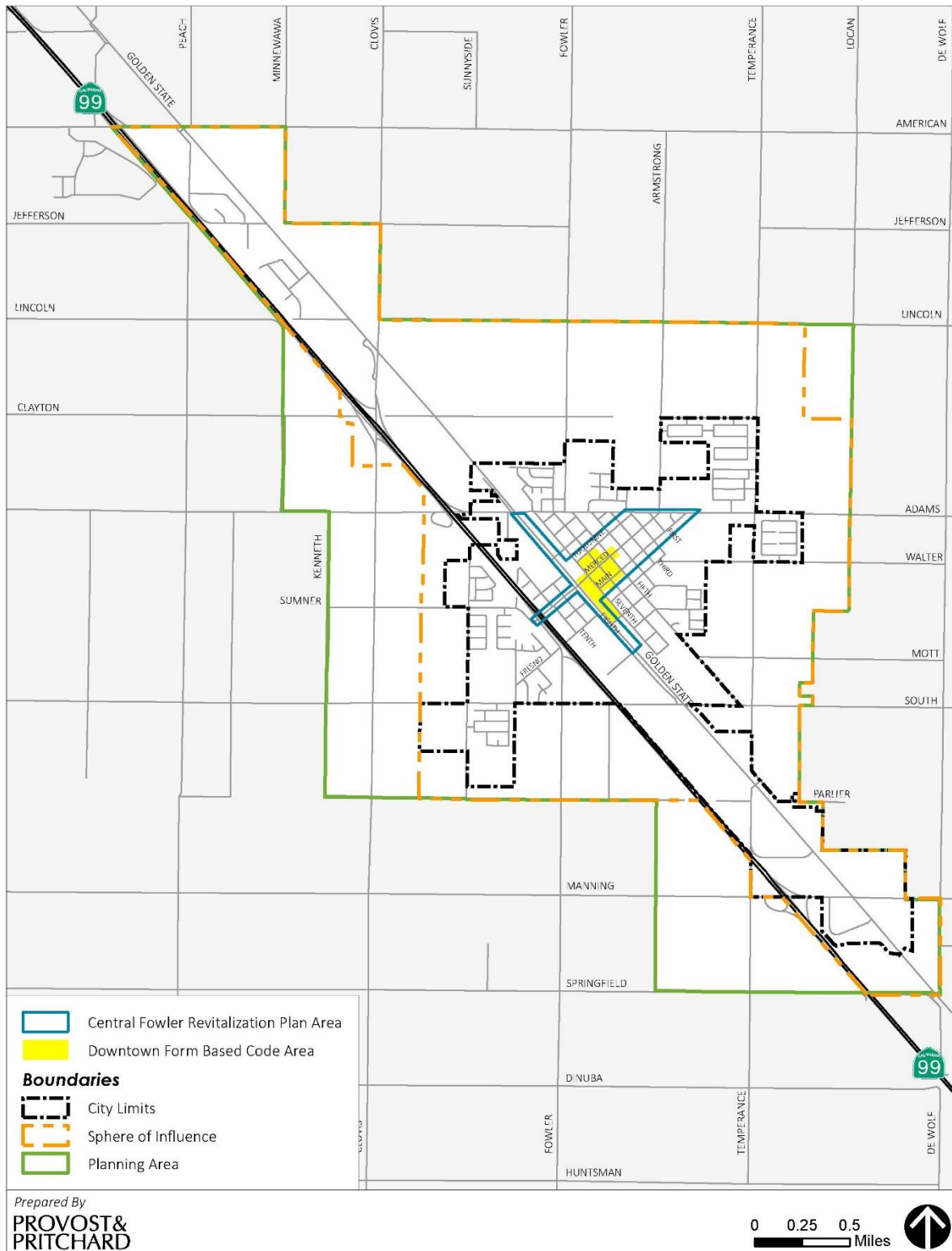
In 2004, the City of Fowler updated its original General Plan. The first update since adoption in 1976 focused on the elements of land use, economic development, and circulation. With a primary purpose of bolstering a stable, dynamic, and strong economy, the optional Economic Development Element outlined a series of goals with supporting policies and standards, including the following:

- Goal 3-1: Establish and implement an overall strategy for the economic development of Fowler.
- Goal 3-2: Invest in necessary infrastructure and beautification to ensure success of these strategies.
- Goal 3-3: Support programs and provide resources to strengthen and expand existing business enterprises and new business opportunities.
- Goal 3-4: Actively pursue the attraction of new commercial and industrial businesses by implementing a community marketing program.
- Goal 3-5: Establish a community-based organization for the planning and implementation of economic development.

Central Fowler Revitalization Plan (2007)

In April of 2007, the City conducted a series of public workshops to create a plan to rejuvenate and guide new development for Fowler's central commercial area and immediate surrounding neighborhoods. The geographic area subject to this plan can be seen in **Figure 8-1**. This effort was made possible through a Caltrans Environmental Justice: Context Sensitive Planning Grant received by the City of Fowler in partnership with the Local Government Commission (LGC).

Figure 8-1: Central Fowler Revitalization Plan and Form-Based Code Areas



Primary challenges identified in the resulting plan included wide roadways unsupportive of a central business core; the lack of pedestrian and urban design enhancements which create safety issues and unappealing, disconnected shopping environments; and the deterioration of historical buildings leading to unattractive storefronts and interior spaces that are ill-equipped for retail.

The Central Fowler Revitalization Plan identifies the following design principles meant to prioritize revitalization efforts with the maximum positive impact:

- Maintain a compact, walkable, accessible town center; and
- Provide a well-connected network for bicyclists and pedestrians.

Since plan adoption in 2007, the façades of several downtown storefronts have been restored using Community Development Block Grant (CDBG) funding. In addition, in 2008 a public library was constructed on 7th Street, the first new building since the original library opened in 1910.

Form Based Codes Implementation (2013)

Form based codes are a unique method of land use regulation which offers a more design forward approach than traditional zoning. Form based codes seek to provide a high-quality urban environment by using physical form as the organizing principle of regulation rather than separation of land use, as seen in traditional zoning practice.

In 2013, the City of Fowler amended its zoning ordinance with the addition of Article 17, establishing the City's first form-based code area. The form-based code area is located in the central portion of the City, bound by East Tuolumne Street on the north, South 5TH Street on the east, and South 8th Street on the west. See **Figure 8-1** for a complete overview of the Form Based Code district boundaries in comparison to the Central Fowler Revitalization Plan boundaries. The area was established to foster a vibrant and economically viable town center through a mix of uses with shop fronts and commercial uses at street level, overlooked by canopy shade trees, upper story residences, and offices. This greater emphasis on physical form is intended to produce attractive and enjoyable public spaces complemented with a healthy mix of land uses, including entertainment and retail. The ordinance also regulates components of the streetscape, including installation timelines, street lighting, and ample landscaping requirements.

Fresno County Comprehensive Economic Development Strategy (2016)

The 2016 Fresno County Comprehensive Economic Development Strategy (CEDS)⁴⁸ provides an overview of economic development opportunities within unincorporated Fresno County plus 14 medium and small sized cities within the County. The City of Fresno has completed its own individual CEDS and is not included in this report.

Many of the economic development opportunities presented in this report center around the Central Valley's agricultural base. Opportunity areas for the County at large include water conservation technology, alternative energy, high value specialty crops, ag manufacturing, and agricultural tourism. Additional

⁴⁸ Prepared by the Fresno Economic Development Corporation.

growth areas may include the health care industry, High Speed Rail, and the expansion of a Career Technical Education system.

While the report is regional in scope, it also identifies economic development goals and strategic priorities for each city discussed in the report. Priorities were developed through information collected from general plans, prior studies, stakeholder interviews, and exchanges with city staff. The CEDS reports that the City of Fowler's primary economic drivers include manufacturing establishments, wholesale trade, transportation and warehousing, and retail trade. The CEDS also identifies possible targets for business expansion and attraction including:

- Large employers that do not require high water consumption,
- Agricultural packing and packaging companies,
- Manufacturing and assembly,
- Metal fabricators, and
- Health care and services.

The CEDS report also summarized population growth trends in relation to job growth, reporting that between 2010 and 2014, the South County, which includes the Cities of Fowler, Selma, and Kingsburg, experienced five percent of the County's population growth. The report also states indicates that this growth may not be translating into more jobs for the region. Despite its five percent population growth, the South County captured only 1.8 percent of the increase in jobs overall, indicating that the area is becoming an attractive residential location for commuters who find work outside of the community.⁴⁹

EXISTING RESOURCES

Organizations

Fowler Chamber of Commerce

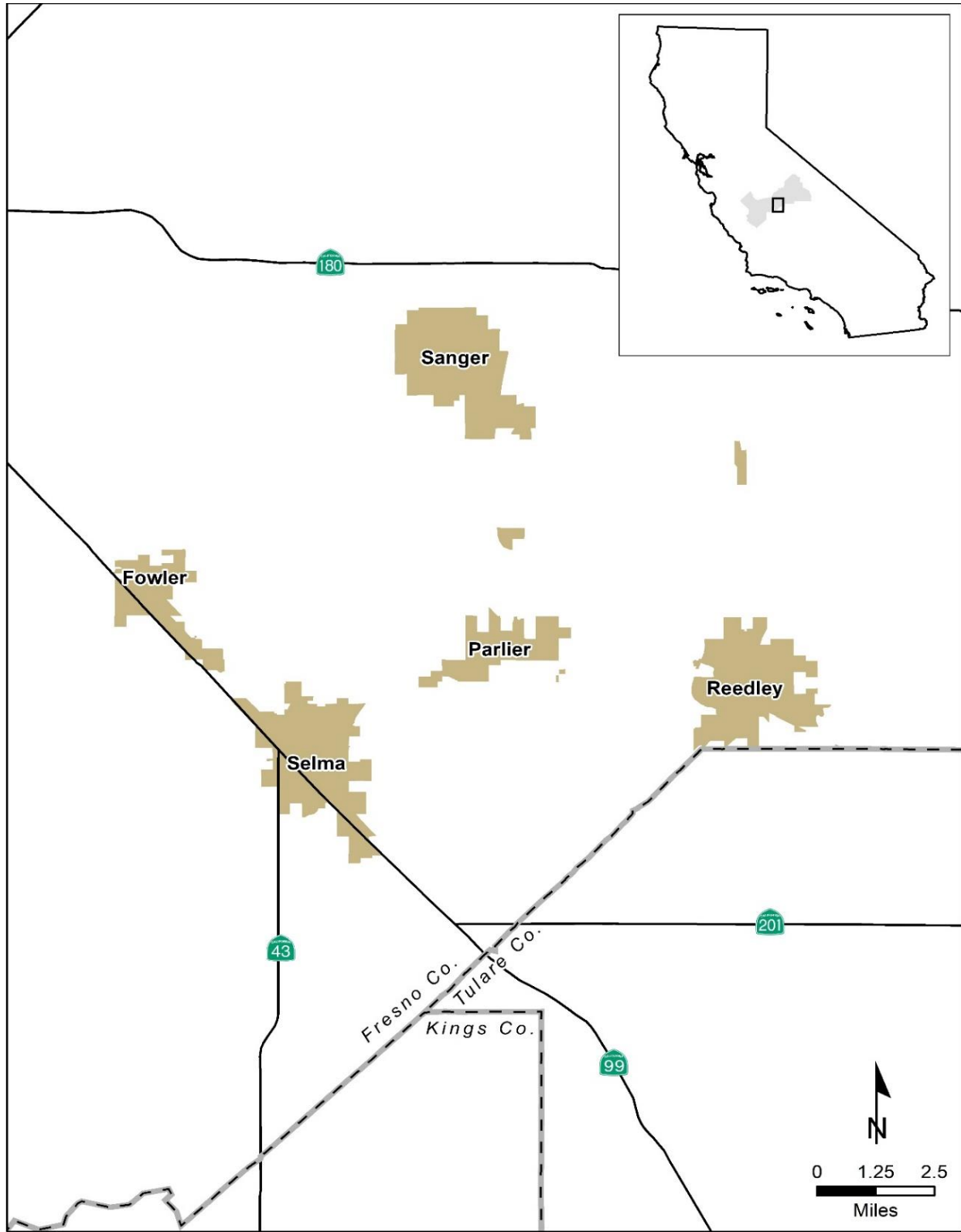
Fowler's Chamber of Commerce is in its infancy, having reformed in 2018 after disbanding several years ago. Since reestablishment, the Chamber has seen little growth and is currently rebuilding resources and services.

5-Cities Joint Powers Economic Development Authority

The 5-Cities Joint Powers Economic Development Authority (Authority) was originally formed through a Joint Powers Agreement involving the Cities of Fowler, Parlier, Reedley, Sanger, and Selma. In 2004, the County of Fresno was added as a member agency, followed by the City of Kingsburg in December 2006 and the City of Orange Cove in September 2010. The geographic area covered by member agencies can be seen in **Figure 8-2**.

⁴⁹ (Fresno County Comprehensive Economic Development Strategy 2016, 2016, p. 34)

Figure 8-2: 5-Cities Joint Powers Economic Development Authority



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The purpose of the Authority is to provide staff resources, personnel, and expertise to assist member agencies to develop economic development resources, establish cooperative relationships to pursue legislation, seek funding, allocate resources, and implement regional programs for the benefit of the citizens and economies of the member agencies.

Fresno Economic Development Corporation

The Fresno Economic Development Corporation (EDC) was founded in 1981 as a public/private nonprofit organization with the primary purpose of marketing Fresno County to attract businesses to the region. The Fresno EDC also facilitates site selection for new business and assists in retention and expansion of existing businesses within the region.

Funding Sources

Community Development Block Grant Program

The Community Development Block Grant (CDBG) program provides annual federal funding to communities for a wide range of community development needs. CDBG has been in effect since 1974 and is currently one of the longest running Housing and Urban Development (HUD) programs, providing funding to more than 1,200 units of State and local governments.

In 2018, Fowler was awarded approximately \$50,000 through a Fresno County CDBG program. This grant provided funding for downtown building façade revitalization. Façade restoration is one of the economic development policies outlined in the 2025 General Plan for commercial land uses within the City of Fowler, as well as one of the recommendations of the 2007 Central Fowler Revitalization Plan.

ECONOMIC DEMOGRAPHICS

The following demographic data was gathered primarily through the American Community Survey (ACS) provided by the United State Census Bureau. The ACS is published annually and estimates population and economic demographics in five-year intervals. The survey estimates economic conditions such as workforce, income, industry, and occupation characteristics. At the time of publication, the most current five-year estimate available detailed the period from 2013 to 2017. The ACS is considered a vital tool to assist local officials, community leaders, and businesses to understand changes taking place in their communities.

Workforce Composition

The economic health of an area largely depends on the composition of its labor force. In part, major employers decide where to locate based on the availability of the workers that can meet their needs. According to the ACS 2015-2019 data, Fowler has a total population of 6,527,⁵⁰ with a labor force of 2,730 people.⁵¹ Between the years of 2015-2019, 56.1 percent of the population 16 and older were employed,

⁵⁰ For the purposes of this chapter, U.S. Census Bureau American Community Survey 5-year estimates were utilized in order to provide consistency with ACS employment statistics. Other chapters within this report may utilize other data sources for population statistics, including the Department of Finance.

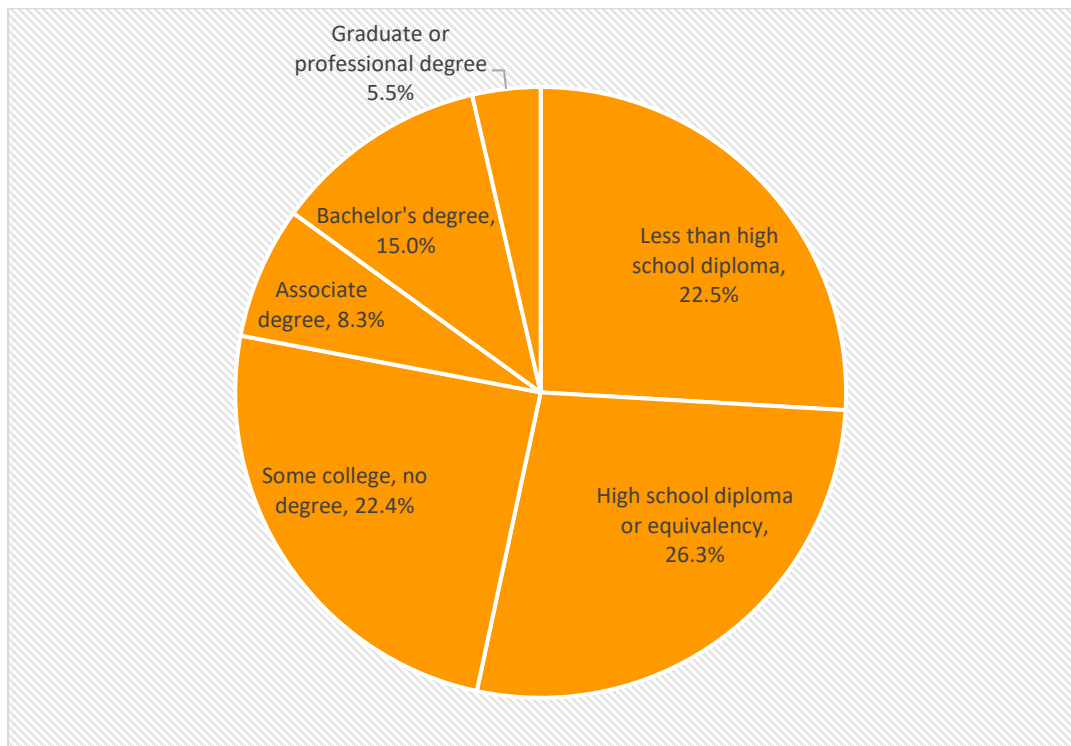
⁵¹ Individuals contributing to the labor force include residents aged 16 years and older.

while 40.3 percent of that demographic were not part of the labor force. At the time of the survey, the unemployment rate was estimated at 3.6 percent.⁵²

Educational Attainment

The employment opportunities and industries in a region are often a function of the educational attainment of its workforce, in combination with other economic factors. Fowler has a population whose primary educational attainment is that of a high school diploma or equivalency. This category accounts for 26.3 percent of the population aged 25 years and older. 22.5 percent of the population has less than a high school diploma and 15.0 and 5.5 percent of residents have obtained a bachelor's degree or graduate/professional degree, respectively. 22.4 percent of the population aged 25 or older had attended some college, but did not obtain a degree, while 8.3 percent had obtained an associate degree.

Figure 8-3: Educational Attainment for Residents 25 years and Older

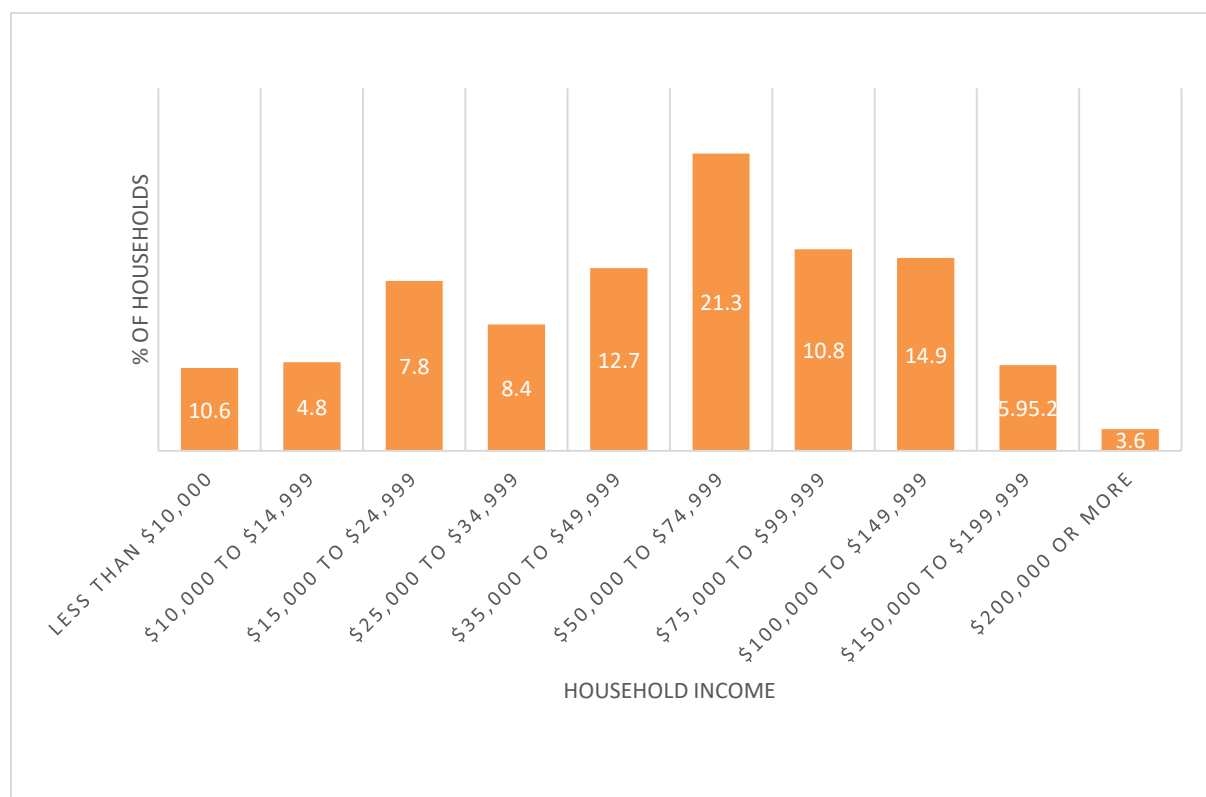


⁵² (United States Census Bureau, 2019)

INCOME AND HOUSING CHARACTERISTICS

Fowler's estimated median household income as of 2019 was \$57,676 which increased from \$35,280 in the year 2000.⁵³ The City's median income is low compared to the State of California which was reported at \$75,235,⁵⁴ and high compared to the County of Fresno reported at \$53,969. In addition, Fowler's average home price is among the highest in Fresno County, at \$253,300. Home prices in Fowler increased 4.71% from 2018 to 2019.⁵⁵

Figure 8-4: Household Income (2015-2019 estimates)



Industry and Occupation Characteristics

Private wage and salary workers make up the bulk of employed residents within the City, estimated at roughly 74.6 percent of all employed residents, or approximately 2,036 workers. Self-employment accounted for only 4.4 percent, or 120 workers. Federal, state, or local government workers comprise 21.0 percent of the overall employed labor force, amounting to 574 workers. The top three industries providing employment to the workforce in Fowler include:

- Education, health care and social assistance services
- Retail trade

⁵³ (United States Census Bureau, 2019)

⁵⁴ (United States Census Bureau, 2019)

⁵⁵ (Data USA, 2019)

- Agricultural, forestry, fishing and hunting, and mining⁵⁶

The top three occupations held by Fowler residents include:

- Management, business, sciences, and arts (28.4%)
- Sales and office occupations(24.1%)
- Production, transportation, and material moving occupations (18.4%)⁵⁷

Table 8-1 through **Table 8-3** below provide a breakdown of employment types, industries, and occupations in Fowler according to the U.S. Census Bureau’s American Community Survey estimates.

Table 8-1: Employment Type

Employment by Type of Employer		
Class of Worker	#	%
Private wage and salary workers	2,036	74.6
Federal, state, or local government workers	574	21.0
Self-employed workers in own not incorporated business	120	4.4

Table 8-2: Employment by Industry

Employment Percentage by Industry	
Industry Type	%
Education, health care, and social assistance	26.2
Retail trade	17.3
Agriculture, forestry, fishing and hunting, mining	9.3
Professional, scientific, management, administrative, and waste management services	8.7
Public administration	6.9
Arts, entertainment, and recreation, accommodation, and food services	6.7
Manufacturing	6.4
Construction	6.2
Transportation and warehousing, utilities	4.3
Finance and insurance, real estate and rental and leasing	3.1
Other Services, except public administration	2.2
Wholesale trade	1.8
Information	0.9

Table 8-3: Employment by Occupation⁵⁸

Occupation Types (Civilian employed population 16 and Older)		
Occupation	#	%
Management, business, sciences, and arts occupations	774	28.4
Sales and office occupations	658	24.1
Production, transportation, and material moving occupations	501	18.4
Service occupations	448	16.4
Natural resources, construction, and maintenance occupations	349	12.8

⁵⁶ (United States Census Bureau, 2019)

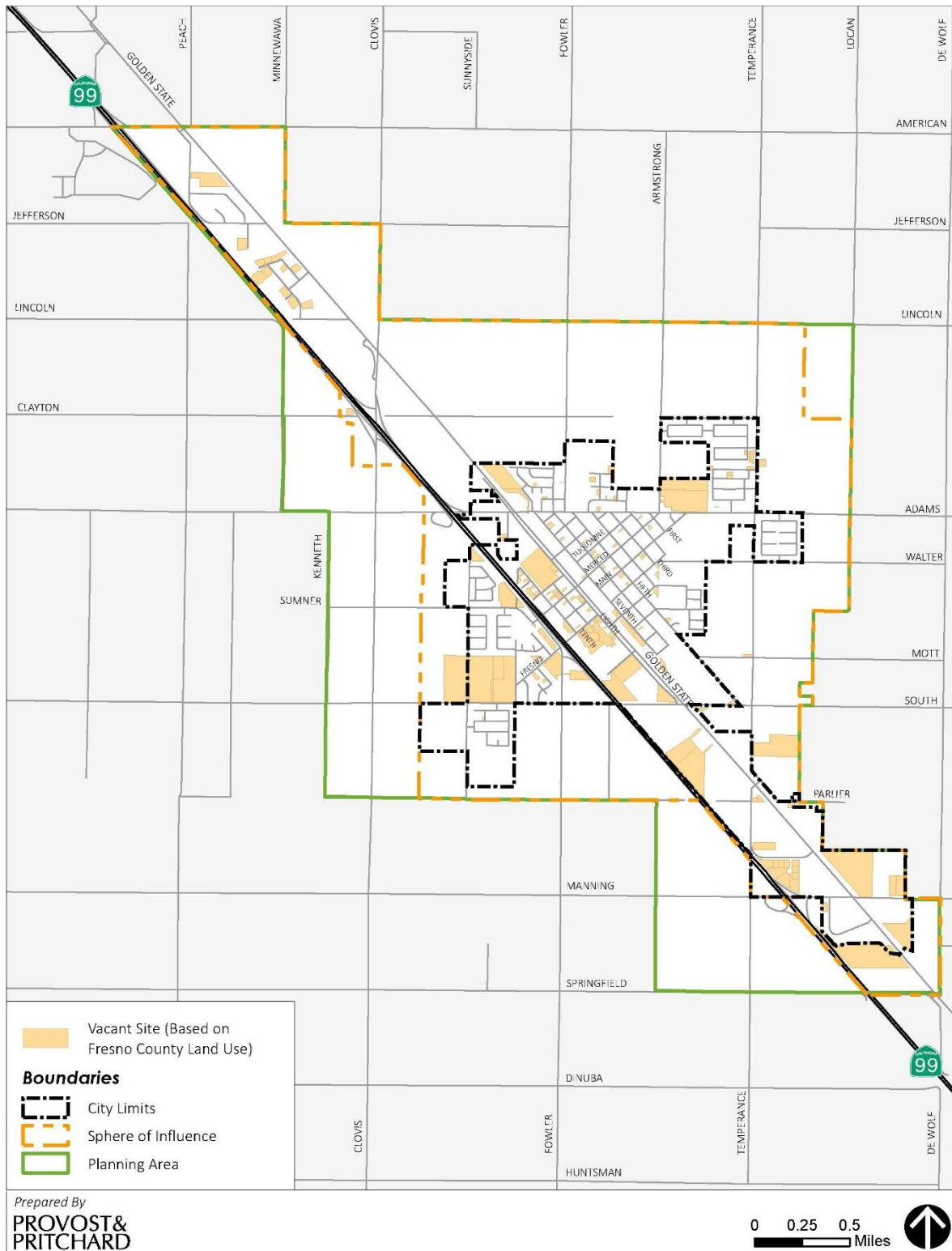
⁵⁷ (United States Census Bureau, 2019)

⁵⁸ Total may not add to 100% due to rounding.

OPPORTUNITY SITES MAPPING

Data utilized in the preparation of vacant and opportunity sites inventories is land use parcel data provided by Fresno County. See **Figure 8-5**.

Figure 8-5: Vacant Opportunity Sites



APPENDIX A SPECIAL STATUS SPECIES

INTRODUCTION

A search of the CNDDDB for published accounts of special status plant and animal species was conducted for the Malaga and Conejo 7.5-minute quadrangles that contain the City of Fowler in its entirety, and for the 10 surrounding quadrangles: Caruthers, Riverdale, Laton, Burris Park, Selma, Sanger, Round Mountain, Clovis, Fresno North, and Fresno South.

According to CNDDDB, there have been no recorded observations of special status species within the planning area; however, the special status plant and animal species list, found in **APPENDIX A** below have recorded observations in the surrounding vicinity.

Table A-1: Special Status Animal and Plant Species Observations in the Vicinity of Fowler

Species	Status
Special Status Animal Species	
tri-colored blackbird (<i>Agelaius tricolor</i>)	CCE, CSC
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CT
northern California legless lizard (<i>Anniella pulchra</i>)	CSC
pallid bat (<i>Antrozous pallidus</i>)	CSC
California glossy snake (Arizona elegans occidentalis)	CSC
burrowing owl (<i>Athene cunicularia</i>)	CSC
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT
Swainson’s hawk (<i>Buteo swainsoni</i>)	CT
western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT, CE
valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	FE, CE
western pond turtle (<i>Emys marmorata</i>)	CSC
western mastiff bat (<i>Eumops perotis californicus</i>)	CSC
vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE
coast horned lizard (<i>Phrynosoma blainvillii</i>)	CSC
western spadefoot (<i>Spea hammondi</i>)	CSC
American badger (<i>Taxidea taxus</i>)	CSC
Least Bell’s vireo (<i>Vireo bellii pusillus</i>)	FE, CE
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE, CT
Special Status Plant Species	
brittlescale (<i>Atriplex depressa</i>)	CNPS 1B
lesser saltscale (<i>Atriplex minuscula</i>)	CNPS 1B
succulent owl’s-clover (<i>Castilleja campestris</i> var. <i>succulenta</i>)	FT, CE, CNPS 1B
California jewelflower (<i>Caulanthus californicus</i>)	FE, CE, CNPS 1B
spiny-sepaled button-celery (<i>Eryngium spinosepalum</i>)	CNPS 1B
California satintail (<i>Imperata brevifolia</i>)	CNPS 2B
forked hare-leaf (<i>Lagophylla dichotoma</i>)	CNPS 1B
Panoche pepper-grass (<i>Lepidium jaredii</i> ssp. <i>album</i>)	CNPS 1B
Madera leptosiphon (<i>Leptosiphon serrulatus</i>)	CNPS 1B
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	FT, CE, CNPS 1B
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CNPS 1B
California alkali grass (<i>Puccinellia simplex</i>)	CNPS 1B
Sanford’s arrowhead (<i>Sagittaria sanfordii</i>)	CNPS 1B
caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>)	CNPS 1B
Greene’s tuctoria (<i>Tuctoria greenei</i>)	FE, CR, CNPS 1B

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CCT	California Threatened (Candidate)
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
FC	Federal Candidate	CSC	California Species of Special Concern
CWL	California Watch List		
CCE	California Endangered (Candidate)		
CR	California Rare		

CNPS Listing

1A	Plants Presumed Extinct in California	2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
1B	Plants Rare, Threatened, or Endangered in California and elsewhere		

APPENDIX B CALIFORNIA AIR RESOURCES BOARD (CARB) AIR QUALITY ATTAINMENT STANDARDS

INTRODUCTION

Local air districts use air quality plans, or attainment plans, to bring the applicable air basin into attainment with all State and Federal ambient air quality standards, which are designed to protect the health and safety of residents within that air basin.

Table B-1 below provides detailed air quality standards and current measurements for the San Joaquin Valley.

Table B-1: Ambient Air Quality Standards and Attainment Designation

Ambient Air Quality Standards & Attainment Designation					
Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM ₁₀)	AAM ⁵⁹	20 µg/m ³	Nonattainment	–	Attainment
	24-hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Nonattainment	12 µg/m ³	Nonattainment
	24-hour	No Standard		35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO ₂)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	

⁵⁹ Annual Arithmetic Mean

Ambient Air Quality Standards & Attainment Designation					
Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m ³	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m ³	
Sulfates (SO ₄)	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide (H ₂ S)	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride (C ₂ H ₃ Cl)	24-hour	0.01 ppm (26 µg/m ³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

Source: California Air Resources Board (CARB)

APPENDIX C CONTAMINATED SITES CLEANUP STATUS

INTRODUCTION

The Hazardous Waste and Substances Sites (Cortese) List is a planning document that provides information about the location of hazardous materials release sites. Government Code (GC) Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010). A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on January 2, 2019 determined that there are four known open contaminated sites within the planning area. Below is a detailed summary of each site's cleanup status.

Marshall Elementary School (60002638)

Fowler Unified School District is interested in developing a three-acre site adjacent to existing Marshall Elementary School facilities to accommodate future growth. The site has historically been used for agriculture, and there are concerns regarding potential soil contamination by pesticides.

PG&E Manufactured Gas Plant SQ-FK-FOW (10490099)

This site was home to an operational PG&E gas plant from 1914 until 1930, at which time the plant was dismantled. Concerns at this site include high probability of contamination due to polynuclear aromatic hydrocarbons (PAHs).

Wright Oil (T10000011242)

During a site assessment related to a former leaky underground storage tank (UST), analytical results indicated that total petroleum hydrocarbons as diesel (TPHd) from additional leaking aboveground storage tanks (ASTs) was present from the surface of the ground to a depth of at least 40 feet. SWRCB has been requesting an investigation of the soil and groundwater beneath the affected property and subsequent cleanup since the contamination was discovered in 2014.

Fowler City Landfill (L10004199996)

This site was historically used for waste disposal prior to the regulations set forth in Title 27 of the CCR. The cleanup status of this site is listed as "Open as of January 1, 1965."

APPENDIX D NOISE REGULATIONS

INTRODUCTION

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound.

The State of California and the City of Fowler both set guidelines for the compatibility of land uses with various noise levels. Below is a full review of state and local regulations pertaining to noise.

NOISE GUIDELINES

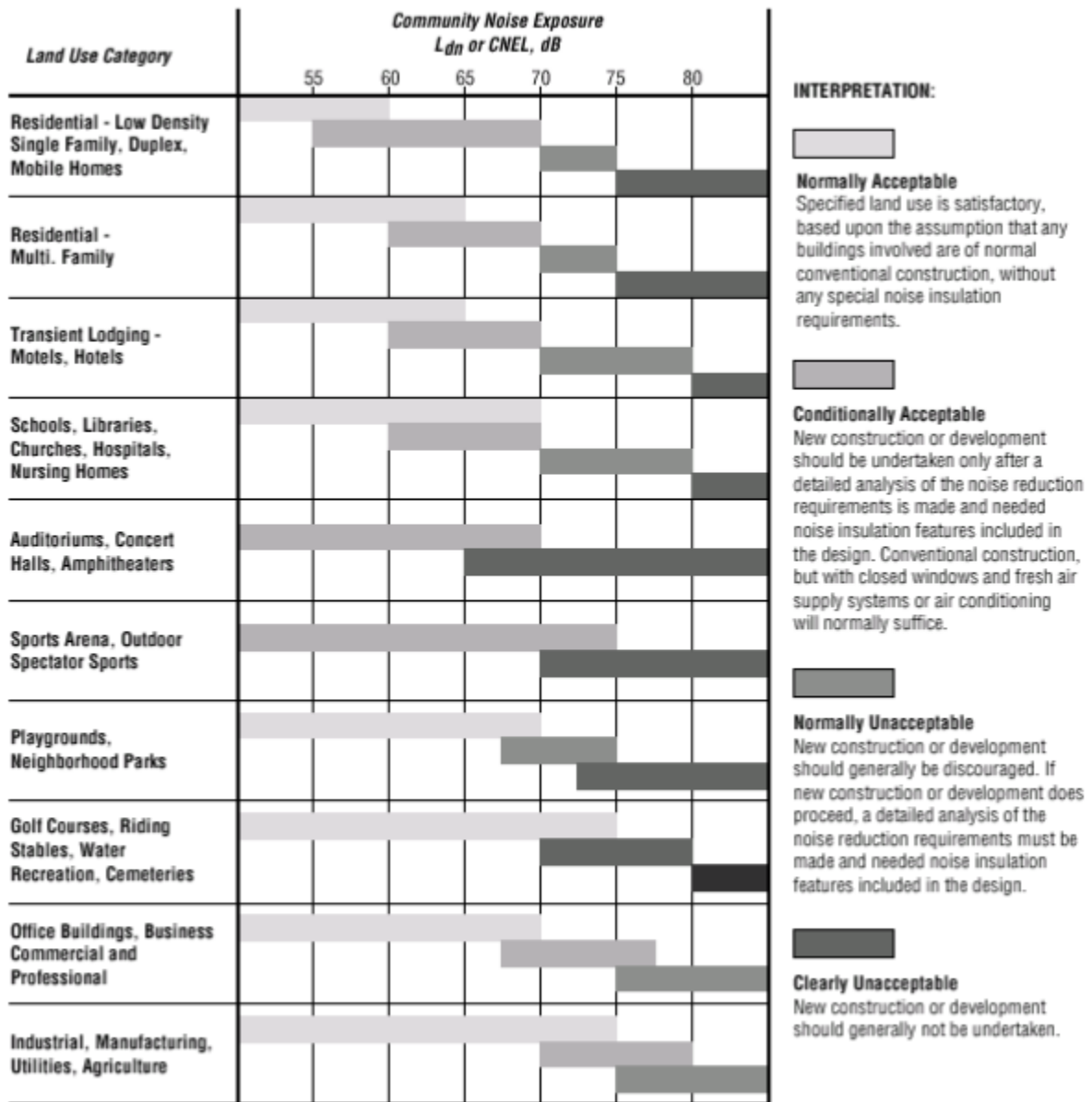
The State of California and the City of Fowler both set guidelines for the compatibility of land uses with various noise levels.

STATE GUIDELINES

The Governor's Office of Planning and Research provides guidelines to be used in the development of a Noise Element. These guidelines include a sound level/land use compatibility chart, shown in Table 11-2, that divides outdoor Ldn ranges into four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable and clearly unacceptable) based on land use. For many land uses, the chart shows overlapping Ldn ranges for two or more categories. These overlapping Ldn ranges are intended to indicate that local conditions (i.e., existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

The compatibility chart in **Figure D-1** identifies the normally acceptable range for low-density residential uses as less than 60 dB and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 60–70 dB are considered conditionally acceptable. For office and commercial land uses, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 67.5–77.5 are categorized as conditionally acceptable.

Figure D-1: State Land Use Compatibility Standards for Community Noise



CITY OF FOWLER GUIDELINES

City of Fowler General Plan

The City's current General Plan has two policies of particular importance to the siting of new development in regard to noise levels:

Goal 5-3: Provide designated routes and loading standards that reduce the noise and safety concerns associated with truck traffic.

Policies and Standards:

1. Designate truck routes for use by heavy commercial and industrial traffic (reference Figure 5-2).
 - a) Designated truck routes shall be:
 - Golden State Boulevard
 - Manning Avenue
 - 5th Street (south of Fresno)
 - 7th Street
 - 8th Street
 - South Temperance Avenue
 - Adams Avenue (west of 7th)
2. Design interior collector street systems for commercial and industrial subdivisions to accommodate the movement of heavy trucks.
3. Restrict heavy duty truck through-traffic in residential areas and plan land uses so that trucks do not need to traverse these areas.
4. Design off-street loading facilities so that they do not face surrounding roads or residential neighborhoods. Truck backing and maneuvering to access loading areas shall not be permitted on the public road system, except when specifically permitted.

Goal 5-6: Provide landscaping to improve the aesthetics of transportation system routes.

Policies and Standards:

1. Encourage Caltrans to install and maintain landscaping and other mitigation elements along SR 99 especially adjacent to residential or other noise sensitive uses.

Goal 5-7: Provide access (driveways, local streets, and private roads) to the City's street and highway system to reduce conflicts that can result from pedestrian traffic and motorized traffic.

Policies and Standards:

2. Require that the automobile and truck access of commercial and industrial land uses abutting residential parcels be located at the maximum practical distance from the nearest residential parcels to minimize noise impacts.

Goal 5-13: Design, construct, and operate the transportation system in a manner that maintains a high level of environmental quality.

Policies and Standards:

2. Protect City residents from transportation generated noise. Increased setbacks, walls, landscaped berms, other sound-absorbing barriers, or a combination thereof shall be provided along major roadways where appropriate in order to protect adjacent noise-sensitive land uses from traffic-generated noise impacts. Additionally, noise generators such as commercial or industrial activities shall use these techniques to mitigate exterior noise levels .

5. Include noise mitigation measures in the design of new roadway projects.

4.6 Industrial Land Use

3. Ensure that industrial development creates no significant off-site impacts concerning access and circulation, noise, dust, odors, visual features, and hazardous materials that cannot be adequately mitigated.

4.. Development standards between industrial properties and residential uses shall be as follows:

b) Roof-mounted and detached mechanical equipment shall be acoustically baffled to prevent equipment noise from exceeding 55 dBA measured at the nearest residential property line.

City of Fowler Noise Ordinance

5-21.601 - Unlawful Noise.

It is unlawful for any person to make, continue or cause to be made or continued any loud, unnecessary or unusual noise or any noise which either annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of others.

The following acts are declared to be loud, disturbing and unnecessary noises in violation of the provisions of this section, and shall be considered a nuisance, but the enumeration shall not be deemed to be exclusive:

(a) Horns, Signaling Devices. The sounding of any horn or warning device on any automobile, motorcycle or other vehicle except as a danger warning and for no longer than is reasonably necessary.

(b) Amplifiers, Stereos, and Musical Instruments. The using, operating, or permitting to be placed, used or operated amplifiers, televisions, stereos, musical instruments, or other machine or device for the producing or reproducing of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants. The operation of any such device in the following manner shall be prima facie evidence of a violation of this section:

(1) On any Sunday through Thursday, except as provided for in subsection (b)(2) of this section, between the hours of 10:00 p.m. and 9:00 a.m. the following day, in such a manner as to be plainly audible beyond the property line, or at a distance of fifty (50) feet from the vehicle, in which it is located.

(2) On any Friday or Saturday, and on the day before and the day of an officially recognized City holiday, between the hours of 11:00 p.m. and 9:00 a.m. the following day, in such a manner as to be plainly audible beyond the property line, or at a distance of fifty (50) feet from the vehicle, in which it is located.

(c) Animals. The keeping of any animal, which by causing frequent or long continued noise, shall disturb the comfort or repose of any persons in the vicinity.

(d) Construction. The erection (including excavating), demolition, alteration or repair of any building other than between the hours of 7:00 a.m. and 8:00 p.m., except by special permit issued by the City Manager, Building Official, or City Engineer upon a determination that the public health and safety will not be impaired thereby. Nothing in this section shall be deemed to alter construction hours beyond those set forth in the conditions of approval for a development project.

(e) Machinery. Operation of any machinery or appliances between the hours of 8:00 p.m. and 7:00 a.m., which is attended by loud or unusual noise and in such a manner as to be plainly audible beyond the property line, or at a distance of fifty (50) feet from the vehicle, in which it is located.