3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on geology and soils if it will:

- 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;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction; or
    - 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;
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: General Plan implementation has the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides (Less than Significant)

There are no active faults that have been mapped within the Planning Area. However, there are some faults located in the region, such as Corning Fault and Stony Creek Fault, both of which are considered potentially active faults. Known faults in the region are illustrated in Figure 3.6-1. In addition, the Planning Area is not within an Alquist-Priolo Special Study Zone. The nearest Alquist-Priolo fault zone, the Bartlett Springs, is located approximately 40 miles southwest of Willows. While there are known active faults mapped within the region, the area could experience considerable ground shaking generated by faults within the Planning Area. For example, Willows could experience an intensity of MM VII generated by seismic events occurring in the region. The effect of this intensity level could destroy some building, foundations, and bridges. As a result, future

development in the City of Willows may expose people or structures to potential adverse effects associated with a seismic event, including strong ground shaking and seismic-related ground failure.

Additionally, as noted previously, the State Seismic Hazards Mapping Act (1990) addresses hazards along active faults. No seismic hazard zones are currently mapped in Willows. Soil data from the NRCS Web Soil Survey (NRCS 2019) suggests that the potential for liquefaction ranges from low to high within the Planning Area given that many soils are high in sand and the water table is moderately high. The Planning Area is essentially flat; therefore, the potential for a landslide is generally low.

All projects would be required to comply with the provisions of the California Building Standards Code (CBSC), which requires development projects to: perform geotechnical investigations in accordance with State law, engineer improvements to address potential seismic and ground failure issues, and use earthquake-resistant construction techniques to address potential earthquake loads when constructing buildings and improvements. As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the CBSC, General Plan, Zoning Ordinance, and other regulations. Subsequent development and infrastructure would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. In addition to the requirements associated with the CBSC and the Municipal Code, the General Plan includes policies and actions to address potential impacts associated with seismic activity.

The General Plan policies and actions listed below require review of development proposals to ensure compliance with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind. All development and construction proposals must be reviewed by the City to ensure that all new development and construction is in conformance with applicable building standards related to geologic and seismic safety. All future projects are subject to CEQA review to address seismic safety issues and provide site specific mitigation for existing and potential hazards identified. With the implementation of the policies and actions in the General Plan, as well as applicable State and City codes, potential impacts associated with a seismic event, including rupture of an earthquake fault, seismic ground shaking, liquefaction, and landslides would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

SAFETY ELEMENT POLICIES

Policy SA 1-1: Require development to reduce risks to life and property associated with earthquakes, liquefaction, erosion, landslides, and unstable soil conditions.

Policy SA 1-2: Ensure that all new development and construction is in conformance with all applicable building standards related to geologic and seismic safety.

Policy SA 1-3: Require geotechnical investigations to be completed prior to approval of any public safety or other critical facilities, in order to ensure that these facilities are constructed in a way that mitigates site-specific seismic and/or geologic hazards.

Policy SA 1-4: Development in areas subject to unstable soil and/or geologic conditions shall be reviewed by qualified engineers and or geologists prior to development in order to ensure the safety and stability of all new construction.

Policy SA 1-5: Require an erosion and sediment control plan prepared by a civil engineer, or other professional who is qualified to prepare such a plan, as part of any grading permit application for new development. The erosion and sediment control plan shall delineate measures to appropriately and effectively minimize soil erosion and sedimentation.

Policy SA 1-6: Prevent land subsidence and maintain adequate groundwater supplies.

Policy SA 1-7: Control erosion and prevent sedimentation or damage to off-site properties.

ACTIONS

Action SA 1a: Require adherence to the requirements of the California Code of Regulations (CCR), Title 24 during the plan check review process.

Action SA 1b: Periodically review the structural integrity of all existing City-owned critical facilities and, if any facilities are found unsatisfactory, take steps to ensure structural integrity and safety.

Action SA 1c: Continue to maintain and provide an inventory of all natural hazards, including active faults, Alquist-Priolo Special Study Zones, floodplains, hazardous soil conditions, and dam failure inundation areas.

Action SA 1d: Require the submission of geologic and soils reports for all new developments. The geologic risk areas that are determined from these studies shall have standards established and recommendations shall be incorporated into development.

Action SA 1e: Monitor withdrawal of groundwater, oil, and gas, maintain land elevation records, and regulate overdraft to prevent subsidence.

Action SA 1f: As part of any tentative map, review preliminary grading plans, and ensure they are designed to control erosion and prevent sedimentation or damage to off-site property erosion.

Impact 3.6-2: General Plan implementation has the potential to result in substantial soil erosion or the loss of topsoil (Less than Significant)

The General Plan would allow development and improvement projects that would involve some land clearing, grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of a substantial amount of nonrenewable topsoil and could adversely affect water quality in nearby surface waters.

As noted previously, because the majority of the city limits contains existing urban uses, the erosion potential is considered to be low. Limited development could occur within the SOI areas. As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the CBSC, General Plan, Zoning Ordinance, and other regulations. In addition

to compliance with City standards and policies, the Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each project that disturbs an area of one acre or larger. The SWPPPs will include project specific best management measures that are designed to control drainage and erosion. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Additionally all development that includes public impairments, or private developments within the ROW or dedicated lands are required to comply with the City of Willows Design and Construction Standards which included requirements for grading and erosion control.

The General Plan includes a range of policies and actions related to best management practices, NPDES requirements, and minimizing discharge of materials (including eroded soils) into the storm drain system. With the implementation of the policies and actions in the General Plan, as well as applicable State and City requirements, potential impacts associated with erosion and loss of topsoil would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in impacts 3.6-1

Impact 3.6-3: General Plan implementation has the potential to result in development 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)

Development allowed under the General Plan could result in the exposure of people and structures to conditions that have the potential for adverse effects associated with ground instability or failure. Soils and geologic conditions in the Willows Planning Area don't have the potential for landslides, lateral spreading, subsidence, or collapse. Soils and geologic conditions in the Willows Planning Area have the potential for liquefaction. Each are discussed below:

Landslide: The Planning Area is essentially flat; therefore, the potential for a landslide is generally low. Figure 3.6-4 illustrates the landslide potential in the vicinity of the Planning Area.

Lateral Spreading: Lateral spreading generally is a phenomenon where blocks of intact, non-liquefied soil move down slope on a liquefied substrate of large areal extent. The potential for lateral spreading is present where open banks and unsupported cut slopes provide a free face (unsupported vertical slope face). Ground shaking, especially when inducing liquefaction, may cause lateral spreading toward unsupported slopes. The Planning Area is essentially flat lateral spreading of soils has not been observed within the Planning Area.

Subsidence: Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Subsidence has not been identified as an issue in the Planning Area.

Liquefaction: Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesion-less soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Soil data from the NRCS Web Soil Survey (NRCS 2019) suggests that the potential for liquefaction may range from low to high within the Planning Area given that many soils are high in sand and the water table is moderately high. Additionally liquefaction areas may also be present along water courses where similar conditions exist. As described in the Glenn County Multi-Jurisdiction Hazard Mitigation Plan damaged caused by liquefaction was experienced within the County during the Cascadia Subduction Zone Earthquakes in 2013.

Collapse: Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures,

sagging floors, and nonfunctional windows and doors. Collapsible soils have not been identified in the Planning Area as an issue. However, in areas subject to potential liquefaction, the potential for liquefaction induced settlement is present.

Conclusion: Unstable geologic units could be present within the Planning Area. As previously noted, development sites in the Planning Area may be at risk for liquefaction. As future development and infrastructure projects are considered by the City of Willows, each project will be evaluated for conformance with the CBSC, 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. Future development and improvement projects would be required to have a specific geotechnical study prepared and incorporated into the improvement design, consistent with the requirements of the State and City codes. In addition to the requirements associated with the CBSC and the Municipal Code, the General Plan includes policies and actions to ensure that development projects address potential geologic hazards, at-risk buildings and infrastructure is evaluated for potential risks, and site-specific studies are completed for area subject to liquefaction. With the implementation of the policies and actions in the General Plan, as well as applicable State and City codes, potential impacts associated with ground instability or failure would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in Impact 3.6-1

Impact 3.6-4: General Plan implementation has the potential to result in development 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 (Less than Significant)

Expansive soil properties can cause substantial damage to building foundations, piles, pavements, underground utilities, and/or other improvements. Structural damage, such as warping and cracking of improvements, and rupture of underground utility lines, may occur if the expansive potential of soils is not considered during the design and construction of all improvements.

Linear extensibility is a method for measuring expansion potential. The expansion potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

According to the NRCS Web Soil Survey, the soils in the Planning Area soils vary from a high shrink-swell potential to a very high shrink-swell potential. Figure 3.6-3 illustrates soils with shrink-swell potential in the Planning Area. The majority of the Planning Area has the potential for expansive soils, including most of the developed land. The southwestern portions of the SOI have low expansive soils. Most of the area within the City's SOI with low expansive soils are located on undeveloped land. The areas with moderate to high expansive soils would require special design considerations due to shrink-swell potentials.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the CBSC, General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The Safety Element of the General Plan establishes policies that are designed to protect from geologic hazards, including expansive soils. Consistency with the General Plan policies will require identification of geologic hazards and risk inventory of existing at-risk buildings and infrastructure. As required by the CBSC, a site-specific geotechnical investigation will identify the potential for damage related to expansive soils and non-uniformly compacted fill and engineered fill. If a risk is identified, design criteria and specification options may include removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill material that is designed to withstand the forces exerted during the expected shrink-swell cycles and settlements.

Design criteria and specifications set forth in the design-level geotechnical investigation will ensure impacts from problematic soils are minimized. There are no additional significant adverse environmental impacts, apart from those disclosed in the relevant chapters of this Draft EIR, that are anticipated to occur associated with expansive soils. Therefore, this impact is considered **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in Impact 3.6-1.

Impact 3.6-5: General Plan implementation does not have the potential to have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water (Less than Significant)

Construction within the city limits allowed by the proposed Plan would not require the use of septic tanks or alternative wastewater disposal systems. Wastewater would be discharged into the existing public sanitary sewer system in the Plan Area. areas outside the City limits to the North are serviced by the Northeast Willows Community Services District (NWCSD) which is also serviced by the Willows WWTP.

Septic systems may be existing and developed within the unincorporated portions of the Planning Area within Glenn County. In Glenn County, septic systems are regulated by the Glenn County Department of Environmental Health.

As described in the Regulatory Setting, new development allowed under the General Plan would be required to comply with City sewer standards including the sewage disposal regulations included in the Willows Municipal Code Title 13 Chapter 13.10.100 that includes the requirements for the use of public sewers.

As discussed in Section 3.15 of this DEIR, adequate system capacity is ensured through implementation and periodic auditing of the Sewer System Management Plan (SSMP), as well as sewer related capital improvement program (CIP) projects and studies. New wastewater generated from urban General Plan land uses will be collected and transmitted via sewer and limited use of septic tanks may be required outside the city limits and within the SOI. As described in the regulatory setting, standards for any septic tanks or alternative waste water disposal systems utilized for development within the planning area would require Glenn County Department of Environmental Health permit and review. Therefore, this impact is considered **less than significant**.

Impact 3.6-6: General Plan implementation has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (Less than Significant)

DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;

2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.
6. All identifiable vertebrate fossils are considered significant due to the rarity of their preservation.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and invertebrate animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important.

There could be fossils of potential scientific significance and other unique geologic features that remain undiscovered or are not recorded. Ground-disturbing construction associated with development allowed under the proposed General Plan could uncover previously unknown resources. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of the proposed General Plan policies and actions would ensure steps would be taken to minimize impacts to paleontological resources in the event that they are discovered during construction and thus, general plan implementation would result in a **less-than-significant** impact relative to this environmental topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

Policy COS 5-1: Review proposed developments and work in conjunction with the California Historical Resources Information System, Northwest Information Center to determine whether project areas contain known archaeological resources, either prehistoric and/or historic-era, or have the potential for such resources.

Policy COS 5-2: If found during construction, ensure that human remains are treated with sensitivity and dignity, and ensure compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98.

Policy COS 5-3: Work with Native American representatives to identify and appropriately address, through avoidance or mitigation, impacts to Native American cultural resources and sacred sites during the development review process.

Policy *COS 5-4: Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18 and AB 52, the City shall consult as necessary with Native American tribes that may be interested in proposed new development projects and land use policy changes.*

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

Action COS 5a: Require a cultural and archaeological survey prior to approval of any project which would require excavation in an area that is sensitive for cultural or archaeological resources, as determined by the California Historical Resources Information System, Northwest Information Center. If significant cultural or archaeological resources, including historic and prehistoric resources, are identified, appropriate measures shall be implemented, such as documentation and conservation, to reduce adverse impacts to the resource.

Adopt an ordinance codifying these requirements into the Willows Municipal Code.

Action COS 5b: Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- *If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the Planning Department shall be notified, the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the Planning Department.*

- *If human remains are discovered during any ground disturbing activity, work shall stop until the Planning Department and the County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when appropriate measures have been taken and approved by the Planning Department.*

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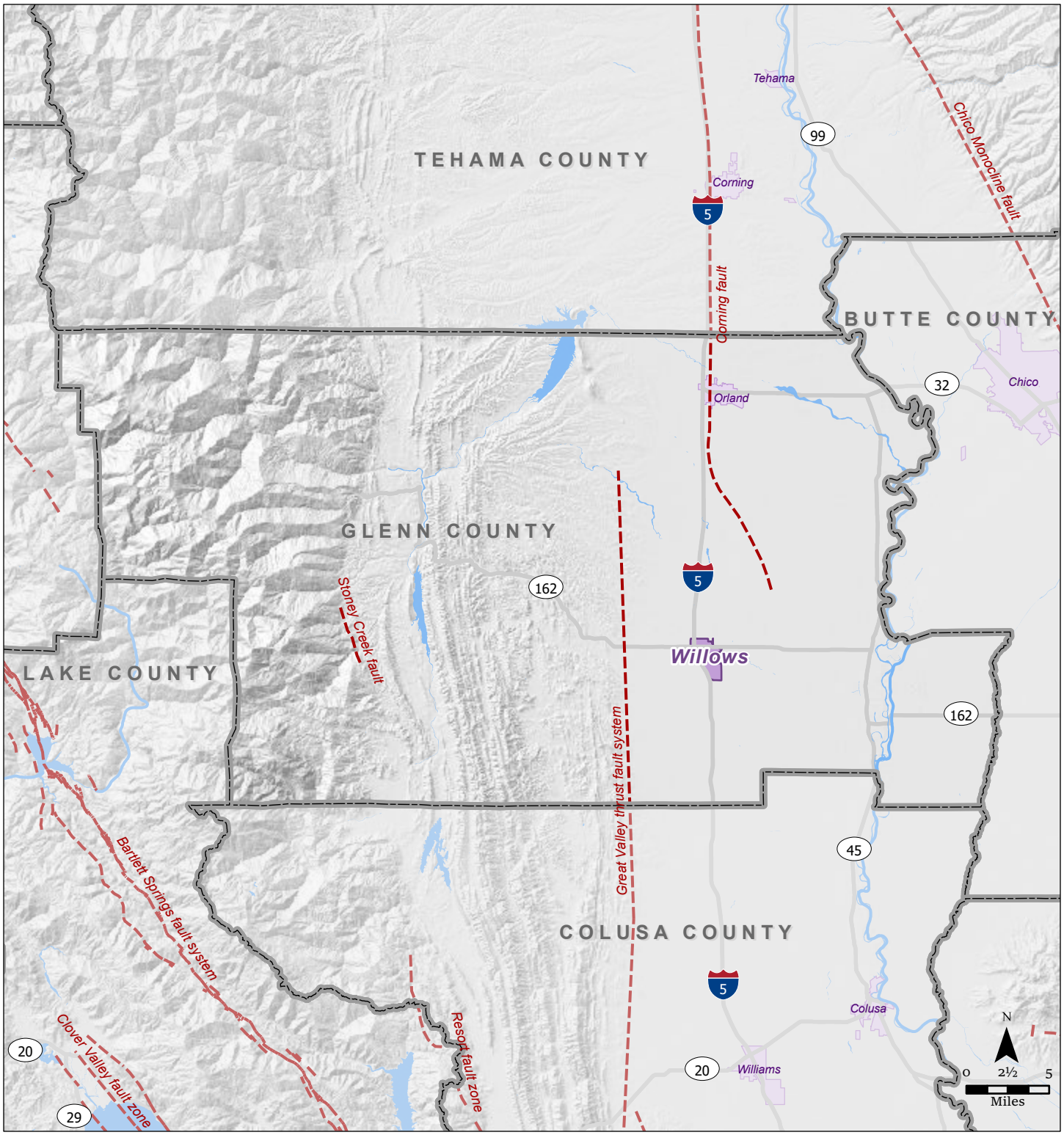

Sources: USGS; California State GeoPortal; Glenn County. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.6-1 LOCAL EARTHQUAKE FAULTS

Legend

- City of Willows
- Other Incorporated Area
- Quaternary Fault

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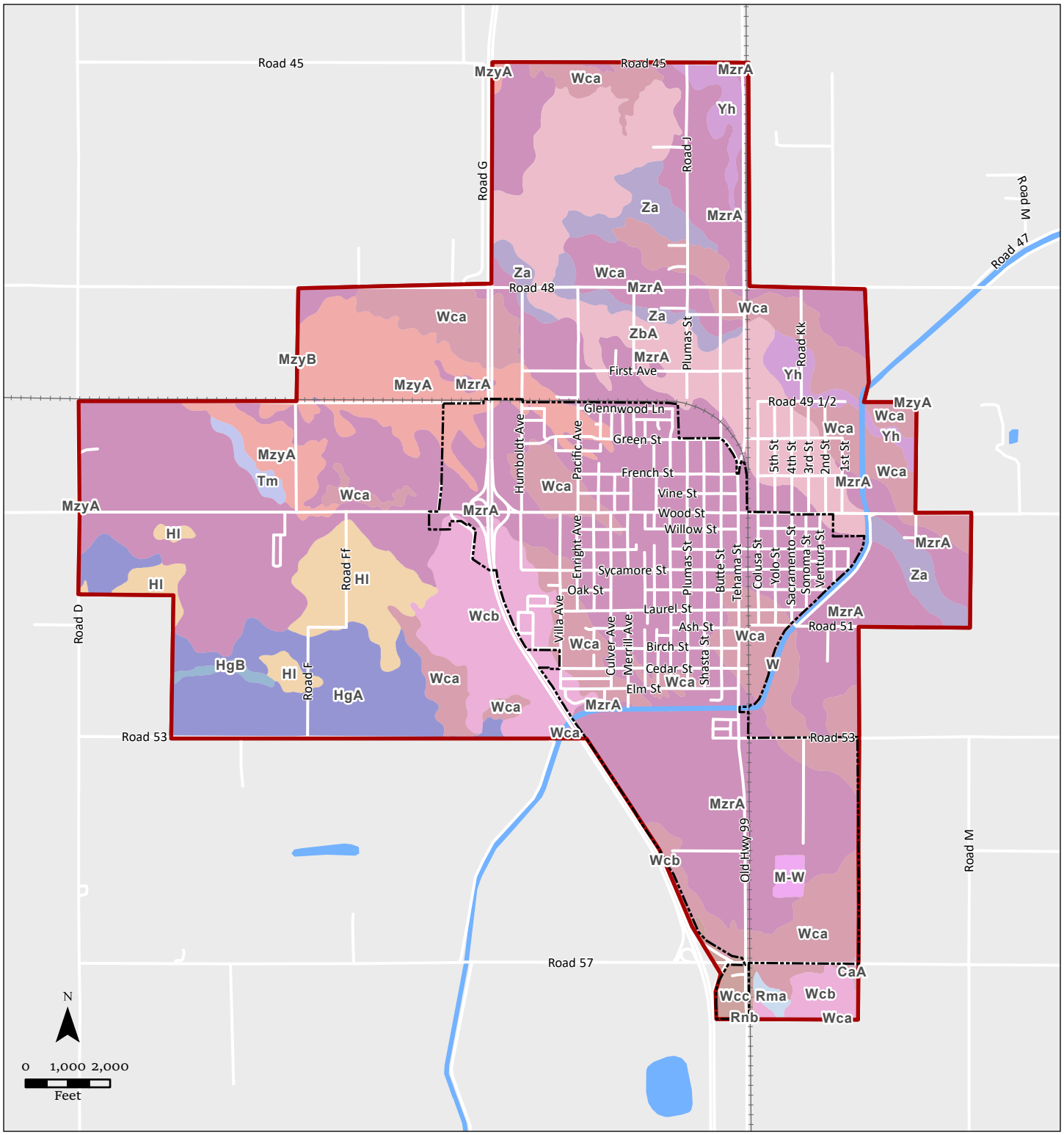

Sources: NRCS Soils Database; Glenn County 2018. Map date: July 4, 2022.

Legend

- City of Willows
- Willows Sphere of Influence

Soil Type

- CaA - Capay clay, 0 to 4 % slopes, MLRA 17
- HI - Hillgate clay loam, 0 to 3 % slopes
- HgA - Hillgate loam, 0 to 2 % slopes, MLRA 17
- HgB - Hillgate loam, 2 to 8 % slopes
- M-W - Miscellaneous water
- MzyA - Myers clay loam, 0 to 3 % slopes
- MzyB - Myers clay loam, 3 to 8 % slopes
- MzrA - Myers clay, 0 to 1 % slopes, MLRA 17
- Rma - Riz silt loam, slightly saline-alkali
- Rnb - Riz silty clay loam, moderately saline-alkali
- Tm - Tehama silt loam, 0 to 3 % slopes, MLRA 17
- W - Water
- Wcb - Willows clay, moderately saline-alkali
- Wca - Willows clay, slightly saline-alkali
- Wcc - Willows clay, strongly saline-alkali
- Yh - Yolo clay loam, shallow over clay
- ZbA - Zamora silty clay loam, 0 to 3 % slopes, MLRA 17
- Za - Zamora silty clay, 0 to 2 % slopes

CITY OF WILLOWS

FIGURE 3.6-2 NRCS SOIL MAP

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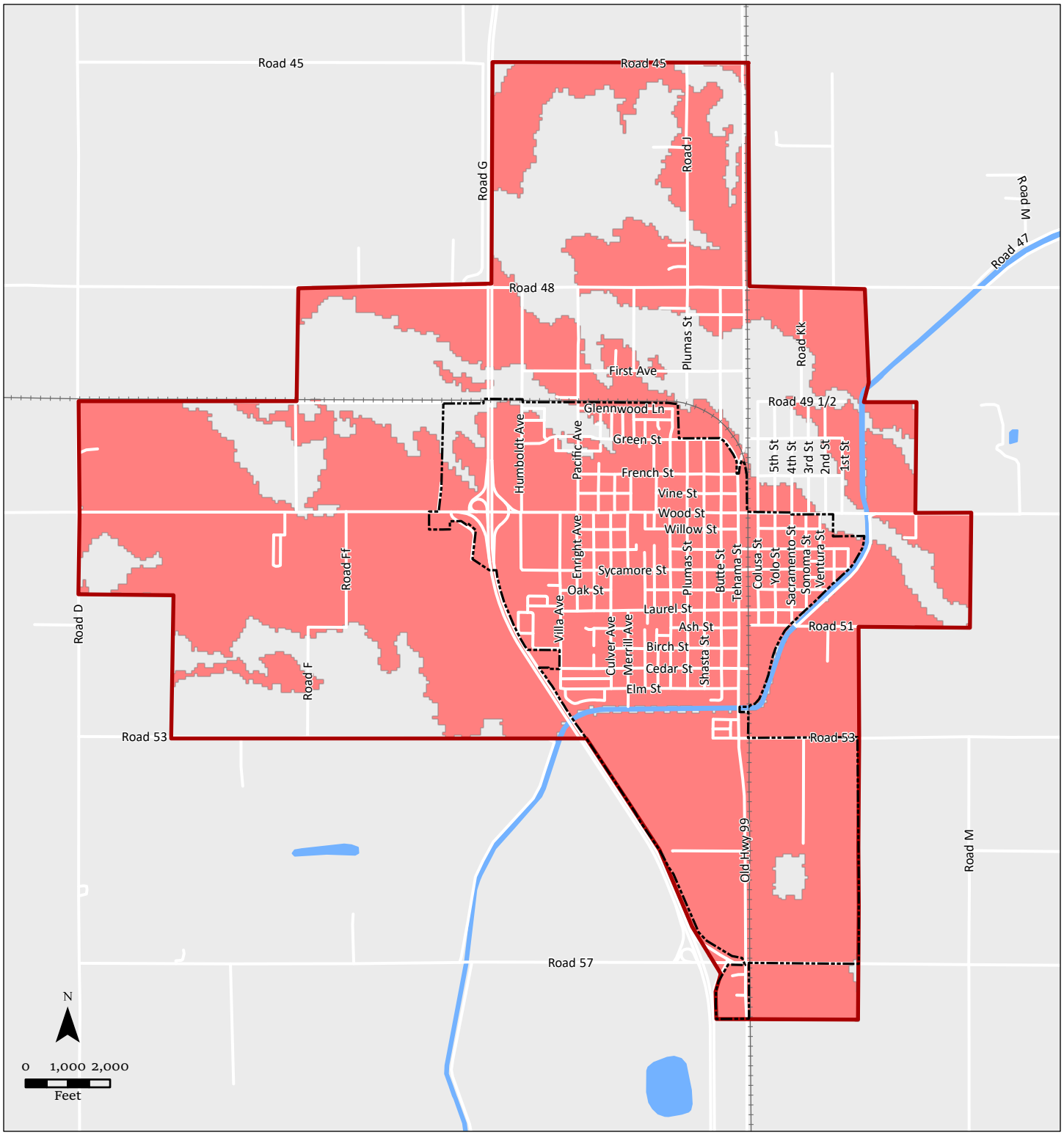

Sources: NRCS Soils Database; Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.6-3 SHRINK-SWELL POTENTIAL OF SOILS

Legend

City of Willows

Willows Sphere of Influence

Shrink-Swell Potential

Potential Shrink-Swell Soils

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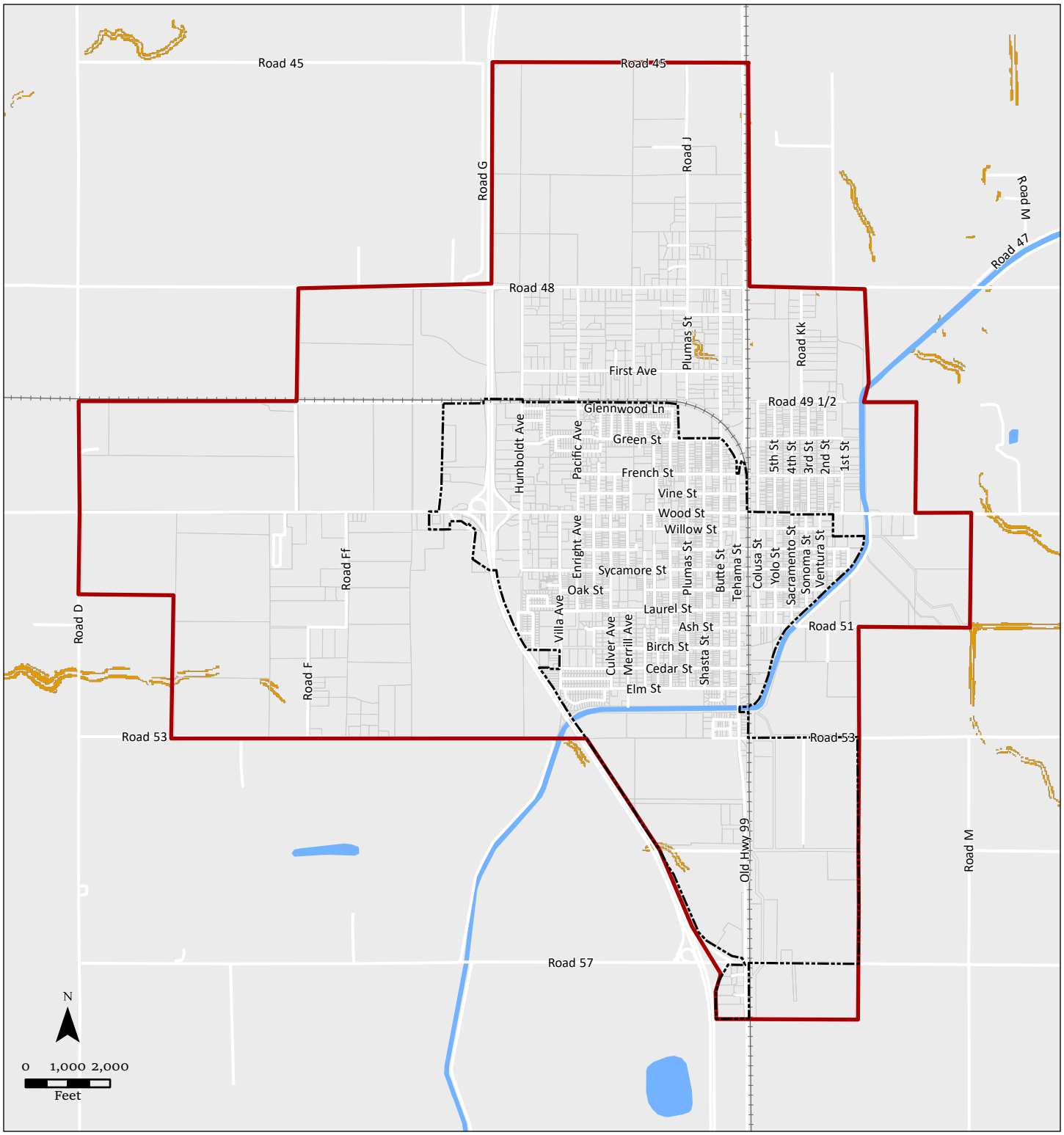

Sources: Department of Conservation, California Geological Survey, 2010; Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

Legend

- City of Willows
- Willows Sphere of Influence

Landslide Susceptiblity Classes

- 0
- III
- V
- VI
- VII
- VIII
- IX
- X

FIGURE 3.6-4 LANDSLIDE SUSCEPTIBILITY

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This section discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from implementation of the General Plan. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change.

This section also provides background discussion on energy use in Willows. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis.

The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the General Plan's consistency with local, regional, statewide, and federal climate change and energy conservation planning efforts and discusses the context of these planning efforts as they relate to the proposed project.

Emissions of GHGs have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change; however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

No comments were received during the NOP comment period pursuant to greenhouse gases, climate change, and/or energy.

3.7.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

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 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.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

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 CO_2, CH_4, O_3, water vapor, N_2O, and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2019b).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 424 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2017 (California Energy Commission, 2019b). To meet the annual statewide targets set by the California Air Resources Board, California emissions need to be below 431 $MMTCO_2e$ by 2020, and to below 260 $MMTCO_2e$ by 2030 (California Air Resources Board, 2017).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2017, accounting for 41% of total GHG emissions in the state. This category was followed by the industrial sector (24%), the electricity generation sector (including both in-state and out of-state sources) (15%), the agriculture and forestry sector (8%), the residential energy consumption sector (7%), and the commercial energy consumption sector (5%) (California Energy Commission, 2019b).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of water supply for the state. The snowpack portion of the supply could potentially decline by 50% to 75% by the end of the 21st century (National Resources Defense Council, 2014). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation

could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (California Environmental Protection Agency, 2010). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands. As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. According to the most recent California Climate Change Assessment (*California's Fourth Climate Change Assessment*) (2019), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Wildfires

In recent years, the area burned by wildfires has increased in parallel with increasing air temperatures. Wildfires have also been occurring at higher elevations in the Sierra Nevada mountains, a trend which is expected to continue under future climate change. Climate change will likely modify the vegetation in California, affecting the characteristics of fires on the land. Land use and development patterns also play an important role in future fire activity. Because of these complexities, projecting future wildfires is complicated, and results depend on the time period for the projection and what interacting factors are included in the analysis. Because wildfires are affected by multiple and sometimes complex drivers, projections of wildfire in future decades in California range from modest changes from historical conditions to relatively large increases in wildfire regimes.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. Climate change poses direct and indirect risks to public health, as people will experience earlier death and worsening illnesses. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions.

Energy Resources

Higher temperatures will increase annual electricity demand for homes, driven mainly by the increased use of air conditioning units. High demand is projected in inland and Southern California, and more moderate increases are projected in cooler coastal areas. However, the increased annual residential energy demand for electricity is expected to be offset by reduced use of natural gas for space heating. Increases in peak hourly demand during the hot months of the year could be more pronounced than changes in annual demand. This is a critical finding for California's electric system, because generating capacity must match peak electricity demand.

Water Supply

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies

on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply.

Current management practices for water supply and flood management in California may need to be revised for a changing climate. This is in part because such practices were designed for historical climatic conditions, which are changing and will continue to change during the rest of this century and beyond. As one example, the reduction in the Sierra Nevada snowpack, which provides natural water storage, will have implications throughout California's water management system. Even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Climate change will make forests more susceptible to extreme wildfires. *California's Fourth Climate Change Assessment* found that by 2100, if greenhouse gas emissions continue to rise, the frequency

of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and that average area burned statewide would increase by 77 percent by the end of the century. In the areas that have the highest fire risk, wildfire insurance is estimated to see costs rise by 18 percent by 2055 and the fraction of property insured would decrease.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Climate change could cause the San Francisco Bay to rise 12 to 24 inches by mid-century and by 36 to 66 inches by end-of -century.[1] This means that today's floods will likely be the future's high tides and areas that currently flood every 10 to 20 years could be inundated more frequently.

Statewide damages could reach nearly $17.9 billion from inundation of residential and commercial buildings under 50 centimeters (~20 inches) of sea-level rise, which is close to the 95th percentile of potential sea-level rise by the middle of this century. A 100-year coastal flood, on top of this level of sea-level rise, would almost double the costs.

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Rising sea levels would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy in California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are the most widely used form of energy in the State. However, renewable sources of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 60 percent by 2030. Additionally, SB 100, which was signed into law in 2018, requires all of the State's electricity to come from carbon-free sources by 2045.

Overall, in 2017, California's per capita energy usage was ranked 48th in the nation (U.S. EIA, 2018). Additionally, California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards,

[1] Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, National Research Council 2012 http://www.nap.edu/catalog/13389/sealevel-rise-for-the-coasts-of-california-oregon-and-washington

vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Other fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2019b). In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2019b). The percentage of renewable resources as a proportion of California's overall energy portfolio is increasing over time, as directed the State's Renewable Portfolio Standard (RPS).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.76 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission, 2019b). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010. Santa Clara County consumed approximately 16,708 GWh in 2018, roughly 0.6% of the state total.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2018, world consumption of oil had reached 100 million barrels per day (U.S. EIA, 2019a). The United States, with approximately five percent of the world's population, accounts for approximately 21 percent of world oil consumption, or approximately 20.5 million barrels per day (U.S. EIA, 2019b). The transportation sector relies heavily on oil. In California, petroleum-based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2018).

Natural Gas

Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as Pacific Gas & Electric Company (PG&E),

then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2018). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2019a). PG&E provides natural gas for residential, industrial, and agency consumers within Santa Clara County, including the City of Willows.

3.7.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: National ambient air quality standards (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 U.S. Environmental Protection Agency (USEPA) is responsible for administering the FCAA. The FCAA requires the USEPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), 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 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 on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the USEPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The 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 USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

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

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU

was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which took effect October 1, 2012.

U.S. Federal Climate Change Policy

According to the USEPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide USEPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established 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.

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 Energy Action Plan 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.

State of California Energy Action Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces VMT and accommodates pedestrian and bicycle access.

Assembly Bill 1493

In response to AB 1493, the CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

The CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The U.S. EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative

Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 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 executive order 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 executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050. EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that the CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

California Air Resources Board Plans and Progress Reports

SCOPING PLAN-IDENTIFIED VMT REDUCTIONS AND RELATIONSHIP TO STATE CLIMATE GOALS

The California Air Resources Board (ARB) provides specific guidance for VMT thresholds in "Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals" (January 2019). This document provides recommendations for VMT reduction thresholds that would be necessary to achieve the state's GHG reduction goals and acknowledges that the SCS targets alone are not sufficient to meet climate goals. ARB concluded that a 14.3-percent reduction in total VMT per capita and a 16.8 percent reduction in light-duty VMT per capita (over current conditions; 2015-2018) was needed to meet these goals. Additionally, the OPR "Technical Advisory" cites this document as support for the 15-percent reduction threshold.

EO S-13-08

EO S-13-08 was issued on November 14, 2008. The EO is intended to hasten California's response to the impacts of global climate change, particularly sea level rise, and directs state agencies to take specified actions to assess and plan for such impacts, including requesting the National Academy of Sciences to prepare a Sea Level Rise Assessment Report, directing the Business, Transportation, and Housing Agency to assess the vulnerability of the State's transportation systems to sea level rise, and requiring the Office of Planning and Research and the Natural Resources Agency to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required State agencies to develop adaptation strategies to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. The adaption strategies report summarizes key climate change impacts to the State for the following areas: public health; ocean and coastal resources; water supply and flood protection; agriculture; forestry; biodiversity and habitat; and transportation and energy infrastructure. The report recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Assembly Bill 32 - Climate Change Scoping Plan

On December 11, 2008, the CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of the CARB's plans to achieve GHG reductions in California required by Assembly Bill (AB) 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce carbon dioxide-equivalent (CO_2e) emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The CARB updated the Scoping Plan in 2013 (*First Update to the Scoping Plan*) and again in 2017 (the *Final Scoping Plan*). The 2013 Update built upon the initial Scoping Plan with new strategies and recommendations, and also set the groundwork to reach the long-term goals set forth by the state. Successful implementation of existing programs (as identified in previous iterations of the Scoping Plan) has put California on track to meet the 2020 target. The 2017 Update expands the scope of

the plan further by focusing on the strategy for achieving the state's 2030 GHG target of 40 percent emissions reductions below 1990 levels (to achieve the target codified into law by SB 32), and substantially advances toward the state's 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The 2017 Update relies on the preexisting programs paired with an extended, more stringent Cap-and-Trade Program, to delivery climate, air quality, and other benefits. The 2017 Update identifies new technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health.

Senate Bill 32

Senate Bill 32, which passed into law in 2016, sets the target of reducing greenhouse gas emissions to 40 percent below the 1990 level by the year 2030. SB 32 extends the original set of greenhouse gas targets provided by the passage of AB 32 (the Global Warmings Solutions Act of 2006). This new target sets an aggressive goalpost, helping the State along its pathway to achieve its longer-term goal of an 80 percent reduction in greenhouse gas emissions by the year 2050.

Senate Bill 743

SB 743, passed into law in 2013, changes the way that public agencies evaluate the transportation impacts of projects under CEQA. The proposed revisions to the State CEQA Guidelines would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHGs. The 2017 Update to the Scoping Plan identified that slower VMT growth from more efficient land use development patterns would promote achievement of the state's climate goals.

As detailed in SB 743, the Governor's Office of Planning and Research (OPR) was tasked with developing potential metrics to measure transportation impacts and replace the use of delay and level of service (LOS). More detail about SB 743 is provided in the setting section of Chapter 3.14, "Traffic and Circulation" of the Draft EIR.

In December 2018, OPR released its final changes to the CEQA Guidelines, including the addition of Section 15064.3 of the CEQA Guidelines that would implement SB 743. In support of these changes, OPR also published its Technical Advisory on Evaluating Transportation Impacts in CEQA, which recommends that the transportation impact of a project be based on whether it would generate a level of vehicle miles traveled (VMT) per capita for residential projects or per employee for employment projects that is 15 percent lower than existing development in the city, county, or region. OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions". It is also consistent with the statewide per capita VMT reduction target developed by Caltrans in its Strategic Management Plan, which calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020. Additionally, the California Air Pollution Control Officers Association (CAPCOA) determined that a 15 percent

reduction in VMT is typically achievable for projects. CARB's First Update to the Climate Change Scoping Plan also called for local governments to set communitywide GHG reduction targets of 15 percent below then-current levels by 2020. Although not required, a lead agency may elect to be governed by the provisions of Section 15064.3 immediately. However, the provisions of Section 15064.3 do not apply statewide until July 1, 2020.

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

In January 2018, EO B-48-18 was signed into law and requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles (ZEVs) on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This Executive Order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan (Governor's Interagency Working Group on Zero-Emission Vehicles 2016) to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential uses through the Low Carbon Fuel Standard Program, and recommend how to ensure affordability and accessibility for all drivers.

Assembly Bill 2076: California Strategy to Reduce Petroleum Dependence

In response to the requirements of Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and the CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Assembly Bill 2188: Solar Permitting Efficiency Act

Assembly Bill (AB) 2188, enacted in California in 2015, required local governments to adopt a solar ordinance by September 30, 2015 that creates a streamlined permitting process that conforms to the bests practices for expeditious and efficient permitting of small residential rooftop solar systems. The act is designed to lower the cost of solar installations in California and further expand the accessibility of solar to more California homeowners. The bulk of the time and cost savings associated with a streamlined permitting process comes from the use of a standardized eligibility checklist and a simplified plan. This bill also shortens the number of days for those seeking Homeowner's Association (HOA) approval for a written denial of a proposed solar installation.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by the CARB pursuant to AB 32.

Senate Bill 97

Senate Bill (SB) 97 (Chapter 185, 2007) required OPR to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Senate Bill (SB) 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

Executive Order B-30-15

On April 29, 2015, Governor Jerry Brown issued Executive Order (EO) B-30-15, which establishes a State GHG reduction target of 40 percent below 1990 levels by 2030. The new emission reduction target provides for a mid-term goal that would help the State to continue on course from reducing GHG emissions to 1990 levels by 2020 (per AB 32) to the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050 (per EO S-03-05). This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions. EO B-30-15 also addresses the need for climate adaptation and directs State government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the State climate adaptation strategy, to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by climate change;
- Factor climate change into State agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

SB 100- Renewables Portfolio Standard Program

Under the policy, California's renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers and 100 percent of electricity procured to serve state agencies by December 31, 2045. The policy requires the transition to a zero-carbon electric system does not cause or contribute to increases of greenhouse gas emissions elsewhere in the western electricity grid.

SB 100 requires the CEC, CPUC, and CARB to complete a joint agency report to the Legislature evaluating the 100 percent zero-carbon electricity policy, as described below. The report will be developed using a public process and qualitative and quantitative analyses to address the requirements and intent of the statute.

Advanced Clean Cars Program

In January 2012, the 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 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 program will have significant energy demand implications as battery, fuel cell, and/or plug-in hybrid electric vehicle sales increase overtime, creating new demand for electricity services both in residential and commercial buildings (e.g. charging stations) as well as demand for new EV and hydrogen fuel cell charging stations. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. According to the CARB, 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.

Executive Order N-79-20

The Order requires the California Air Resources Board (CARB) develop regulations that: (1) require all in-state sales of new passenger cars and trucks be zero-emission by 2035; (2) require all medium-

and heavy-duty vehicles, "where feasible," be zero emission by 2045; and (3) work to make all off-road vehicles and equipment zero emissions by 2035.

California Building Energy Efficiency Standards

The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the Building Energy Efficiency Standards, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Although these standards were not originally intended to reduce GHG emissions, increased energy efficiency results in decreased GHG emissions because energy efficient buildings require less electricity and thus less consumption of fossil fuels, which emit GHGs. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The current 2019 Building Energy Efficiency Standards, commonly referred to as the "Title 24" standards, include changes from the previous standards that were adopted, to do the following:

- Provide California with an adequate, reasonably priced, and environmentally sound supply of energy.
- Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020.
- Pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.
- Act on the California Energy Commission's Integrated Energy Policy Report, which finds that standards are the most cost effective means to achieve energy efficiency, states an expectation that the Building Energy Efficiency Standards will continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Building Energy Efficiency Standards in reducing energy related to meeting California's water needs and in reducing GHG emissions.
- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of State building codes.
- Meet Executive Order S-20-04, the Green Building Initiative, to improve the energy efficiency of non-residential buildings through aggressive standards.

The most recent Title 24 standards are the 2019 Title 24 standards. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.

Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards. This will reduce greenhouse gas emissions by 700,000 metric tons over three years, equivalent to taking 115,000 fossil fuel cars off the road. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades.

LOCAL

Glenn County Air Pollution Control District

The Glenn County Air Pollution Control District (APCD) is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

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

GLENN COUNTY APCD RULES AND REGULATIONS

The Glenn County Air Pollution Control District (APCD) is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

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

Glenn County Regional Transportation Plan

The current Regional Transportation Plan (RTP) produced by the Glenn County Local Transportation Commission was adopted in 2020. The RTP serves as the backbone of transportation fiscal planning by providing capital program planning for all regional, state, and federally funded projects in the County. The RTP states that its focus is "developing a coordinated and balanced multi-modal regional transportation system… The balance is achieved by considering investment and improvements for moving people and goods across all modes including roads, transit, bicycle, pedestrian, trucking, railroad, and aviation." The RTP also demonstrates compliance with air quality conformity requirements under the federal Clean Air Act.

The RTP incorporates new legislation and the associated goals, particularly related to Assembly Bill 32 and Senate Bill 375, which encourage regional greenhouse gas (GHG) emission reductions from passenger vehicles and light duty trucks through changes in transportation and land use promotes measures to improve air quality and health goals in alignment with state and federal goals.

3.7.3 IMPACTS AND MITIGATION MEASURES

ENERGY AND GREENHOUSE GASES THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project would do any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: General Plan implementation has the potential to generate GHG emissions that could have a significant impact on the environment and/or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Significant and Unavoidable)

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

Development anticipated under the proposed General Pan's Land Use Map would include activities that emit greenhouse gas emissions over the short and long term. A summary of short- and long-term emissions and the analysis for each are included below.

The major projected impacts of climate change in Willows are expected to be more days of extreme heat over longer periods, as well as potential for localized flooding and drought conditions. The major sources of GHGs in Willows are on-road transportation, non-residential energy, and residential energy use. Short-term and long-term emissions typically associated with construction and operations of future development projects.

SHORT-TERM EMISSIONS

Short-term greenhouse gas emissions would occur because of construction equipment used for the following: demolition, grading, paving, and building construction activities associated with future development and infrastructure projects that will be undertaken in Willows over the next 20 years. GHG emissions would also result from worker and vendor trips to and from project sites and from demolition and soil hauling trips. Construction activities are short-term and cease to emit greenhouse gases upon completion, unlike operational emissions that are continuous year after year until operation of the use ceases. There is no threshold of significance for construction-related GHG emissions for plan-level impacts (including general plans).

Adoption of the proposed General Plan does not directly approve or otherwise entitle any new development projects or infrastructure improvement projects in Willows. As such, the construction-related GHG emissions of future projects cannot be known or quantified at this time, as it would be highly speculative. Typically, construction-related GHG emissions contribute unsubstantially (less than one percent) to a project's annual greenhouse gas emissions inventory and mitigation for

construction-related emissions is not effective in reducing a project's overall contribution to climate change, given how small of a piece of the total emissions construction emissions are. Short-term climate change impacts due to future construction-related activities would be subject to State requirements for GHG emissions and would be assessed on project-by-project basis, as required by CEQA.

LONG-TERM EMISSIONS

Future development projects will result in continuous GHG emissions from mobile, area, and operational sources. Mobile sources, including vehicle trips to and from development projects, will result primarily in emissions of CO_2, with minor emissions of CH_4 and N_2O. Other significant GHG emission come from natural gas usage and methane. Electricity usage by future development and indirect usage of electricity for water and wastewater conveyance will result primarily in emissions of carbon dioxide. Disposal of solid waste will result in emissions of methane from the decomposition of waste at landfills coupled with CO_2 emission from the handling and transport of solid waste. These sources combine to define the long-term greenhouse gas inventory for typical development projects.

The effectiveness of efforts by the Glenn County RTPA to provide transportation alternatives and to implement policies and strategies consistent with State and national goals of reducing GHG emissions can be measured in terms of reductions in vehicle miles traveled (VMT) or expected growth in VMT. VMT reductions correlate directly with reductions in GHG emissions. Caltrans reports VMT by County on an annual basis. Glenn County has experienced modest growth in population and employment over the past two decades and is forecast to continue this trend into the future. In recent years the vehicle miles traveled (VMT) has decreased on roadways managed by Glenn County and the Cities of Willows and Orland and increased slightly on state highways. The VMT on City of Orland roadways was 39.85 in 2001 and has decreased consistently to an estimated VMT of 25.77 in 2017, which equates to an average annual change of -1.68%. The VMT on City of Willows roadways peaked in 2002 at 56.58 and has decreased fairly consistently to an estimated VMT of 43.91 in 2017. Between 2002 and 2017, City of Willows VMT decreased at an average annual rate of -1.40%. The VMT on state highways has increased from 829.39 in 2001 to 1,028.21 in 2017 for an average annual change of 1.5%. The VMT on Glenn County roadways has decreased from 319.19 in 2001 to 289.05 in 2017 for an average annual change of -0.59%. Overall, VMT on all roadways in Glenn County has increased by an average annual rate of 0.90% between 2001 and 2017. The County will continue to monitor population and employment and VMT growth consistent with the RTP, RTP performance measures, and the County's General Plan policies to track changes in travel demand.

As shown in Chapter 2.0 of this Draft EIR, with implementation of the proposed Project, the City of Willows Planning Area is estimated to grow to a total population of up to 8,689 persons.

As growth occurs on the periphery of the city, total VMT will increase and vehicle trip lengths may lengthen causing higher VMT per capita levels than that of existing development. As described in Chapter 3.13 (Transportation and Circulation), while the planned bike facilities and potential future transit improvements could improve safety and mobility, they are unlikely to decrease VMT given

the general layout of Willows. Residents of Willows in the future will likely engage in similar travel patterns to existing residents based on planned land use, roadways, and alternative modes of transportation in the City, resulting in the absolute VMT of the City and increasing and the VMT per capita in Willows remaining similar to baseline in the planning horizon. While the proposed general plan land use pattern is likely to produce similar VMT per capita levels as under existing conditions, the proposed general plan includes policies designed to reduce vehicle travel and VMT.

According to the CARB's 2017 Climate Change Scoping Plan, the transportation sector remains the largest source of GHG emissions in the State, accounting for 37% of the inventory (CARB, 2017). A typical passenger vehicle emits approximately 4.6 metric tons of CO_2 per year (U.S. EPA, 2018). This number can vary based on a vehicle's fuel, fuel economy, and the number of miles driven per year.

In order to reduce community-wide GHG emissions, the proposed General Plan includes policies and programs that would limit increases to greenhouse gas emissions within the city. These policies and actions are included within various elements of the General Plan as listed at the end of this section.

The General Plan includes policies and actions aimed at reducing GHG throughout the Planning Area and region through multimodal improvements, adherence to green building codes and energy requirements, and through the review of individual development projects. Specifically, Action LU-2f, requires the City to use the development review process and the CEQA process to evaluate and mitigate the local and cumulative effects of new development on air quality. And greenhouse gases, and to mitigate of adverse impacts to the maximum extent that is feasible and practical.

General Plan policies and implementing actions would minimize potential impacts associated with GHG emissions in the Planning Area through the promotion of VMT reduction strategies, multimodal support and transportation improvements, and the support of green building practices, and would support requirements under AB 32 and SB 375.

Subsequent development projects will be required to comply with the General Plan and adopted federal, state, and local regulations for the reduction of GHG emissions. The City of has prepared the General Plan to include numerous goals, policies and implementing actions intended to reduce GHG emissions associated with future development and improvement projects. GHG emissions would be minimized through the implementation of the goals, policies, and actions listed below. However, even with implementation of the goals, policies, and actions contained in the proposed General Plan, there is no guarantee that the General Plan alone would be sufficient to limit GHGs to the extent required by AB 32 and SB 375, and other federal and state regulations, and a quantitative GHG at the program levels in not feasible. Therefore, out of an abundance of caution, General Plan implementation is considered to have the potential to generate GHG emissions that could have a significant impact on the environment and/or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. This impact is considered **significant and unavoidable**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU-1.1 Provide for a full range of land uses within the City that are conveniently located in proximity, and provide for commercial, public, and quasi-public uses that support and enhance the livability of neighborhoods.

LU-1.4 Encourage infill development and logical development patterns. The City should discourage leap-frog development and undue conversion of open space and agricultural lands, while also recognizing the Willows Urban limit line (established by Glenn County) to direct future development.

LU-2.7 Promote logical City boundaries and work with Glenn County to ensure and develop complementary and compatible uses adjacent to Willows.

LU-3.2 Encourage residential development to occur in a balanced and efficient pattern that reduces sprawl, preserves open space, and creates convenient connections to other land uses.

CIRCULATION ELEMENT POLICIES

CIR 2.1: Implement best practices to improve the pedestrian and bicycle environment. CIR 2.2: Consider walking and bicycling school access as a priority over vehicular movements when any such conflicts occur.

CIR 2.3: Coordinate pedestrian and bicycle facility improvements and pavement improvement projects (e.g. repaving and restriping), to the greatest extent feasible and while taking into consideration potential secondary effects.

CIR 2.4: Ensure that residents have convenient transit service to employment centers, County and City service centers, other government centers, and regional destinations (i.e., Sacramento International Airport), as funding allows.

CIR 2.5: To support bicycle, pedestrian, and transit usage, provide amenities including pedestrian-scale lighting, bicycle parking, shade trees and landscaping, and bus shelters and benches.

CIR 4.1: Support land use with increased densities and mixed uses, consistent with the Land Use Element, to reduce vehicle miles traveled and promote the use of walking, biking, and transit.

CIR 4.2: Encourage employers to provide programs for carpooling/transit/biking/walking subsidies, bicycle facilities, ridesharing, telecommuting, and working at home.

CIR 4.3: Monitor the deployment of new transportation technologies and services and develop policies that implement best practices to ensure these technologies and services benefit the public and the multimodal transportation system.

CIR 4.4: Support the creation of electric vehicle charging stations at commercial, government, and other employment and community destinations.

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 7.1: Require all development projects to comply with the mandatory energy efficiency requirements of the California Green Building Standards Code (CALGreen) and Building and Energy Efficiency Standards.

COS 7.2: Support and encourage the implementation of innovative and green building best management practices including, but not limited to, sustainable site planning, solar opportunities, LEED certification, and exceeding the most current "green" development standards in the California Code of Regulations (CCR), Title 24, as feasible.

COS 7.3: As feasible, promote energy efficiency throughout City operations and install, as feasible, energy-efficient lighting, appliances, and alternative-energy infrastructure in City facilities during routine maintenance and as upgrades are needed.

COS 7.4: As City fleet vehicles are replaced, procure alternative energy and fuel-efficient City vehicles and equipment that meet or surpass state emissions requirements, to the extent feasible.

COS 7.5: Promote incentives from local, state, and federal agencies for improving energy efficiency and expanding renewable energy installations.

COS 9.10: Promote best management practices in agricultural operations to reduce emissions, conserve energy and water, and utilize alternative energy sources.

COS 9.12: Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.

LAND USE ELEMENT ACTIONS

LU-2f: Review development projects, consistent with the requirements of the California Environmental Quality Act and other applicable laws, to identify potential impacts associated with aesthetics, agriculture, air quality, circulation, community character, natural and cultural resources, greenhouse gases, public health and safety, water quality and supply, public services and facilities, and utilities and to mitigate of adverse impacts to the maximum extent that is feasible and practical.

CIRCULATION ELEMENT ACTIONS

CIR-2a: Implement and build on recommendations for pedestrian and bicycle improvements included in the Glenn County Active Transportation Plan (2019).

CIR-2b: Work with appropriate agencies to implement a regional bikeway system that connects the City to other communities, recreation destinations, and scenic areas in Glenn County.

CIR-2c: Pursue funding for construction and maintenance of bikeways and sidewalks, including off-road bikeways, where feasible.

CIR-2d: Add planned bicycle and pedestrian facilities in conjunction with road rehabilitation, reconstruction, or re-striping projects whenever feasible.

CIR-2e: Partner with Glenn Ride and other regional transit providers to conduct regular service reviews to advance convenient transit service to employment centers, County and City service

centers, other government centers, and regional destinations (i.e., Sacramento International Airport), as funding allows.

CIR-2f: Enhance transit stops through high quality, well-maintained shelters and provide transit timetables.

CIR-2g: Consider alternatives to conventional bus systems, such as smaller shuttle buses (micro-transit), on-demand transit services, or transportation networking company services that connect residential communities to regional activity centers with greater cost efficiency.

CIR-4a: Adopt VMT thresholds and screening criteria for environmental impact analysis. Review and update those guidelines on a regular basis using updated data.

CIR-4b: Explore the feasibility of a VMT impact fee program to fund transportation demand management strategies that are proven to reduce VMT.

CIR-4c: Require proposed development projects that could have a potentially significant VMT impact to consider reasonable and feasible project modifications and other measures during the project design and environmental review stage of project development that would reduce VMT effects in a manner consistent with state guidance on VMT reduction.

CIR-4d: Consider requiring new development to incorporate electric vehicle charging in accordance with the California Green Building Standards Code and/or commit to using electric vehicles for a certain percentage of its vehicle fleet. Encourage installation of electric vehicle charging stations at existing development.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-7a: Continue to review development projects to ensure that all new public and private development complies with the California Code of Regulations (CCR), Title 24 and CalGreen standards as well as the energy efficiency standards established by the General Plan and the Willows Municipal Code.

COS-7b: Consider offering reduced permit fees and or expedited permit applications on solar installation projects and promote State, federal, and private rebate programs.

COS-7c: Consider use of alternative fuel vehicles or electric vehicles for City use. If deemed appropriate, identify vehicle purchase needs in the City's Fleet Replacement Plan.

COS-7d: Provide a conservation page (or similar page) on the City's website that provides links to resource agencies and provides information regarding local and regional conservation and energy upgrade and efficiency programs.

Impact 3.7-2: General Plan implementation has the potential to result in a significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency (Less than Significant)

The State CEQA Guidelines require consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix G of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, a project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed project is the updated Willows General Plan, with a horizon year of 2040. Buildout of the General Plan includes residential, commercial, office, industrial, mixed-use, open space, and other land uses (see Chapter 2.0: Project Description for further detail). The amount of energy used in the Planning Area at buildout would directly correlate to the type and size of development, the energy consumption associated with unit appliances, outdoor lighting, and energy use associated with other buildings and activities. Other major sources of Planning Area energy consumption include fuel used by vehicle trips generated during construction and operational activities, and fuel used by off-road and on-road construction vehicles during construction. The following discussion provides a breakdown of the energy uses in the Planning Area upon buildout of the proposed project.

ELECTRICITY AND NATURAL GAS

At buildout, the City of Willows' electricity and natural gas consumption would be used primarily to power buildings (all types of buildings, including residential, commercial, office, industrial, public, etc.). Pacific Gas and Electric Company (PG&E) provides electrical and natural gas services to residences and businesses throughout the City of Willows, though on-site solar generation would generate a substantial source of energy for the community at General Plan buildout.

FUEL CONSUMPTION - ON-ROAD VEHICLES (OPERATION)

Buildout of the General Plan would generate vehicle trips during its operational phase. Based on the information included in Chapter 3.15 (Transportation and Circulation), the proposed General Plan would result in a similar or increased VMT per capita when compared to the existing (baseline) condition. Fuel consumption is anticipated to represent the largest sector of GHG emissions at

General Plan buildout. Energy for on-road vehicles would derive from gasoline, diesel, as well as electricity from PG&E and from on-site solar generation.

FUEL CONSUMPTION - ON-ROAD VEHICLES (CONSTRUCTION)

The proposed project would also generate on-road vehicle trips during construction activities (from construction workers, vendors, and haulers). The vast majority of on-road mobile vehicle fuel used during the construction activities during buildout of the General Plan would occur during building construction.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during construction activities. A non-exhaustive list of off-road constructive vehicles expected to be used during construction activities includes: cranes, forklifts, generator sets, tractors, excavators, and dozers.

CONCLUSION

Buildout of the General Plan would use energy resources for the operation of buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel), and from off-road construction activities (e.g. diesel fuel) associated with buildout of the General Plan. Each of these activities would require the use of energy resources. Developers of individual projects within the Planning Area would be responsible for conserving energy, to the extent feasible, and would rely heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

Buildout of the General Plan would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio.

PG&E is expected to achieve at least 60% renewables by 2030, and 100 percent zero-carbon electricity by 2045 (in compliance with SB 100). Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards (“part 6”), would be applicable to the proposed project. Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, additional project-specific the sustainability features individual development projects could further energy consumption of individual projects. The proposed project would also be in compliance with the planning documents described previously within this section.

As a result, the proposed project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for during General Plan buildout, including during construction, operations,

maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the Planning Area. The City of Willows would comply with all existing energy standards, and would not result in significant adverse impacts on energy resources. Furthermore, connections exist between the Planning Area and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the Planning Area would be linked closely with existing networks that, in large part, are sufficient for most residents of the Planning Area and neighboring communities. For the reasons stated above, buildout of the General Plan would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This is a **less than significant** impact.

GENERAL PLAN POLICIES, AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 7.1: Require all development projects to comply with the mandatory energy efficiency requirements of the California Green Building Standards Code (CALGreen) and Building and Energy Efficiency Standards.

COS 7.2: Support and encourage the implementation of innovative and green building best management practices including, but not limited to, sustainable site planning, solar opportunities, LEED certification, and exceeding the most current "green" development standards in the California Code of Regulations (CCR), Title 24, as feasible.

COS 7.3: As feasible, promote energy efficiency throughout City operations and install, as feasible, energy-efficient lighting, appliances, and alternative-energy infrastructure in City facilities during routine maintenance and as upgrades are needed.

COS 7.4: As City fleet vehicles are replaced, procure alternative energy and fuel-efficient City vehicles and equipment that meet or surpass state emissions requirements, to the extent feasible.

COS 7.5: Promote incentives from local, state, and federal agencies for improving energy efficiency and expanding renewable energy installations.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-7a: Continue to review development projects to ensure that all new public and private development complies with the California Code of Regulations (CCR), Title 24 and CalGreen standards as well as the energy efficiency standards established by the General Plan and the Willows Municipal Code.

COS-7b: Consider offering reduced permit fees and or expedited permit applications on solar installation projects and promote State, federal, and private rebate programs.

COS-7c: Consider use of alternative fuel vehicles or electric vehicles for City use. If deemed appropriate, identify vehicle purchase needs in the City's Fleet Replacement Plan.

COS-7d: Provide a conservation page (or similar page) on the City's website that provides links to resource agencies and provides information regarding local and regional conservation and energy upgrade and efficiency programs.

Hazards include man-made or natural materials or conditions that may pose a threat to human health, life, property, or the environment. Hazardous materials and waste present health hazards for humans and the environment. These health hazards can result during the manufacture, transportation, use, or disposal of such materials if not handled properly. In Willows, hazards to humans can also occur from natural or human induced wildfire and air traffic accidents.

This section provides a background discussion of the hazardous materials and waste, fire hazards, and hazards from air traffic found in the City of Willows. This section is organized with an existing setting, regulatory setting, and impact analysis. Additional analysis related to wildfire hazards is contained in Section 3.16, Wildfire, of this EIR.

One comment from the California Department of Toxic Substances Control (DTSC) was received during the NOP comment period regarding this environmental topic. The letter provided general information on the types of impacts that could occur, and potential data sources. These comments have been addressed throughout this EIR chapter. All comments are included in Appendix A of this DEIR.

3.8.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS AND WASTE

Hazardous Materials

A hazardous material is 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 irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety, or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials.

Hazardous Waste

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including soil or groundwater that is contaminated with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals.

Transportation of Hazardous Materials

The transportation of hazardous materials within California is subject to various Federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery, or the loading of such materials (California Vehicle Code §§ 31602(b), 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is restricted to these routes except in cases where additional travel is required from that route to deliver or receive hazardous materials to and from users.

HAZARDOUS SITES

Envirostor Data Management System

The DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation / Investigation Sites. The hazardous waste facilities include: Permitted–Operating, Post-Closure Permitted, and Historical Non-Operating.

There are 11 locations with a Willows address that are listed in the Envirostor database. Table 3.8-1 lists the location of DTSC sites within Willows.

TABLE 3.8-1: WILLOWS SITE CLEANUP AND HAZARDOUS FACILITIES LIST (ENVIROSTOR)

NAME	*ENVIROSTAR ID*	*STATUS*	*LOCATION*
CORRECTIVE ACTION			
WILLOWS GLENN COUNTY AIRPORT	80001811	NO FURTHER ACTION	HWY 162 & I-5
EVALUATION			
BURROWS OIL COMPANY	11510001	REFER: OTHER AGENCY	245 GARDEN
HENDRICKSON AIR SERVICE	11070011	REFER: RWQCB	HIGHWAY 162
RICHFIELD OIL CORP	11510003	REFER: OTHER AGENCY	545 NORTH COLUSA
SHELL OIL	11510004	REFER: RWQCB	630 EUREKA
HAZ WASTE/HAZ WASTE - RCRA			
GLENN COUNTY DEPARTMENT OF AGRICULTURE	CAD000625962	PROTECTIVE FILER	720 NORTH COLUSA STREET
WILLOWS GLENN COUNTY AIRPORT	CAT000625525	CLOSED	HWY 162 & I-5
HISTORICAL			
GLENN COUNTY AIRPORT - WILLOWS	11070001	REFER: RCRA	WEST SIDE OF I-5 FREEWAY AT WILLOWS
MILITARY EVALUATION			

NAME	*ENVIROSTAR ID*	*STATUS*	*LOCATION*
WILLOWS AUXILIARY FIELD (J09CA1002)	80000778	NO FURTHER ACTION	
SCHOOL INVESTIGATION			
WILLOWS COMMUNITY SCHOOL	11000002	NO ACTION REQUIRED	BIRCH STREET/VILLA AVENUE
VOLUNTARY CLEANUP			
PG&E, WILLOWS	11490002	CERTIFIED / OPERATION & MAINTENANCE - LAND USE RESTRICTIONS	310 E. WOOD STREET

SOURCE: CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL, ENVIROSTOR DATABASE, 2022.

Cortese List

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. California 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. There are no hazardous materials release sites located in the Planning Area listed on the Cortese List.

GeoTracker

GeoTracker is the California Water Resources Control Board's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites.

Leaking Underground Storage Tanks (LUST)

There are 24 locations with a Willows address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). Of the sites identified, 22 of the locations have undergone LUST cleanup and the State has closed the case. One site is open for site assessment, and one open site is eligible for closure. Table 3.8-2 lists the name and location for LUSTs in Willows.

TABLE 3.8-2: WILLOWS GEOTRACKER DATABASE LUST SITES

SITE NAMES	*STATUS*	*LOCATION*
ARCO #2094	OPEN - VERIFICATION MONITORING	1399 WOOD ST W
CA WATER SERVICE CO	COMPLETED - CASE CLOSED	420 CEDAR ST
CALTRANS WILLOWS MAINTENANCE STN	COMPLETED - CASE CLOSED	939 HUMBOLDT N
CHEVRON #9-0256	COMPLETED - CASE CLOSED	104 TEHAMA ST N
FITZPATRICK CHEVROLET	COMPLETED - CASE CLOSED	201 TEHAMA ST S
FORMER GAS STATION/JACO OIL COMPANY PROPERTY	OPEN - ELIGIBLE FOR CLOSURE	410 N. TEHAMA STREET
FORMER SS	COMPLETED - CASE CLOSED	1401 WOOD ST W
GANDY-STALEY OIL CO. INC.	COMPLETED - CASE CLOSED	630 EUREKA ST
GLENN COUNTY SERVICE CENTER	COMPLETED - CASE CLOSED	453 CO RD 49 1/2
GLENN GENERAL HOSPITAL	COMPLETED - CASE CLOSED	1133 SYCAMORE ST W
I.G. ZUMWALT COMPANY	COMPLETED - CASE CLOSED	311 BUTTE ST N
KAMPSCHMIDT TRUCKING	COMPLETED - CASE CLOSED	895 NORTH TEHAMA STREET
KELLEHER FACILITY (FORMER)	COMPLETED - CASE CLOSED	710 SOUTH TEHAMA STREET
KNUDSEN/FOREMOST	COMPLETED - CASE CLOSED	121 CEDAR ST E
MENDOCINO FOREST	COMPLETED - CASE CLOSED	420 LAUREL ST E
MERYL STOKES	COMPLETED - CASE CLOSED	200 GARDEN
PG&E WILLOWS MAINTENANCE STN.	COMPLETED - CASE CLOSED	631 COLUSA ST N
SEHORN PROPERTY	COMPLETED - CASE CLOSED	315 TEHAMA ST
SHELL SS	COMPLETED - CASE CLOSED	1300 WOOD ST W
UNOCAL #6033	COMPLETED - CASE CLOSED	1502 WOOD ST W
WILLOWS CARDLOCK	COMPLETED - CASE CLOSED	900 SOUTH TEHAMA STREET
WILLOWS MOTOR SUPPLY	OPEN - SITE ASSESSMENT	112 WEST WOOD STREET
WILLOWS O&M FACILITY	COMPLETED - CASE CLOSED	HWY 162
WILLOWS PLANT	COMPLETED - CASE CLOSED	CO RD 49

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2022.

Permitted Underground Storage Tank (UST)

There are 4 locations with a Willows address that have Underground Storage Tanks (UST) that are permitted through the California Water Resources Control Board. Table 3.8-3 lists the name and location of the 4 permitted underground storage tanks in Willows.

TABLE 3.8-3: WILLOWS GEOTRACKER DATABASE UST SITES

SITE NAME	*LOCATION*
CHEVRON STATION #95266	1250 W WOOD ST
DIAMOND GAS & MART #6	1300 W WOOD ST
RUSSELL M MORGAN INC. DBA BUD'S AM/PM	1399 W WOOD ST
WILLOWS TRAVEL PLAZA LLC	1481 COUNTY ROAD 99W

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2022.

Water Board Program Cleanup Sites

There are 11 locations with a Willows address that are listed in the GeoTracker database for Water Board Cleanup Sites. Seven of the locations have undergone cleanup and the State has closed the case. There are 4 locations in Willows with open cases. Table 3.8-4 lists the location of open and closed cases for Water Board Program Cleanup Sites in Willows.

TABLE 3.8-4: WILLOWS WATER BOARD CLEANUP SITES

SITE NAME	*LOCATION*
COMPLETED - CASE CLOSED	
GLENN COUNTY AIRPORT - WILLOWS	I-5 & HWY. 162
GREAT WESTERN GROWERS	6500 COUNTY ROAD 60
HENDRICKSON AIR SERVICE	WILLOWS AIRPORT, I-5 & HWY 162
MANN & SONS AG AVIATION	WILLOWS AIRPORT, I-5 & HWY 162
MICHAUD AVIATION	WILLOWS AIRPORT, I-5 & HWY 162
TOSCO CORP. - WILLOWS BULK PLANT	COUNTY ROAD 53
WORLD AGRI-AIR, INC.	WILLOWS AIRPORT, I-5 & HWY 162
OPEN - INACTIVE	
WILBUR-ELLIS CO, FORMERLY GLENN/JOHN TAYLOR FERTILIZER (COUNTY RD 57 & HWY 99, WILLOWS)	COUNTY ROAD 57 & HWY 99
WILLOWS FLYING SERVICE	COUNTY ROAD 39 BETWEEN I-5 & HWY 99
OPEN - VERIFICATION MONITORING	
BARBER CASHEW SUPPLY CORP - WILLOWS	219 NORTH COLUSA ST
PG&E- WILLOWS	310 EAST WOOD STREET

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2022.

Waste Disposal Facilities

The vast majority of landfill disposal from the City of goes to the Glenn County Transfer Station, owned and operated by the Glenn County Waste & Recycling Department.

Glenn County owns and operates the 195+ acre Glenn County Landfill Site, located on County Road 33, west of Artois. It was a Class III landfill (a facility at which protection is provided to water quality

from municipal, industrial and agricultural wastes) with a maximum permitted capacity of 2,400,000 cubic yards, however, the landfill facility closed in 2020. This site used to receive agricultural waste, construction and demolition waste, dead animal, industrial, inert, mixed municipal waste, and tires.

The Glenn County Transfer Station is a municipal solid waste, materials recovery facility, transfer station, and anaerobic digestion facility. These facilities and associated facilities, equipment and operations would be are to manage municipal solid waste from Glenn County (including Willows) and potentially from the City of Chico. Waste collected at the transfer station that cannot be recycled is distributed to various out-of-county landfills for disposal.

TABLE 3.8-5: LANDFILLS EXISTING DAILY CAPACITY

LANDFILL	LOCATION	MAXIMUM DAILY THROUGHPUT (TONS/DAY)
Glenn County Transfer Station	Artois	200

SOURCE: CAL RECYCLE. ACCESSED JUNE 2019.

HAZARDS FROM AIR TRAFFIC

The State Division of Aeronautics has compiled extensive data regarding aircraft accidents around airports in California. This data is much more detailed and specific than data currently available from the FAA and the National Transportation Safety Board (NTSB). According to the California Airport Land Use Planning Handbook (2011), prepared by the State Division of Aeronautics, 21 percent of general aviation accidents occur during takeoff and initial climb and 44.2 percent of general aviation accidents occur during approach and landing. The State Division of Aeronautics has plotted accidents during these phases at airports across the country and has determined certain theoretical areas of high accident probability.

Approach and Landing Accidents

As nearly half of all general aviation accidents occur in the approach and landing phases of flight, considerable work has been done to determine the approximate probability of such accidents. Nearly 77 percent of accidents during this phase of flight occur during touchdown onto the runway or during the roll-out. These accidents typically consist of hard or long landings, ground loops (where the aircraft spins out on the ground), departures from the runway surface, etc. These types of accidents are rarely fatal and often do not involve other aircraft or structures. Commonly these accidents occur due to loss of control on the part of the pilot and, to some extent, weather conditions. (California Division of Aeronautics, 2011).

The remaining 23 percent of accidents during the approach and landing phase of flight occur as the aircraft is maneuvered towards the runway for landing, in a portion of the airspace around the airport commonly called the traffic pattern. Common causes of approach accidents include the pilot's misjudging of the rate of descent, poor visibility, unexpected downdrafts, or tall objects beneath the final approach course. Improper use of rudder on an aircraft during the last turn toward the runway can sometimes result in a stall (a cross-control stall) and resultant spin, causing the

aircraft to strike the ground directly below the aircraft. The types of events that lead to approach accidents tend to place the accident site fairly close to the extended runway centerline. The probability of accidents increases as the flight path nears the approach end of the runway. (California Division of Aeronautics, 2011).

According to aircraft accident plotting provided by the State Division of Aeronautics, most accidents that occur during the approach and landing phase of flight occur on the airport surface itself. The remainder of accidents that occur during this phase of flight are generally clustered along the extended centerline of the runway, where the aircraft is flying closest to the ground and with the lowest airspeed. (California Division of Aeronautics, 2002).

Takeoff and Departure Accidents

According to data collected by the State Division of Aeronautics, nearly 65 percent of all accidents during the takeoff and departure phase of flight occur during the initial climb phase, immediately after takeoff. This data is correlated by two physical constraints of general aviation aircraft:

- The takeoff and initial climb phase are times when the aircraft engine(s) is under maximum stress and is thus more susceptible to mechanical problems than at other phases of flight; and
- Average general aviation runways are not typically long enough to allow an aircraft that experiences a loss of power shortly after takeoff to land again and stop before the end of the runway.

While the majority of approach and landing accidents occur on or near to the centerline of the runway, accidents that occur during initial climb are more dispersed in their location as pilots are not attempting to get to any one specific point (such as a runway). Additionally, aircraft vary widely in payload, engine power, glide ratio, and several other factors that affect glide distance, handling characteristics after engine loss, and general response to engine failure. This further disperses the accident pattern. However, while the pattern is more dispersed than that seen for approach and landing accidents, the departure pattern is still generally localized in the direction of departure and within proximity of the centerline. This is partially due to the fact that pilots are trained to fly straight ahead and avoid turns when experiencing a loss of power or engine failure. Turning flight causes the aircraft to sink faster and flying straight allows for more time to attempt to fix the problem (California Division of Aeronautics, 2002).

Local Airport Facilities

There is one airport facility (Willows Glenn County Airport) located within the Willows Planning Area as described below.

Willows Glenn County Airport: The Willows Glenn County Airport has 254 Acres of land and an intersecting V-type runway system located adjacent to Interstate 5 west of Willows. The Glenn County Willows Airport Land Use Plan was prepared in 1990, and an Airport Master Plan was adopted in 2008.

The Primary runway, # 16-34, is 150 feet wide, 150 feet wide, and 4500 feet with pavement strength of 38,000 pounds single gear configuration loading. Runway #13-31 is 100 feet wide and 4500 feet long.

Domestic airports in Glenn County, CA

Orland Haigh Field Airport: The Orland Haigh Field Airport is located on 390 acres owned by the County of Glenn on County Road "P" approximately 0.6 miles east of the City of Orland. The Airport Master Plan was prepared in 1989.

The Orland Airport has a 3,000-foot square asphalt mat on which most of the facilities are located. Runway #15/33 is 4500 feet long, 60 feet wide, paved, and lighted. In 1990 a new overlay was added to this Runway and a parallel taxi-way was constructed.

Major Regional Airport Facilities

Sacramento International Airport (SMF): The Sacramento Airport (approximately 90 mile south of Willows serves approximately 9 million passengers a day. SMF serves the Greater Sacramento Area, and it is run by the Sacramento County Airport System. The Airport covers approximately 6,000 acres and has two parallel runways, oriented north–south to align with prevailing winds. The airport has two terminals, terminal A and terminal B, with 32 gates.

National Transportation Safety Board Aviation Accident Database

The National Transportation Safety Board Aviation Accident Database identifies three aircraft accidents within Willows. The identified incidents include: accidents in 1983, 1984, and 1987. The accidents involved small airplanes making emergency landings, and none of the accidents included fatalities.

FIRE HAZARDS

Fuel Rank

Fuel rank is a ranking system developed by CalFire that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index reflects the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index reflects the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish a fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

Glenn County contains areas with "moderate" "High" "Very High" and "non-wildland fuel" ranks. Generally, the more developed areas within the county near the I-5 corridor including the City of Willows are considered non-wildland with the fuel rank increasing in the western foothill areas of the county. The areas warranting "moderate" to "Very High" fuel ranks possess combustible material in sufficient quantities combined with topographic characteristics that pose a wildfire risk.

Fire Hazard Severity Zones

The state has charged CalFire with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards.

Local Responsibility Areas

The Willows Planning Area is located within a Local Responsibility Area (LRA). CalFire has determined that the City of Willows has no Very High Fire Hazard Severity Zones (VHFHSZ) within Local Responsibility Areas. Figure 3.8-1 shows Fire Hazard Severity Zones for Local, State, and Federal Responsibility Areas.

State Responsibility Areas

There are no State Responsibility Areas within the Willows Planning Area. State Responsibility Areas (SRAs) within the County generally bisect the county from north to south beginning roughly 5 miles west of Interstate 5 moving west through the foothill region. FHSZ within the SRAs range from "Moderate" to "Very High". Figure 3.8-1 shows Fire Hazard Severity Zones for State Responsibility Areas within Glenn County.

Federal Responsibility Areas

There are no Federal Responsibility Areas within the Willows Planning Area. As shown on Figure 3.8-1 there are several areas designated as Federal Responsibility Areas (FRA) within the County. The majority of FRA's are located on the western side of the foothill region and include the Dogtown, Alder Springs, Fiddlers Green, and Copper City areas of Glenn County.

3.8.2 REGULATORY SETTING

FEDERAL

Aviation Act of 1958

The Federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA is charged with the creation and maintenance of a National Airspace System.

Federal Aviation Regulations (CFR, Title 14)

The Federal Aviation Regulation (FAR) establish regulations related to aircraft, aeronautics, and inspection and permitting.

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. 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.

Clean Water Act (CWA)

The CWA, which amended the Water Pollution Control Act (WPCA) of 1972, sets forth the §404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the §402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The §401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA §404, CWA §402, FERC Hydropower and §10 Rivers and Harbors).

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 material 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. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Environmental Protection Agency

The primary regulator of hazards and hazardous materials is the EPA, whose mission is to protect human health and the environment. The city of Willows is located within EPA Region 9, which includes Arizona, California, Hawaii, and New Mexico.

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of "Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire" by the U.S. Departments of the Interior and Agriculture.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the Federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum Federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

Resource Conservation and Recovery Act

The Resources Conservation and Recovery Act (RCRA) established EPA's "cradle to grave" control (generation, transportation, treatment, storage and disposal) over hazardous materials and wastes. In California, the Department of Toxic Substances Control (DTSC) has RCRA authorization.

STATE

Aeronautics Act (Public Utilities Code §21001)

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety, and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses* (Pub. Util. Code §21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

Assembly Bill 337

Per AB 337, local fire prevention authorities and the California Department of Forestry and Fire Protection (CalFire) are required to identify Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA). Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

California Code of Regulations

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application;
- Damage non-target crops or animals or any other public or private property; and
- Contaminate public or private property or create health hazards on said property.

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials, and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal. Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste.

Title 24 of the CCR is the California Building Standards Code. The California Fire Code is set forth in Part 9 of the Building Standards Code. The CA Fire Code, which is pre-assembled with the International Fire Code by the ICC, contains fire-safety building standards referenced in other parts of Title 24.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging, and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment, and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation, and maintenance of the state's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special, and hazardous).

California Department of Transportation

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 2011). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

California Government Code Section 65302

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

California Health and Safety Code

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

Division 12 establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and postsecondary buildings.

Division 20 establishes DTSC authority and sets forth hazardous waste and underground storage tank regulations. In addition, the division creates a State superfund framework that mirrors the Federal program.

Division 26 establishes California Air Resources Board (CARB) authority. The division designates CARB as the air pollution control agency per Federal regulations and charges the Board with meeting Clean Air Act requirements.

California Health and Safety Code §1300 et seq., and CA Building Codes.

State fire regulations are set forth in §13000 *et seq*. of the California Health and Safety Code, which is divided into "Fires and Fire Protection" and "Buildings Used by the Public." The regulations provide for the enforcement of the CA Building Codes and mandate the abatement of fire hazards.

The code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

California Vehicle Code §31600 (Transportation of Explosives)

This code establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

California Public Resources Code

The State's Fire Safety Regulations are set forth in Public Resources Code §4290, which include the establishment of State Responsibility Areas (SRA).

Public Resources Code §4291 sets forth defensible space requirements, which are applicable to anyone who "*…owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material"* (§4291(a)).

Food and Agriculture Code

Division 6 of the California Food and Agriculture Code (FAC) establishes pesticide application regulations. The division establishes training standards for pilots conducting aerial applications as well as permitting and certification requirements.

State Oversight of Hazards and Hazardous Materials

The DTSC is chiefly responsible for regulating the handling, use, and disposal of toxic materials. The State Water Resources Control Board (SWRCB) regulates discharge of potentially hazardous materials to waterways and aquifers and administers the basin plans for groundwater resources in the various regions of the state. The RWQCB oversees surface and groundwater. Programs intended to protect workers from exposure to hazardous materials and from accidental upset are covered under OSHA at the Federal and California Division of Occupational Safety and Health (Cal/OSHA) and the California Department of Health Services (DHS) at the state level. Air quality is regulated through the CARB and Bay Area Air Quality Management District. The State Fire Marshal is responsible for the protection of life and property through the development and application of fire prevention engineering, education, and enforcement; CalFire provides fire protection services for State and privately-owned wildlands.

CA Fire Code

The California Fire Code (CFC) establishes standards related to the design, construction, and maintenance of buildings. The standards set forth in the CFC range from designing for access by

firefighters and equipment and minimum requirements for automatic sprinklers and fire hydrants to the appropriate storage and use of combustible materials

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the SWRCB and the RWQCB. In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

LOCAL

Certified Unified Program Agencies

Senate Bill 1082 (1993) required the establishment of a unified hazardous waste and hazardous materials management program. The result was Cal EPA's United Program, which consolidates the actions of DTSC, the SWRCB, the RWQCB's, OES, and the State Fire Marshall. DTSC oversees the implementation of the hazardous waste generator and onsite treatment program, one of six environmental programs at the local level, through Certified Unified Program Agencies (CUPAs). CUPAs have authority to enforce regulations, conduct inspections, administer penalties, and hold hearings. The Glenn County Air Pollution Control District is the Administering Agency of the Certified Unified Program Agency (CUPA) for Glenn County.

Glenn County Department of Environmental Health

The Glenn County Department of Environmental Health's is the CUPA for the City of Willows and consolidates, coordinates, and makes consistent the following existing programs:

- Onsite Wastewater Treatment Systems Program;
- Solid Waste Program;
- Fire Debris Removal Guidelines;
- Water Quality Program.

Multi-Jurisdiction Hazard Mitigation Plan for Glenn County

The purpose of the Glenn County MJHMP Update is to provide the County and the Cities of Orland and Willows with a blueprint for hazard mitigation planning to better protect the people and property of the County and the Cities of Orland and Willows from the effects of future natural hazard events. The Glenn County MJHMP is the official statement of the County's and the Cities' of Orland and Willows commitment to ensuring a resilient community and serves as a tool to assist decision makers in directing mitigation activities and resources. The MJHMP was also developed to ensure the County and the Cities of Orland and Willows eligibility for federal disaster assistance, including Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation (PDM), Hazard Mitigation Grant Programs (HMGP), and Flood Mitigation Assistance Program (FMA).

Glenn County Office of Emergency Services (OES)

Glenn County is committed to preparing for and responding to any emergency or disaster. OES is a full spectrum emergency management program that integrates with all response agencies within the County.

Glenn County Operational Area Emergency Operations Plan

This plan was prepared for the Operational Area of Glenn County, California; including the county and the cities of Orland and Willows. This plan was developed as a joint project by the Glenn County Sheriff's Office – Office of Emergency Services (OES) and the cities of Orland and Willows. The plan development was funded by the Emergency Management Performance Grant program. This plan was developed utilizing the "best practices" from numerous Emergency Operations Plans from counties across California including Trinity, Sutter, Siskiyou, Yolo, Solano, Marin, and Tehama. This plan follows the guidelines and practices of the National Incident Management System (NIMS) and California's Standardized Emergency Management System (SEMS).

This plan is based on the authority of the local government(s) for emergency response and contains specific emergency support functions to be provided during an emergency, disaster. This plan applies to all jurisdictions and agencies that operate within Glenn County. This plan delegates Glenn County Sheriff's Office – Office of Emergency Services the authority and responsibility for the coordination and administration of emergency operations for the Operational Area of Glenn County. Any agency and jurisdiction within the Operational Area has the responsibility to develop and maintain plans, policies, and procedures pertaining to emergency and disaster response operations of their agencies and/or jurisdiction.

The information contained in the Basic Plan is available for public consumption, however, annexes may contain sections or appendices that are classified, For Official Use Only (FOUO), and should be handled as sensitive information not to be disclosed. No reproduction or distribution of this document, in whole or in part, is permitted without prior approval from the Glenn County Sheriff's Office – Office of Emergency Services.

The Glenn County Operational Area Emergency Operations Plan (EOP) addresses the response to extraordinary emergency situations associated with natural disasters and technological (man-made) emergencies in, or affecting, the Operational Area. This Plan may also provide the structure for responding to a planned event within the Operational Area.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact from hazards and hazardous materials if it will:

- 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 Government Code 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 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; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: General Plan implementation has the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant)

Future development, infrastructure, and other projects allowed under the General Plan may involve the transportation, use, and/or disposal of hazardous materials. Hazardous materials are typically used in industrial, and commercial uses, as well as residential uses. Future uses may involve the transport and disposal of such materials from time to time. Future activities may involve equipment or construction activities that use hazardous materials (e.g., coatings, solvents and fuels, and diesel-fueled equipment), cleanup of sites with known hazardous materials, the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated, or disposal of contaminated materials at an approved disposal site. While hazardous materials may be associated with industrial activities, hazardous materials may also be associated with the regular cleaning and maintenance of residential and other less intense uses. Accidental release of hazardous materials that are used in the construction or operation of a project may occur. There is also the potential for accidental release of pre-existing hazardous materials, associated with previous activities on a site.

The use, transportation, and disposal of hazardous materials is regulated and monitored by local fire departments, CUPAs, the Cal OSHA and the DTSC consistent with the requirements of Federal, State, and local regulations and policies. Facilities that store hazardous materials on-site are required to maintain a Hazardous Materials Business Plan in accordance with State regulations. In the event of an accidental release of hazardous materials, the local CUPA and emergency management agencies (e.g., Police and Fire) would respond. All future projects allowed under the General Plan would be required to comply with the provisions of Federal, State, and local requirements related to hazardous materials. As future development and infrastructure projects are considered by the City, each project would be evaluated for potential impacts, specific to the project, associated with hazardous materials as required under CEQA.

In addition to the requirements associated with Federal and State regulations and the Municipal Code, the General Plan includes policies and actions to address potential impacts associated with hazardous materials among other issues. These policies and actions in the General Plan would ensure that potential hazards are identified on a project site, that development is located in areas where potential exposure to hazards and hazardous materials can be mitigated to an acceptable level, and that business operations comply with Federal and State regulations regarding the use, transport, storage, and disposal of hazardous materials. The General Plan also includes policies and actions to ensure that the City has adequate emergency response plans and measures to respond in the event of an accidental release of a hazardous substance.

As described previously in the regulatory setting, hazardous materials regulations related to the use, handling, and transport of hazardous materials are codified in Titles 8, 22, and 26 of the CCR, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code. These laws were established at the state level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the state (e.g., Cal OSHA in the workplace or DTSC for hazardous waste) and/or the County. Implementation of Title 49, Parts 171-180, of the Code of Federal Regulations would reduce any impacts associated with the potential for accidental release of hazardous materials. Therefore, implementation of the proposed General Plan policies and actions listed below, as well as Federal and State regulations, would result in a **less than significant** impacts associated with the routine use, transport, storage, or disposal or accidental release of hazardous materials.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

SAFETY ELEMENT POLICIES

SA 3.1: Ensure that new critical facilities are located in areas that minimize exposure to potential natural hazards.

SA 3.2: Promote ongoing training of City staff on their functions and responsibilities in disaster preparedness.

SA 3.3: Ensure that critical facilities are properly supplied and equipped to provide emergency services.

SA 3.4: Support local and regional disaster planning and emergency response planning efforts, and look for opportunities to collaborate and share resources with other municipalities in the region.

SA 3.5: Continue to promote public safety through public education programs.

SA 3.6: Maintain effective mutual aid agreements for police, fire, medical response, and other functions as appropriate.

SA 4.1: Provide adequate funding for fire and law enforcement services, facilities and personnel to accommodate existing and future citizens' needs to ensure a safe and secure environment for people and property.

SA 4.2: Emphasize the use of physical site planning as an effective means of enhancing safety and preventing crime. Open spaces, landscaping, parking lots, parks, play areas and other public spaces should be designed with maximum feasible visual exposure to community residents.

SA 4.3: Ensure that fire and emergency medical services meet existing and future demand.

SA 4.4: Ensure that adequate water supplies are available for fire-suppression throughout the City.

SA 4.5: Support efforts to remedy any deficiencies in the water delivery system to ensure adequate fire-suppression flows.

SA 4.6: Require development to construct and fund all fire suppression infrastructure and equipment needed to provide adequate fire protection services.

SA 4.7: Promote fire safety through education and building design.

SA 4.8: Promote public outreach to increase community safety. Public outreach should include information related to defensible space and evacuation routes.

SA 4.9: Ensure development projects are reviewed for consistency with consistent with the Glenn County Multi-Jurisdiction Hazard Mitigation Plan.

SA 5.1: Encourage residents and businesses to minimize the use of toxic materials and products including the application of pesticides.

SA 5.2: Encourage local producers and users of hazardous materials to reduce the amounts of hazardous materials generated.

SA 5.3: Require hazardous waste generated within the City to be disposed of in a safe manner, consistent with all applicable local, State, and Federal laws.

SA 5.4: Require hazardous materials to be stored in a safe manner, consistent with all applicable local, State, and Federal laws.

SA 5.5: Require compliance with the Glenn County Air Pollution Control District Hazardous Waste Generator Program.

SAFETY ELEMENT ACTIONS

SA-3a: Coordinate with the Glenn County Office of Emergency Services (OES) and other local agencies, as necessary, to participate in and implement the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for Glenn County.

SA-3b: Conduct periodic emergency response training exercises and or participate in regional exercises to ensure that key members, local leaders, and emergency response personnel are adequately trained and prepared for emergency situations. Critical facilities within Willows should also be annually assessed to ensure they are properly supplied.

SA-3c: Encourage residents and community leaders to participate in disaster training programs.

SA-3d: Provide signage at public buildings and critical facilities that contain Automated External Defibrillators (AEDs).

SA-3e: Develop and annually update an emergency contact list and emergency response information on the City's website. The information should include emergency access routes, available emergency resources, and contact information for emergency responders.

SA-3f: As part of the development review process, consult with the fire department in order to ensure that the project provides adequate emergency access.

SA-4a: As part of the development review process, consult with the Sheriff's Department in order to ensure that the project does not impair the provision of law enforcement services through inappropriate site design. The use of physical site planning as an effective means of preventing crime, including lighting, visibility, and video surveillance requirements shall be determined by the Department, where applicable.

SA-4b: As part of the development review process, consult with the Fire Department in order to ensure that development projects facilitate adequate fire services and fire prevention measures.

SA-4c: Continue to require all new development to be reviewed for consistency with the relevant State and local Fire Safe Regulations, and the most recently adopted fire code standards. SA-4d Work with Glenn County and other partner agencies to review and update local hazard plans including emergency operation plans, and the Glenn County, CA Multi-Jurisdiction Hazard Mitigation Plan to include an analysis of evacuation routes, fire breaks and other community needs.

SA-4e: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster

SA-4f: Promote cooperation between the Willows Fire Department, Willows Rural Fire Protection District, and other countywide fire districts for training and mutual aid.

SA-4g: Review and require all projects to adhere to Municipal Code requirements to ensure adequate safety services. These include but are not limited to Chapter 19.05 (Impact Fee Ordinance), which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 2.25 (Fire Department) describes the duties of the municipal fire department and the responsibilities of the fire chief in determining imminent health and safety hazards, and the powers associated with such a determination. Chapter 17.25 (Improvements) describes the requirements of a subdivider to provide and connect water mains and fire hydrants to Cal Water's water system.

SA-4h: Review procedures for local implementation of the County Emergency Operations Plan (EOP) and help to educate the community on the need for emergency preparedness.

SA-5a: Work with existing business to require acceptance of oils, paints and other recyclable hazardous materials.

SA-5b: Coordinate with the Glenn County Air Pollution Control District as the Certified Unified Program Agency (CUPA) to ensure that businesses that handle hazardous materials prepare and file a Hazardous Materials Management Plan (HMMP), and Hazardous Materials Inventory Statement (HMIS). The HMMP and HMIS shall consist of general business information, basic information on the location, type, quantity, and health risks of hazardous materials, and emergency response and training plans.

SA-5c: Provide educational opportunities for generators of small quantity, household, and urban agriculture waste products regarding their responsibilities for source reduction and proper and safe hazardous waste management and disposal.

SA-5d: Provide information about drop-off programs for the local disposal of household hazardous waste offered in Glenn County. The availability of the programs should be widely publicized throughout the community.

SA-5e: Refer all permits for new projects or major additions to existing uses located on sites identified by the State as having or containing likely hazardous substances or materials to the Glenn County Air Pollution Control District to ensure compliance with applicable State and local regulations. If warranted, identify and require mitigation measures to ensure the exposure to hazardous materials from historical uses has been mitigated to acceptable levels consistent with EPA and/or DTSC standards.

Impact 3.8-2: General Plan implementation has the potential to 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)

Most schools within the City of Willows are part of the Willows Unified School District (WUSD). The WUSD provides school services for grades kindergarten through 12 (K-12) within the City of Willows. Within the City of Willows, there is an elementary school (Murdock Elementary), one middle school (Willows Intermediate School) and two high schools (Willows High School and Willows Community High School). Willows has one charter elementary school (Walden Academy), located within the Glenn County Office of Education School District. Table 3.8-6 provides a summary of the schools serving the City's population.

TABLE 3.8-6: PUBLIC ELEMENTARY, MIDDLE, AND HIGH SCHOOLS SERVING WILLOWS

SCHOOL	GRADES SERVED	ADDRESS	ENROLLMENT 2018-2019 SCHOOL YEAR
Murdock Elementary	K-5	655 French Street	619
Walden Academy	K-8	1149 West Wood Street	183
Willows Intermediate School	6-8	1145 West Cedar Street	365
Total			**1,167**
Willows High School	9-12	203 North Murdock Avenue	466
Willows Community High School	10-12	823 West Laurel Street	15
Total			**481**

SOURCES: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2018-19

The General Plan Land Use Element includes land use designations, but does not propose actual development projects, or businesses. As such, it is not possible to determine if a specific use will result in hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste. The uses and business operations with the highest possibility of having

businesses that result in hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste would be manufacturing, and industrial and commercial businesses and uses. Some of these uses could occur within ¼ mile of an existing school facility. Each of these uses may use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, and cleaning solvents. If handled appropriately, these materials do not pose a significant risk. The Manufacturing land use designation generally provides for a variety of light and heavy industrial activities, such as manufacturing, processing, packaging, warehousing and distribution. These types of activities may result in nuisance impacts to nearby sensitive receptors. The Light Industrial designation provides for a variety of light industrial uses that as indicated in the land use description are to be nonpolluting and which can co-exist with surrounding land uses and which do not in their maintenance, assembly, manufacturing or operations create smoke, gas, dust, sound, vibration, soot or glare to any degree which might be obnoxious or offensive to persons residing or conducting business in the city.

The proposed General Plan is not anticipated to directly lead to the establishment of new businesses that could use or emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste because the General Plan does not approve any specific development project. However, given the unknown nature of future business establishments within the commercial, manufacturing and industrial use areas, the potential for hazardous materials is present. The general Plan includes policies and actions to limit the potential exposure or upset of hazardous materials from business use. Specifically, General Plan Action SA-5b requires coordination with the Glenn County Air Pollution Control District as the Certified Unified Program Agency (CUPA) to ensure that businesses that handle hazardous materials prepare and file a Hazardous Materials Management Plan (HMMP), and Hazardous Materials Inventory Statement (HMIS). The HMMP and HMIS consists of general business information, basic information on the location, type, quantity, and health risks of hazardous materials, and emergency response and training plans.

All hazardous materials would be required to be handled in accordance with Federal, State, and County requirements, which would limit the potential for a project to expose nearby uses, including schools, to hazardous emissions or an accidental release. Hazardous emissions are monitored by RWQCB, DTSC and the local CUPA. In the event of a hazardous materials spill or release, notification and cleanup operations would be performed in compliance with applicable Federal, State, and local regulations and policies, including hazard mitigation plans. As part of the development review process, the City's proposed General Plan also requires projects that may result in significant risks associated with hazardous materials to include measures to address and reduce the risks to an acceptable level such that surrounding uses are not exposed to hazardous materials in excess of adopted state and federal standards. Compliance with all existing regulations as well as the proposed General Plan policies and actions related to land use compatibility and hazardous materials would result in a **less than significant** impact related to this topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See General Plan policies and actions identified in Impact 3.8-1.

Impact 3.8-3: General Plan implementation has the potential to have projects located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Less than Significant)

There are no hazardous materials release sites compiled pursuant to Government Code Section 65962.5 located in the Planning Area.

There are 11 locations with a Willows address that are listed in the Envirostor database, including 1 corrective action sites, 4 evaluation/investigation sites, 2 hazard waste/hazard waste-RCRA sites, 1 historical site, 1 military evaluation site, 1 school investigation site, 1 voluntary cleanup site. Of the 11 sites, 3 require no further action, 1 is certified, 1 is closed, 1 is protective filer, and 5 are referred to the RWQCB, RACRA, or other agency. As previously shown, Table 3.8-1 lists the active sites and the inactive (needs evaluation or action required) sites within Willows.

There are 24 LUST locations within Willows (i.e., with a Willows address) that are listed in the GeoTracker database. 22 of the locations have undergone LUST cleanup and the State has closed the case. Of the remaining two LUST locations within Willows, one site is open for verification monitoring and the other site is eligible for closure. As previously shown, in Table 3.8-2 lists the location of the open and closed cases for LUSTs in Willows.

The City of Willows does not have any active solid waste facilities listed in the SWIS database. The vast majority of landfill disposal from the City of goes to the Glenn County Transfer Station, owned and operated by the Glenn County Waste & Recycling Department. The Glenn County Transfer Station is located northwest of Willows on 5700 County Rd. 33 in Artois.

The above-mentioned sites are subject to various Federal and State laws and regulatory agencies, including the CERCLA, EPA, DTSC, and RWQCB. The General Plan does not propose or approve any specific development project, however development allowed by the General Plan could create a hazard to the public or the environment through a disturbance or release of contaminated materials if the development occurs on or adjacent to contaminated sites without appropriate measures to contain or mitigate the existing contamination. Federal and State regulations ensure that existing hazards, including those associated with known hazardous materials sites, are addressed prior to development. Compliance with Federal and State regulations would ensure that potential impacts associated with the hazardous conditions on sites listed pursuant to Government Code Section 65962.5 would be **less than significant**.

Impact 3.8-4: The Planning Area is located within an airport land use plan, two miles of a public airport or public use airport, and would not result in a safety hazard for people residing or working in the project area (Less than Significant)

Hazards related to airports are typically grouped into two categories: air hazards and ground hazards. Air hazards jeopardize the safety of an airborne aircraft and expose passengers, pilots, and crews to danger. Examples of air hazards include tall structures, glare-producing objects, bird and

wildlife attractants, radio waves from communication centers, or other features that have the potential to interfere with take-off or landing procedures, posing a risk to aircraft. Ground hazards jeopardize the safety of current and future residents and/or workers in the vicinity of an airport. The most obvious ground hazard is a crash, which may produce a serious, immediate risk to those residing in or using areas adjacent to the airport. Most accidents occur during take-off and landing. Therefore, the higher the density around an airport, including transportation facilities, the higher the risk associated with this type of hazard.

There is one airport facility located within the Planning Area. The Willows Glenn County Airport is a county-owned, public-use airport located one mile west of the central business district of Willows. The Willows Glenn County Airport has 254 Acres of land and an intersecting V-type runway system located adjacent to Interstate 5 west of Willows. The Glenn County Willows Airport Land Use Plan was prepared in 1990, and a Airport Master Plan was adopted in 2008.

The National Transportation Safety Board Aviation Accident Database identifies a total of ten aircraft accidents at the Willows-Glenn County Airport. The earliest record for an aircraft accident at the Willows-Glenn County Airport is July 28, 1984 (fatal). The most recent incident is from April 28, 2006 (nonfatal). The incident prior to this one occurred on August 2, 2004 (nonfatal). Out of the ten recorded aircraft accidents at the airport since 1984, two were fatal accidents causing a total of four deaths (NTSB, 2020).

The Planning Area is located within the airport influence area and approach and overflight safety zones. The City of Willows has prepared the General Plan to include policies and actions intended to ensure future developments are consistent with Airport's Comprehensive Airport Land Use Plan. General Plan Policy LU 2.8 ensures that development within the Willows Airport Influence Area is consistent with the compatible uses identified in the Project Review Guidelines for the Airport Land Use Commission. Additionally, Safety Element Action SA-7a requires as part of the development review process, new development and expansion proposals near the Willows Airport shall be reviewed for consistency with setbacks, land use restrictions, and height as determined by the Federal Aviation Administration (FAA) and the County Airport Land Use Commission; and be provided to the Airport Land Use Commission for review.

Implementation of the General Plan policies and actions discussed above and listed below, as well as Federal and State regulations, would ensure that potential impacts from General Plan implementation relative to this topic would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU 2.8 Ensure that development within the Willows Airport Influence Area is consistent with the compatible uses identified in the Project Review Guidelines for the Airport Land Use Commission.

SAFETY ELEMENT POLICIES

SA 7.1: Ensure that land uses within the vicinity of the Willows Airport are compatible with airport operations.

SA 7.2: Ensure that new development proposals do not result in encroachments into future airport expansion areas and do not result in adverse impacts to airport operations.

SA 7.3: Work cooperatively with the Airport Land Use Commission to ensure continued airport operations in a safe and cost-effective manner, consistent with the public's needs and applicable regulations from the Caltrans Division of Aeronautics and the Federal Aviation Authority (FAA).

LAND USE ELEMENT ACTIONS

LU-2e Refer all applications for development within the Willows Airport Area of Influence to the Airport Land Use Commission (ALUC) for comment.

SAFETY ELEMENT ACTIONS

SA-7a As part of the development review process, new development and expansion proposals near the Willows Airport shall be:

- *Reviewed for consistency with setbacks, land use restrictions, and height as determined by the Federal Aviation Administration (FAA) and the County Airport Land Use Commission;*
- *Provided to the Airport Land Use Commission for review.*

Impact 3.8-5: General Plan implementation has the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (Less than Significant)

The General Plan would allow a variety of new development, including residential, commercial, industrial, and public projects, which would result in increased jobs and population in Willows. Road and infrastructure improvements would occur to accommodate the new growth. Future development and infrastructure projects are not anticipated to remove or impede any established evacuation routes within the City. Furthermore, the General Plan does not include land uses, policies, or other components that conflict with adopted emergency response or evacuation plans. However, given that the type, location, and size of future development and infrastructure projects is not known at this time, there is the potential that the City could receive a development proposal that could potentially interfere with an established emergency evacuation route or plan.

According to the Glenn County Operational Area Emergency Operations Plan, Willows is a partner of the Glenn County Operation Area. This plan was developed as a joint project by the Glenn County Sheriff's Office – Office of Emergency Services (OES) and the cities of Orland and Willows. The plan development was funded by the Emergency Management Performance Grant program. This plan is based on the authority of the local government(s) for emergency response and contains specific emergency support functions to be provided during an emergency, disaster. This plan applies to all jurisdictions and agencies that operate within Glenn County. This plan delegates Glenn County Sheriff's Office – Office of Emergency Services the authority and responsibility for the coordination

and administration of emergency operations for the Operational Area of Glenn County. Any agency and jurisdiction within the Operational Area has the responsibility to develop and maintain plans, policies, and procedures pertaining to emergency and disaster response operations of their agencies and/or jurisdiction.

The General Plan includes a goal to enhance safety throughout the community by ensuring emergency preparedness. The General Plan ensures that the City's emergency access routes, emergency contact lists, and public information regarding designated facilities and routes are regularly reviewed to ensure that up to date information is available to the City and the public in the event of an emergency. Important new critical facilities would be located to ensure resiliency in the event of a natural disaster. Implementation of the proposed General Plan policies and actions listed below would result in a **less than significant** impact related to this topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

SAFETY ELEMENT POLICIES

SA 3.1: Ensure that new critical facilities are located in areas that minimize exposure to potential natural hazards.

SA 3.2: Promote ongoing training of City staff on their functions and responsibilities in disaster preparedness.

SA 3.3: Ensure that critical facilities are properly supplied and equipped to provide emergency services.

SA 3.4: Support local and regional disaster planning and emergency response planning efforts, and look for opportunities to collaborate and share resources with other municipalities in the region.

SA 3.5: Continue to promote public safety through public education programs.

SA 3.6: Maintain effective mutual aid agreements for police, fire, medical response, and other functions as appropriate.

SAFETY ELEMENT ACTIONS

SA-3a: Coordinate with the Glenn County Office of Emergency Services (OES) and other local agencies, as necessary, to participate in and implement the Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) for Glenn County.

SA-3b: Conduct periodic emergency response training exercises and or participate in regional exercises to ensure that key members, local leaders, and emergency response personnel are adequately trained and prepared for emergency situations. Critical facilities within Willows should also be annually assessed to ensure they are properly supplied.

SA-3c: Encourage residents and community leaders to participate in disaster training programs.

SA-3d: Provide signage at public buildings and critical facilities that contain Automated External Defibrillators (AEDs).

SA-3e: Develop and annually update an emergency contact list and emergency response information on the City's website. The information should include emergency access routes, available emergency resources, and contact information for emergency responders.

SA-3f: As part of the development review process, consult with the fire department in order to ensure that the project provides adequate emergency access.

SA-4d: Work with Glenn County and other partner agencies to review and update local hazard plans including emergency operation plans, and the Glenn County, CA Multi-Jurisdiction Hazard Mitigation Plan to include an analysis of evacuation routes, fire breaks and other community needs.

SA-4e: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster.

SA-4h: Review procedures for local implementation of the County Emergency Operations Plan (EOP) and help to educate the community on the need for emergency preparedness.

Impact 3.8-6: General Plan implementation has the potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires (Less than Significant)

Wildfires are a potential hazard to development and land uses located in the foothill and forested areas of the city. The severity of wildfire problems depends on a combination of vegetation, climate, slope, and people. Weather is one of the most significant factors in determining the severity of wildfires; natural fire patterns are driven by conditions such as drought, temperature, precipitation, and wind, and also by changes to vegetation structure and fuel (i.e., biomass) availability. In addition to natural factors such as lightning, human activity is a primary factor contributing to the incidence of wildfires. Campfires, smoking, debris burning, arson, public utility infrastructure, and equipment use are common human-related causes of wildfires.

A 2012 study (Bryant et al), suggested that an increase in wildfire risk to residential property will accompany climate change due to extra-urban growth and increased susceptibility of landscapes and vegetation to wildfire due to climate change. Fire risk increase rates are highly localized, and the City of Willows and the general vicinity is not categorized as an area where a high degree of increased fire threat from climate change is predicted, however the city may experience other local impacts from increased wildfires in surrounding areas including impacts to local air quality.

As shown in Figure 3.8-1, the City of Willows and general vicinity are not categorized as Fire Hazard Severity Zone by CalFire. Local Responsibility Areas (LRA) and State Responsibility Areas (SRA) are not found within the City limits and general vicinity. There are no Federal Responsibility Areas within the vicinity of the Planning Area.

Fire threat determinations is a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined to create four threat classes ranging from moderate to extreme. Fire threat can be used to estimate the potential for impacts on various assets and values susceptible to fire. Impacts are more likely to occur and/or be of increased severity for the higher threat classes. According to the State of California Fire Threat Map, the City of Willows is designated as having a no CalFire fire threat.

The proposed General Plan includes requirements for adequate water supply and water flow availability, ensuring adequate emergency access, adequate fire protection services, fire safe design site standards, and ensuring public awareness regarding fire safety. All future projects allowed under the General Plan would be required to comply with the provisions of Federal, State, and local requirements related to wildland fire hazards, including State fire safety regulations associated with wildland-urban interfaces, fire-safe building standards, and defensible space requirements. As future development and infrastructure projects are considered by the City, each project would be evaluated for potential impacts, specific to the project, associated with wildland fire hazards as required under CEQA. Therefore, through Implementation of the proposed General Plan policies and actions listed below along with compliance with state and federal requirements would result in **a less than significant impact** relative to this topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

SAFETY ELEMENT POLICIES

SA 4.1: Provide adequate funding for fire and law enforcement services, facilities and personnel to accommodate existing and future citizens' needs to ensure a safe and secure environment for people and property.

SA 4.2: Emphasize the use of physical site planning as an effective means of enhancing safety and preventing crime. Open spaces, landscaping, parking lots, parks, play areas and other public spaces should be designed with maximum feasible visual exposure to community residents.

SA 4.3: Ensure that fire and emergency medical services meet existing and future demand.

SA 4.4: Ensure that adequate water supplies are available for fire-suppression throughout the City.

SA 4.5: Support efforts to remedy any deficiencies in the water delivery system to ensure adequate fire-suppression flows.

SA 4.6: Require development to construct and fund all fire suppression infrastructure and equipment needed to provide adequate fire protection services.

SA 4.7: Promote fire safety through education and building design.

SA 4.8: Promote public outreach to increase community safety. Public outreach should include information related to defensible space and evacuation routes.

SA 4.9: Ensure development projects are reviewed for consistency with consistent with the Glenn County Multi-Jurisdiction Hazard Mitigation Plan.

SAFETY ELEMENT ACTIONS

SA-4a: As part of the development review process, consult with the Sheriff's Department in order to ensure that the project does not impair the provision of law enforcement services through inappropriate site design. The use of physical site planning as an effective means of preventing crime, including lighting, visibility, and video surveillance requirements shall be determined by the Department, where applicable.

SA-4b: As part of the development review process, consult with the Fire Department in order to ensure that development projects facilitate adequate fire services and fire prevention measures.

SA-4c: Continue to require all new development to be reviewed for consistency with the relevant State and local Fire Safe Regulations, and the most recently adopted fire code standards.

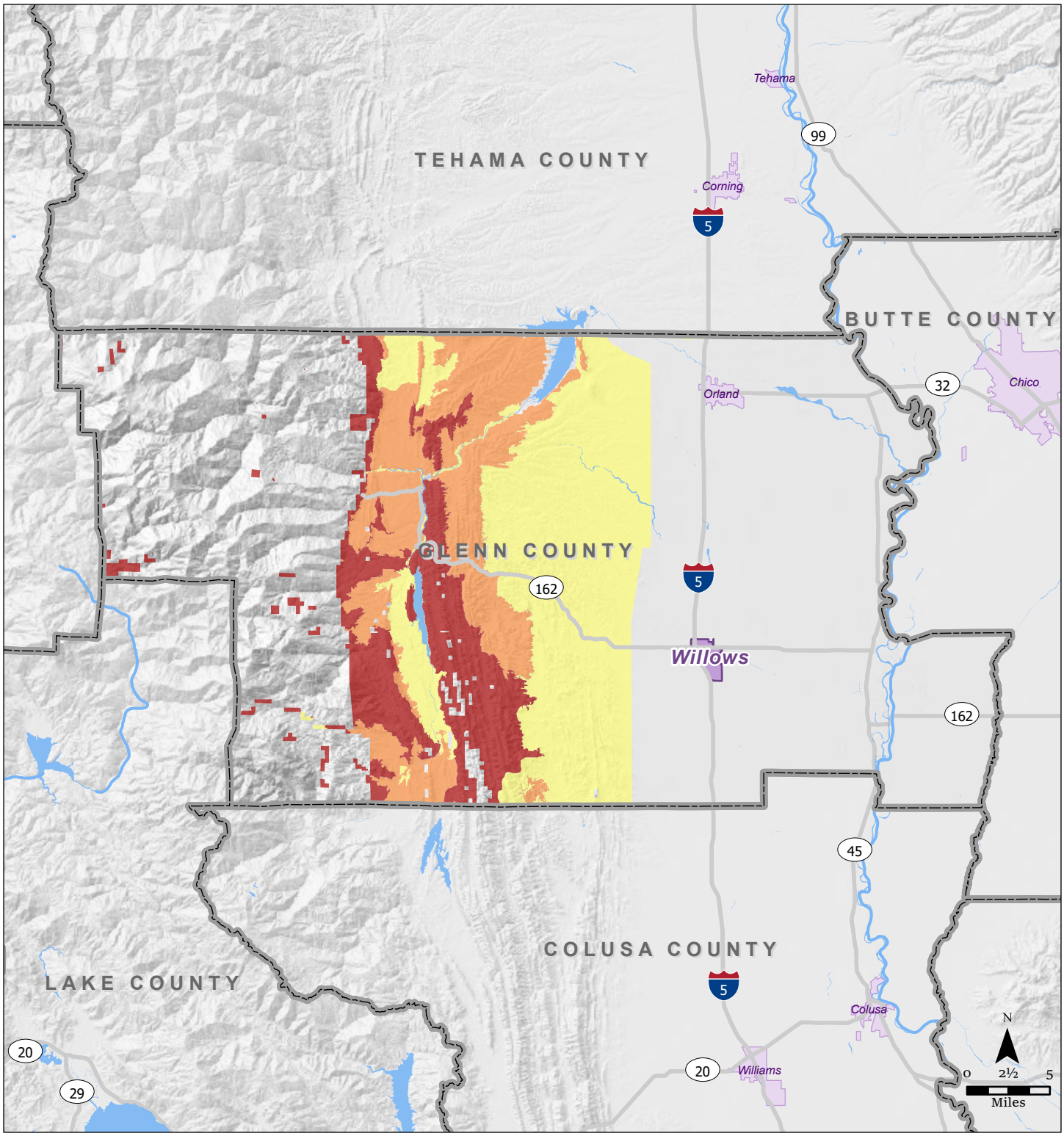
SA-4d: Work with Glenn County and other partner agencies to review and update local hazard plans including emergency operation plans, and the Glenn County, CA Multi-Jurisdiction Hazard Mitigation Plan to include an analysis of evacuation routes, fire breaks and other community needs.

SA-4e: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster

SA-4f: Promote cooperation between the Willows Fire Department, Willows Rural Fire Protection District, and other countywide fire districts for training and mutual aid.

SA-4g: Review and require all projects to adhere to Municipal Code requirements to ensure adequate safety services. These include but are not limited to Chapter 19.05 (Impact Fee Ordinance), which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 2.25 (Fire Department) describes the duties of the municipal fire department and the responsibilities of the fire chief in determining imminent health and safety hazards, and the powers associated with such a determination. Chapter 17.25 (Improvements) describes the requirements of a subdivider to provide and connect water mains and fire hydrants to Cal Water's water system.

SA-4h: Review procedures for local implementation of the County Emergency Operations Plan (EOP) and help to educate the community on the need for emergency preparedness.



Sources: California Department of Forestry and Fire Protection; Glenn County. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.8-1 FIRE HAZARD SEVERITY ZONE

Legend

- City of Willows
- Other Incorporated Area

Fire Hazard Severity Zones in State

- Moderate
- High
- Very High

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This section provides a background discussion of the regional hydrology, flooding, water quality, water purveyors, and water sources in Willows. This section is organized with an existing setting, regulatory setting, and impact analysis.

One comment was received during the NOP comment period related to this environmental topic. The CADFW provided comments related to the Lake and Streambed Alteration Programs. All comments are included in Appendix A of this DEIR. Information related to local and regional hydrological resources and water quality are included within this chapter. Hydrological information as it relate to biological resources are addressed in Chapter 3.4 (Biological Resources).

KEY TERMS

Groundwater: Water that is underground and below the water table, as opposed to surface water, which flows across the ground surface. Water beneath the earth's surface fills the spaces in soil, gravel, or rock formations. Pockets of groundwater are often called "aquifers" and are the source of drinking water for a large percentage of the population in the United States. Groundwater is often extracted using wells which pump the water out of the ground and up to the surface. Groundwater is naturally replenished by surface water from precipitation, streams, and rivers when this recharge reaches the water table.

Surface water: Water collected on the ground or from a stream, river, lake, wetland, or ocean. Surface water is naturally replenished through precipitation, but is naturally lost through evaporation and seepage into soil.

3.9.1 EXISTING SETTING

REGIONAL HYDROLOGY

Glenn County is located in the Sacramento River watershed. The Sacramento River runs north-south through the eastern part of Glenn County, forming its eastern boundary on its way to the Delta and San Francisco Bay. Many tributary streams flow from the mountains on both sides of the valley into the Sacramento River. The Sacramento River is the primary source of surface irrigation water in the County. The total length of the Sacramento River is approximately 327 miles and its drainage area encompasses approximately 27,200 square miles. For irrigation purposes, water from the river is diverted into two major canals, the Glenn-Colusa Canal and the Tehama-Colusa Canal. Stony Creek is also a predominant source of surface water, supporting two reservoirs within the County - Stony Gorge and Black Butte. Stony Creek is the second largest tributary on the west side of the Sacramento Valley; it merges with the Sacramento River south of Hamilton City. The Stony Creek watershed is 741 square miles and includes portions of Glenn, Colusa, and Tehama counties. The watershed is roughly divided into Upper Stony Creek and Lower Stony Creek, with Black Butte Reservoir forming the boundary. The majority of the upper watershed is publicly owned (Mendocino National Forest), while most (96%) of the lower watershed is privately owned agricultural land.

CLIMATE

The Sacramento Valley Air Basin (SVAB) has an inland Mediterranean climate, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. Sacramento Valley temperatures range from 20 to 115 degrees Fahrenheit and the average annual rainfall is 20 inches. The topographic features giving shape to the SVAB are the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. The predominant annual and summer wind pattern in the Sacramento Valley is the sea breeze commonly referred to as the "Delta breeze." These cool winds originate from the Pacific Ocean and flow through a sea-level gap in the Coast Range called the Carquinez Strait.

Glenn County has warm, dry days and relatively cool nights, with clear skies and limited rainfall. Winters are mild with light rains. In summer, high temperatures often exceed 100 degrees, with averages in the mid and high 90's. Summer low temperatures average in the high 50's.

WATERSHEDS

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 5.7-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.9-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	*APPROXIMATE SQUARE MILES (ACRES)*	*DESCRIPTION*
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

Hydrologic Region

The planning area is part of the Sacramento River Hydrologic Region.

The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles) of California. The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties, and small areas of Alpine and Amador counties. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains.

Hydrologic Unit

The Planning Area is within the Logan Creek and Willow Creek Hydrology Units (see Figure 3.9-1). The majority of the Planning Area is in the Logan Creek hydrologic unit, which covers approximately 6.11 square miles. The northern portion of the Planning Area is located in the Willow Creek hydrologic unit, which covers approximately 2.84 square miles.

Hydrologic Area

For purposes of planning on a city-wide basis, Hydrologic Areas are generally considered to be the appropriate watershed planning level. As a planning area becomes smaller the hydrologic area level may be too large in terms of scale, and a Hydrologic Subarea may be considered more appropriate. The Planning Area is located within the Willow Creek and Logan Creek Hydrologic Areas.

Hydrologic Sub-Area

Within the Willow Creek and Logan Creek Hydrologic Areas, the Planning Area is located within the North Fork Logan Creek and Willow Creek Hydrologic Sub-Areas.

CREEKS AND WATERWAYS

Major waterways in Willows include:

- Glenn-Colusa Canal;
- Wilson Creek;
- Willow Creek

The City of Willows Public Works Division is responsible for operating, maintaining, and improving the City's drainage and stormwater infrastructure, and facilities. Key areas of responsibility include the maintaining and improvements to streets, sewer, and storm drains. The City currently does not have an adopted storm drain master plan.

GROUNDWATER

The City of Willows is located within the Sacramento Valley Groundwater Basin.

The Sacramento Valley Groundwater Basin covers over 5,900 square miles and 10 counties, and has been divided into 18 subbasins. The California Department of Water Resources defines the following:

> "A groundwater basin is defined as an alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined features that significantly impede groundwater flow such as rock or sediments with very low permeability or a geologic structure such as a fault."
>
> "A subbasin is created by dividing a groundwater basin into smaller units using geologic and hydrologic barriers or, more commonly, institutional boundaries. These subbasins are created for the purpose of collecting and analyzing data, managing water resources, and managing adjudicated basins."

The City overlies the Sacramento Valley - Colusa Groundwater subbasin (DWR 2006). The Sacramento Valley – Colusa basin is a subbasin of the Sacramento Valley Groundwater Basin (DWR 2006) and the Sacramento River forms its eastern boundary; Stony Creek forms its northern boundary.

The Colusa Subbasin is a portion of the larger Sacramento Valley Groundwater Basin covering approximately 723,823 acres. The subbasin spans Glenn and Colusa Counties. It is generally bounded by Stony Creek to the north, the Coast Ranges to the west, to the east by the Sacramento River and the Reclamation District 1004 western boundary, and to the south by the Colusa-Yolo County boundary and the Colusa County Water District boundary. The Glenn Groundwater Authority (GGA) governs the Glenn County portion of the Colusa Subbasin and consists of nine member agencies, including the City of Willows (GGA acreage 286,154). According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2006), estimates of groundwater extraction for agricultural, municipal and industrial, and environmental wetland uses are 310,000, 14,000 and 22,000 acre-feet respectively. Deep percolation from applied water is estimated to be 64,000 acre-feet. The storage capacity of the subbasin was estimated based on estimates of specific yield for the Sacramento Valley. Estimates of specific yield, determined on a regional basis, were used to obtain a weighted specific yield conforming to the subbasin boundary. The estimated specific yield for the subbasin is 7.1 percent. The estimated storage capacity to a depth of 200 feet is approximately 13,025,887 acre-feet.

The Sustainable Groundwater Management Act (SGMA) passed in the fall of 2014, establishing a new structure for managing groundwater resources in California. The Department of Water Resources defines groundwater basins and subbasins and assigns a priority designation in relation to SGMA (High, Medium, Low, Very Low). High and Medium priority basins are required to be managed under SGMA by a Groundwater Sustainability Agency (GSA) or the State Water Resources Control Board. GSAs have the opportunity to manage groundwater at the local level by developing and implementing a Groundwater Sustainability Plan by 2022 and ensuring sustainable conditions by 2042 while avoiding six distinct undesirable results. If GSAs are not successful locally, the State Water Resources Control Board will intervene and assume responsibility for basin management. Glenn County has local GSA coverage and is currently compliant with SGMA.

GSAs will be working on the development of Groundwater Sustainability Plans (GSP) for the next several years. DWR has released the Groundwater Sustainability Plans and Projects Proposal Solicitation Package to allow agencies to apply for Proposition 1 grant funding to support GSP development and projects. GSAs within Glenn County are currently focused on applying for Proposition 1 grants for the development of GSPs within each subbasin to cover all areas within the County.

GSAs within Glenn County are currently focused on applying for Proposition 1 grants for the development of GSPs within each subbasin to cover all areas within the County. GSAs in the region are coordinating their Proposition 1 grant applications for GSP development in order to secure and maximize funding for shared subbasins.

Glenn County was also awarded a grant in 2016, as part of the Water Quality, Supply, and Infrastructure Improvement Act of 2014, (Sustainable Groundwater Planning Grant Program), administered by State of California, Department of Water Resources; in the amount of nearly $250,000 to complete a project supporting Sustainable Groundwater Management Activities. With the grant, Glenn County completed the Data Management and Hydrogeologic Conceptual Model Project (2016-2018) to support sustainable groundwater management activities. This Project includes the compilation of groundwater data, development of a groundwater data management system (DMS), creation of a water budget and hydrogeologic conceptual model (HCM), and ranking and scoring of groundwater-surface water modeling platforms. The data and models produced from this Project will be incorporated into one or more Sustainable Groundwater Management Act (SGMA) compliant Groundwater Sustainability Plans. The project concluded in July 2018.

Local Groundwater Resources

The Cal Water Willows District currently provides groundwater to the Willows service area. The District does not currently have surface water rights to support a conjunctive use. Water delivered by the District comes from local groundwater. The District operates seven groundwater wells, two storage tanks, and 36 miles of pipeline.

WATER QUALITY

Surface water quality is affected by point source and non-point source pollutants. Point source pollutants are those emitted at a specific point, such as a pipe, while non-point source pollutants are typically generated by surface runoff from diffuse sources, such as streets, paved areas, and landscaped areas. Point source pollutants are controlled with pollutant discharge regulations or WDRs. Non-point source pollutants are more difficult to monitor and control although they are important contributors to surface water quality in urban areas.

Stormwater runoff pollutants vary based on land use, topography, the amount of impervious surface, and the amount and frequency of rainfall and irrigation practices. Runoff in developed areas typically contains oil, grease, and metals accumulated in streets, driveways, parking lots, and rooftops, as well as pesticides, herbicides, particulate matter, nutrients, animal waste, and other oxygen-demanding substances from landscaped areas. The highest pollutant concentrations usually occur at the beginning of the wet season during the “first flush.”

303(d) Impaired Water Bodies: Section 303(d) of the Federal Clean Water Act requires states to identify waters that do not meet water quality standards or objectives and, thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the states to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within Glenn County which are considered Section 303(d) impaired waterbodies. The impaired water bodies are located within the Middle Butte Creek, Sacramento River, Colusa Drain, Upper Stony Creek, Middle Stony Creek, Lower Stony Creek, Walker Creek, Black Butte River, and Corbin Creek-Eel River hydrologic areas. These hydrologic areas extend beyond the county boundary so not all impaired water body segments are located within Glenn County. The pollution source is predominantly agricultural and crop related, although mercury, and resource extraction is also a pollution source. There are a few pollution sources that are not currently known.

FLOODING

Flooding is a temporary increase in water flow that overtops the banks of a river, stream, or overwhelms drainage channels and infrastructure to inundate adjacent areas not normally covered by water. Localized flooding may occur in low spots or where infrastructure is unable to accommodate peak flows during a storm event.

Flooding typically occurs within Willows due to two interrelated factors:

1. the overflow of major creeks and channels due to limited capacity in relation to flood flows; and

2. inadequate capacity of local drainage facilities.

The City of Willows has hot, dry, summers with cool winters, similar to Orland. The mean annual rainfall is approximately 19 inches. The mean annual rainfall in the drainage area of Willow Creek is approximately 20 inches. Storms causing flooding occur in the winter seasons, generally from December through February. Snowmelt is less of a factor, versus higher elevation and snow levels, in flooding in this area. Storms of 100-year frequency from the South Fork Willows Creek and Wilson Creek will pond north of the city limits and then flow south along Highway 99 and southeast along Willow Creek. The 100-year frequency flows from South Fork Willows Creek, Wilson Creek, and Walker Creek will also pond behind the levee of the Glenn Colusa Canal northeast of the City and flow southward, causing flooding between Ventura Street to the west, the Glenn Colusa Canal on the east, and Walnut Street on the south. Local drainage from direct runoff has been a problem in the City's eastern center and in areas north of French Street, between Butte and Lassen Streets. The existing storm drain system carries this flow into the Glenn Colusa Canal. These areas are both subject to 100-year storm frequency ponding or shallow flows from South Fork Willows Creek.

FEMA Flood Zones

FEMA mapping provides important guidance for the City in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The FEMA FIRM for the Planning Area is shown on Figure 3.9-2.

As shown on Figure 3.9-2, and Table 3.9-2 below, the City of Willows is subject to 100-year and 500-year flood events. The 100-year and 500-year flood plain is generally located within the southwestern, northern, and eastern portions of the City and SOI in areas near the Glenn-Colusa Canal and Willow Creek.

TABLE 3.9-2: FEMA DELINEATED FLOOD ZONES IN WILLOWS

FEMA Designation	*Acres within the City*	*Acres within the SOI*
100-yr Flood Zone	227	1,077
500-yr Flood Zone	270	881
Minimal Flood Hazard	1,315	1,955

SOURCE: FEMA MAP SERVICE CENTER, 2019.

Dam Inundation

Dam failure is the uncontrolled release of impounded water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, or sabotage can all cause a dam to fail. Dam failure can result in downstream flooding that can affect property and life. Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. A major dam failure event has not occurred in the Willows Planning Area or within Glenn County. A catastrophic failure of various dams in the region would have a significant impact on Glenn County. According to CalOES, there are six dams in Glenn County and four regional dams that could impact portions of Glenn County.

Figure 3.9-3, shows dam failure inundation areas that would be subject to inundation in the event of dam failure. As shown in Figure 3.9-3 a portion of northeast Willow would be subject to inundation from the Black Butte Dam.

Section 8589.5 of the California Government Code requires local jurisdictions to adopt emergency procedures for the evacuation of populated inundation areas identified by dam owners. The local Office of Emergency Services has prepared a Dam Failure Plan. This plan includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans.

3.9.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Board, and the Regional Water Quality

Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed project.

FEDERAL

Clean Water Act

The CWA, initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The CWA establishes the basic structure for regulating the discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) the authority to implement pollution control programs. The statute's goal is to regulate all discharges into the nation's waters and to restore, maintain, and preserve the integrity of those waters. The CWA sets water quality standards for all contaminants in surface waters and mandates permits for wastewater and stormwater discharges.

The CWA also requires states to establish site-specific water quality standards for navigable bodies of water and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The following CWA sections assist in ensuring water quality for the water of the United States:

CWA Section 208 requires the use of best management practices (BMPs) to control the discharge of pollutants in stormwater during construction CWA Section 303(d) requires the creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies, and preparation of plans to improve the quality of these water bodies. CWA Section 303(d) also establishes Total Maximum Daily Loads (TMDLs), which is the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards CWA Section 404 authorizes the US Army Corps of Engineers to require permits that will discharge dredge or fill materials into waters in the US, including wetlands.

In California, the EPA has designated the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) with the authority to identify beneficial uses and adopt applicable water quality objectives.

The SWRCB is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for storm water discharges (individual permits and general permits).

Federal Emergency Management Agency

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has

adopted as a desired level of protection, 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 in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the California Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Flood Control Act

The Flood Control Act (1917) established survey and cost estimate requirements for flood hazards in the Sacramento Valley. All levees and structures constructed per the Act were to be maintained locally but controlled federally. All rights of way necessary for the construction of flood control infrastructure were to be provided to the Federal government at no cost.

Federal involvement in the construction of flood control infrastructure, primarily dams and levees, became more pronounced upon passage of the Flood Control Act of 1936.

Flood Disaster Protection Act (FDPA)

The FDPA of 1973 was a response to the shortcomings of the NFIP, which were experienced during the flood season of 1972. The FDPA prohibited Federal assistance, including acquisition, construction, and financial assistance, within delineated floodplains in non-participating NFIP communities. Furthermore, all Federal agencies and/or federally insured and federally regulated lenders must require flood insurance for all acquisitions or developments in designated Special Flood Hazard Areas (SFHAs) in communities that participate in the NFIP.

Improvements, construction, and developments within SFHAs are generally subject to the following standards:

- All new construction and substantial improvements of residential buildings must have the lowest floor (including basement) elevated to or above the base flood elevation (BFE).
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE.
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns.
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

National Flood Insurance Program (NFIP)

Per the National Flood Insurance Act of 1968, the NFIP has three fundamental purposes: *Better indemnify individuals for flood losses through insurance; Reduce future flood damages through State and community floodplain management regulations; and Reduce Federal expenditures for disaster assistance and flood control.*

While the Act provided for subsidized flood insurance for existing structures, the provision of flood insurance by FEMA became contingent on the adoption of floodplain regulations at the local level.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, oceans, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the EPA Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWA.

NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). The Plan Area is in a watershed administered by the SFBRWQCB.

Individual projects in the City that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMP) the discharger would use to prevent and retain storm water runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Rivers and Harbors Appropriation Act of 1899

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

Water Pollution Control Act of 1972

The Water Pollution Control Act (WPCA) established a program to regulate activities that result in the discharge of pollutants to waters of the United States.

STATE

California Fish and Wildlife Code

The California Department of Fish and Wildlife (CDFW) protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Section 1600 to 1616 of the California Fish and Game Code. The California Fish and Game Code establishes that ”an entity may not substantially divert or obstruct the natural flow or substantially change 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” (Fish and Game Code Section 1602(a)) without notifying the CDFW, incorporating necessary mitigation and obtaining a streambed alteration agreement. The CDFWs jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Government Code

Relevant sections of the California Government Code are identified below.

SECTION 65302

Revised safety elements must include maps of any 200-year flood plains and levee protection zones within the Planning Area.

SECTION 65584.04

Any land having inadequate flood protection, as determined by FEMA or DWR, must be excluded from land identified as suitable for urban development within the planning area.

SECTION 8589.4

California Government Code §8589.4, commonly referred to as the Potential Flooding-Dam Inundation Act, requires owners of dams to prepare maps showing potential inundation areas in the event of dam failure. A dam failure inundation zone is different from a flood hazard zone under the National Flood Insurance Program (NFIP). NFIP flood zones are areas along streams or coasts where storm flooding is possible from a “100-year flood.” In contrast, a dam failure inundation zone is the area downstream from a dam that could be flooded in the event of dam failure due to an earthquake or other catastrophe. Dam failure inundation maps are reviewed and approved by the California

Office of Emergency Services (OES). Sellers of real estate within inundation zones are required to disclose this information to prospective buyers.

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund ("SRF") and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

Consumer Confidence Report Requirements

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminant levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Water Code

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the Regional Water Quality Control Boards (RWQCBs) power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a Water Quality Control Plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Assembly Bill 162

This bill requires a general plan's land use element to identify and annually review those areas covered by the general plan that are subject to flooding as identified by flood plain mapping

prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources (DWR). The bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the conservation element of the general plan to identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management. By imposing new duties on local public officials, the bill creates a State-mandated local program.

This bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the safety element to identify, among other things, information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives, based on specified information for the protection of the community from, among other things, the unreasonable risks of flooding.

Assembly Bill 70

This bill provides that a city or county may be required to contribute its fair and reasonable share of the property damage caused by a flood to the extent that it has increased the State's exposure to liability for property damage by unreasonably approving, as defined, new development in a previously undeveloped area, as defined, that is protected by a State flood control project, unless the city or county meets specified requirements.

Senate Bill (SB) 610 and Assembly Bill (AB) 901

The State Legislature passed SB 610 and AB 901 in 2001. Both measures modified the Urban Water Management Planning Act.

SB 610 requires additional information in an urban water management plan if groundwater is identified as a source of water available to an urban water supplier. It also requires that the plan include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water to the project and to request identified public water systems to prepare a specified water supply assessment. The assessment must include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and water received in prior years pursuant to these entitlements, rights, and contracts.

AB 901 requires an urban water management plan to include information, to the extent practicable, relating to the quality of existing sources of water available to an urban water supplier over given time periods. AB 901 also requires information on the manner in which water quality affects water management strategies and supply reliability. The bill requires a plan to describe plans to supplement a water source that may not be available at a consistent level of use, to the extent practicable. Additional findings and declarations relating to water quality are required.

Senate Bill 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds

Government Code Section 66473.7, establishing detailed requirements for establishing whether a "sufficient water supply" exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

State Updated Model Landscape Ordinance

Under Assembly Bill (AB) 1881, the updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance (MO). Chapter 9.146 of the Willows Municipal Code (Water Efficient Landscape Regulations) includes landscaping water use standards.

Urban Water Management Planning Act

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An "urban water supplier" is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier's water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Department of Water Resources must receive a copy of an adopted urban water management plan.

Central Valley Regional Water Quality Control Board Water Quality Control Plan (Basin Plan)

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), amended by the CVRWQCB in 2018, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins.

State and federal laws mandate the protection of designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Additional protected beneficial uses include groundwater recharge and freshwater replenishment.

State Water Resources Control Board (State Water Board) Storm Water Strategy

The Storm Water Strategy is founded on the results of the Storm Water Strategic Initiative, which served to direct the State Water Board's role in storm water resources management and evolve the Storm Water Program by a) developing guiding principles to serve as the foundation of the storm water program, b) identifying issues that support or inhibit the program from aligning with the guiding principles, and c) proposing and prioritizing projects that the Water Boards could implement to address those issues.

The State Water Board staff created a strategy-based document called the Strategy to Optimize Management of Storm Water (STORMS). STORMS includes a program vision, missions, goals, objectives, projects, timelines, and consideration of the most effective integration of project outcomes into the Water Board's Storm Water Program.

LOCAL

Glenn Groundwater Authority

The Glenn Groundwater Authority (GGA) is a nine-member, multi-agency Joint Powers Authority (JPA) that was formed on June 20, 2017. The GGA is the Groundwater Sustainability Agency (GSA) responsible for implementation of the Sustainable Groundwater Management Act (SGMA) in the Glenn County portion of the Colusa Subbasin (5-21.52). The Board of the GGA is composed of representatives of the following:

> *County of Glenn, City of Orland, City of Willows, Glenn-Colusa Irrigation District, Glide Water District, Princeton-Codora-Glenn/Provident Irrigation District (1 seat), Orland-Artois Water District, and Kanawha Water District formed with the primary purpose to comply with and implement SGM*

The Glenn Groundwater Authority was created by forming a Joint Exercise of Powers Agreement, signed by nine local agencies, with the purposes of being a Groundwater Sustainability Agency for the Glenn County portion of the Colusa Subbasin.

CalWater 2020 Urban Water Management Plan (UWMP) - Willows

The California Water Code requires all urban water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers (or supply more than 3,000 acre-feet of water annually) to prepare an Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP).

The plans describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation, and demand management activities. The components of a plan may vary according to an individual community or area's characteristics and its capability to efficiently use and conserve water. The plans address measures for residential, commercial, governmental, and industrial water demand management.

Sacramento Valley Regional Water Management Plan (RWMP)

The RWMP focuses on four subbasins, including the Colusa Subbasin, and addresses water supply and water use of participating water districts. The RWMP discusses regional water measurement programs; provides analysis of water management quantifiable objectives; and actions to implement and achieve quantifiable objectives. The geographic boundary of the area covered by the Sacramento Valley RWMP and served by the participating Sacramento River Settlement Contractors (SRSC) is the portion of the Sacramento River Basin from Shasta Dam to the Sacramento metropolitan area.

Colusa Subbasin Groundwater Sustainability Plan

The purpose of this GSP is to characterize groundwater conditions in the Subbasin, evaluate and report on existing conditions relating to the six sustainability indicators, describe existing monitoring, management programs and policies relating to groundwater resource use, document public outreach and communication, establish sustainability goals, and describe projects and management actions (PMAs) the GSAs will implement to achieve sustainable groundwater management within 20 years of implementing 17 the GSP (CCRs Title 23, Section 350.4 (f)).

Colusa Basin Watershed Management Plan (2012)

This Watershed Management Plan focuses on the following eight goals as identified by stakeholders and the Technical Advisory Committee (TAC):

1. Protect, maintain, and improve water quality.
2. Promote activities to ensure a dependable water supply for current and future needs.
3. Preserve agricultural land and open space.
4. Manage and reduce invasive plant populations.
5. Reduce destructive flooding.
6. Enhance soil quality and reduce erosion.
7. Preserve and enhance native habitat.
8. Address unknown future effects of climate change.

City of Willows Municipal Code

Chapter 15.65 of the Willows Municipal Code outlines the City's Floodplain Management Ordinance, and includes regulations to (a) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities; (b) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; (c) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters; (d) Control filling, grading, dredging, and other development which may increase flood damage; and (e) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
- 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 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 offsite;
    - 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.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Impact 3.9-1: General Plan implementation could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality or obstruct implementation of a water quality control plan (Less than Significant)

CONSTRUCTION-RELATED WATER QUALITY IMPACTS

Grading, excavation, removal of vegetation cover, and loading activities associated with future construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion impacts that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

As required by the Clean Water Act, each subsequent development project or improvement project will require an approved Storm Water Pollution Prevention Plan (SWPPP) that includes best management practices for grading and preservation of topsoil. A SWPPP is not required if the project will disturb less than one acre. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

Future development project applicants must submit the SWPPP with a Notice of Intent to the RWQCB to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities. The RWQCB accepts General Permit applications (with the SWPPP and Notice of Intent) after specific projects have been approved by the lead agency. The lead agency for each specific project that is larger than one acre is required to obtain a General Permit for discharge of storm water during construction activities prior to commencing construction (per the Clean Water Act).

Additionally the City's Design and Construction Standards requires a grading permit to be issued by the City of Willows Building Department prior to any grading activities. Grading Plans shall be prepared by or under the direction of a person licensed to perform civil engineering in the State of California and include erosion control measures.

The General Plan sets policies and actions for build-out of the City, but it does not envision or authorize any specific development project. Because of this, the site-specific details of potential future development projects are currently unknown and analysis of potential impacts of such projects is not feasible and would be speculative. However, each future project must include detailed project specific drainage and grading plans that control storm water runoff and erosion, both during and after construction. The RWQCB will require a project specific SWPPP to be prepared for each future project that disturbs an area one acre or larger. The SWPPP will include project specific best management measures that are designed to control drainage and erosion.

NEW DEVELOPMENT-RELATED WATER QUALITY IMPACTS

New development and infrastructure improvements projects allowed under the proposed General Plan could introduce constituents into the storm water system that are typically associated with urban runoff. These constituents include sediments, petroleum hydrocarbons, pesticides, fertilizers, and heavy metals such as lead, zinc, and copper. These pollutants tend to build up during the dry months of the year. Precipitation during the early portion of the wet season (generally from November to April) washes away most of these pollutants, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff is referred to as the "first flush" of storm events. Subsequent periods of rain would result in less concentrated pollutant levels in the runoff.

The majority of development allowed under the General Plan would be within areas currently developed with urban uses (as described in the Land Use Element and associated General Plan Existing Conditions Report), and the amount and type of runoff generated by various future development and infrastructure projects would be similar to existing conditions. However, new development and infrastructure projects have the potential to result in increases in the amount of impervious surfaces throughout Willows both within developed areas, and through the development of currently undeveloped areas and farmland conversion. Future increases in impervious surfaces would result in increased urban runoff, pollutants, and first flush roadway contaminants, as well as an increase in nutrients and other chemicals from landscaped areas. These constituents could result in water quality impacts to onsite and offsite drainage flows to area waterways.

Waters that are listed under Section 303(d) of the CWA are known as "impaired." The only impaired water body listed on the 2012 Section 303(d) list of impaired water in the vicinity of the Planning Area is Walker Creek. Walker Creek (Glenn County) is listed as Category 5 segment, which means it is a water segment where standards are not met and a total maximum daily load (TMDL) is required, but not yet completed, for at least one of the pollutants being listed for this segment. The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

Storm water runoff may play a role in the water quality impairments described above. 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. This storm water can carry pollutants that can enter the local waterways and result in the types of water quality impairments described above. Common sources of storm water pollution in the City include litter, trash, pet waste, paint residue, organic material (yard waste), fertilizers, pesticides, sediments, construction debris, metals from automobile brake pad dust, air pollutants that settle on the ground or attach to rainwater, cooking grease, illegally dumped motor oil, and other harmful fluids.

Due to future development and infrastructure projects, the overall volume of runoff in Willows could be increased compared to existing conditions. If the City's drainage system is not adequately designed, General Plan buildout could result in localized higher peak flow rates. Localized increases in flow would be significant if increases exceeded system capacity or contributed to bank erosion.

The General Plan sets policies and actions for build-out of the City, but it does not envision or authorize any specific development project. Because of this, the site-specific details of potential future development projects are currently unknown and analysis of potential impacts of such projects is not feasible and would be speculative. However, each future development and infrastructure project is required to prepare a detailed project specific drainage plan, Water Quality Management Plan (WQMP), and a Storm Water Pollution Prevention Plan (SWPPP) that will control storm water runoff and erosion, both during and after construction. If the project involves the discharge into surface waters the project proponent will need to acquire a Dewatering permit, NPDES permit, and Waste Discharge permit from the RWQCB and comply with all storm water sewer system (MS4) requirements.

As described above, under the Regulatory Setting, the City is required to implement a range of measures and procedures when reviewing new development and infrastructure projects.

> **Water Quality Control Plan for the Central Valley Region.** The Basin Plan includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

Sacramento Valley Regional Water Management Plan. The RWMP focuses on four subbasins, including the Colusa Subbasin, and addresses water supply and water use of participating water districts. The RWMP discusses regional water measurement programs; provides analysis of water management quantifiable objectives; and actions to implement and achieve quantifiable objectives. The geographic boundary of the area covered by the Sacramento Valley RWMP and served by the participating Sacramento River Settlement Contractors (SRSC) is the portion of the Sacramento River Basin from Shasta Dam to the Sacramento metropolitan area.

CalWater2020 Urban Water Management Plan (UWMP)- Willows. The plans describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation, and demand management activities. The components of a plan may vary according to an individual community or area's characteristics and its capability to efficiently use and conserve water. The plans address measures for residential, commercial, governmental, and industrial water demand management.

Compliance with existing City and County construction and stormwater management codes and other measures, as outlined above, would reduce these potential impacts related to stormwater quality. In addition, prior to the issuance of grading permits, each site developed under the proposed General Plan would be required to submit a SWPPP and storm drainage studies to the City for approval.

While the primary regulatory mechanisms for ensuring that future development and infrastructure projects do not result in adverse water quality impacts are contained in the Willows Municipal Code and the City's Design and Construction Standards, the City of Willows has developed the General Plan to include additional policies and actions that, when implemented, will further reduce water pollution from construction, new development, and new infrastructure projects, and protect and enhance natural storm drainage and water quality features. The policies and actions identified below include numerous requirements that would reduce the potential for General Plan implementation to result in increased water quality impacts. Actions by the City during the development review process require the review of development projects to identify potential stormwater and drainage impacts and require development to include measures to ensure that off-site runoff is not increased beyond pre-development levels during rain and flood events. In addition, compliance with the Clean Water Act and regulations enforced by the Regional Water Quality Control Board would ensure that construction-related impacts to water quality are minimized and future projects comply with all applicable laws and regulations.

Provision of stormwater detention facilities as needed would reduce runoff rates and peak flows. The General Plan policies and actions listed below include policies aimed to enhance stormwater quality and infiltration as well as actions to review development projects to identify potential stormwater and drainage impacts and require development to include measures to ensure off-site runoff is not increased beyond pre-development levels. Existing regulatory requirements that manage water quality, and implement the Sacramento Valley Integrated Regional Water Management Plan (Basin Plan) include requirements to obtain approval from the RWQCB for NPDES permits, other discharge permits, WQMPs, SWPPPs, and to implement Best Management Practices.

These regulatory requirements are intended to ensure that water quality does not degrade to levels that would violate water quality standards. Through implementation of the General Plan policies and actions listed below, implementation of the Willows Municipal Code requirements identified above, and compliance with mandatory Federal and State regulations would ensure that impacts to drainage patterns and water quality would be **less than significant**.

GENERAL PLAN POLICIES AND IMPLEMENTATION ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 10.2: Require discretionary projects, as well as new flood control and stormwater conveyance projects, to integrate best management practices (BMPs) and natural features to the greatest extent feasible, while ensuring that these features adequately convey and control stormwater to protect human health, safety, and welfare.

COS 10.3: Protect surface water quality and prioritize the use of natural features such as bioswales, vegetation, retention ponds, and other measures to remove surface water pollutants prior to discharge into surface waters.

COS 10.4: Promote water conservation among water users.

COS 10.6: Where feasible, encourage and support multipurpose detention basins that provide water quality protection, storm water detention, open space amenities, and recreational amenities.

COS 10.7: Monitor groundwater extraction activities and ensure the health of the groundwater basin.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-10a: Continue to identify stormwater and drainage facilities in need of repair and address these needs through the CIP process. As feasible seek to incorporate BMPs and LID techniques into repairs and upgrades that promote water quality objectives.

COS-10c: Participate in and collaborate with Glenn County, and other regional groundwater management agencies to support and promote Groundwater Sustainability Plans and implementation strategies for the groundwater basin.

Impact 3.9-2: General Plan implementation could result in the depletion of groundwater supplies or interfere substantially with groundwater recharge or conflict with a groundwater management plan (Less than Significant)

The City overlies the Sacramento Valley - Colusa Groundwater subbasin (DWR 2006). The Colusa Subbasin is a portion of the larger Sacramento Valley Groundwater Basin, covering approximately 723,823 acres. The subbasin spans Glenn and Colusa Counties. It is generally bounded by Stony Creek to the north, the Coast Ranges to the west, to the east by the Sacramento River and the Reclamation District 1004 western boundary, and to the south by the Colusa-Yolo County boundary and the Colusa County Water District boundary. The Glenn Groundwater Authority (GGA) governs

the Glenn County portion of the Colusa Subbasin and consists of nine member agencies, including the City of Willows (GGA acreage 286,154). According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2006), estimates of groundwater extraction for agricultural, municipal and industrial, and environmental wetland uses are 310,000, 14,000 and 22,000 acre-feet respectively. Deep percolation from applied water is estimated to be 64,000 acre-feet. The storage capacity of the subbasin was estimated based on estimates of specific yield for the Sacramento Valley. Estimates of specific yield, determined on a regional basis, were used to obtain a weighted specific yield conforming to the subbasin boundary. The estimated specific yield for the subbasin is 7.1 percent. The estimated storage capacity to a depth of 200 feet is approximately 13,025,887 acre-feet.

The primary surface water bodies through, or from, which imported waters are delivered to entities within the Subbasin include the Sacramento River and Stony Creek, with the Tehama-Colusa Canal and the Glenn Colusa Canal being the primary conveyances of Sacramento River water. The Glenn-Colusa Canal system is situated east of the Tehama-Colusa Canal and west of the Sacramento River. The Glenn-Colusa Canal originates on the Sacramento River north of the Subbasin and extends south of Williams, Colusa County, where it flows into the local canal system. The Glenn-Colusa Canal is operated by the Glenn-Colusa Irrigation District (GCID), located in Willows. GCID covers approximately 175,000 acres; of which, approximately 140,000 acres are farmed, making it the largest irrigation district in the Sacramento Valley (GCID, 2017). In addition to serving agricultural lands, GCID services approximately 1,200 acres of private habitat land and 20,000 acres of protected federal wildlife land. The main canal is approximately 65 miles long and conveys water into a complex system of nearly 1,000 miles of canals, laterals, and drains.

The primary sources of groundwater recharge in the Subbasin are deep percolation – the movement of water from land surface to the aquifer – of precipitation and applied water. Other volumetrically less important sources include deep percolation resulting from domestic and municipal uses. Much of the Subbasin is devoted to agriculture; many of the agricultural fields are irrigated with surface water supplies from the Tehama-Colusa Canal, the Glenn-Colusa Canal, and other irrigation water supply systems, which provide Sacramento River water from outside of the subbasin boundaries. Water applied to agricultural lands has a significant contribution to groundwater recharge.

The current groundwater storage volume within the Subbasin, above the crystalline basement rocks and base of freshwater, is estimated to be between about 26 million acre-feet (maf) and 140 maf based on an analysis using contouring of Spring 2020 groundwater levels, an average saturated thickness, and an assumed average specific yield range of 0.034 to 0.185, taken from Olmsted and Davis (1961). This range in groundwater storage volume reported in this GSP is low due the lack of groundwater elevation data within the upland areas of the subbasin and uncertainty regarding the depth to the base of freshwater. Recent groundwater modeling conducted to support development of this GSP suggests average specific yield values for the full saturated thickness in the subbasin (i.e., from the regional water table to the base of fresh water) fit within the range provided by Olmsted and Davis (1961).

Prior to the groundwater basin boundary modification process concluded by DWR in 2019, DWR Bulletin 118 estimated the aquifer storage capacity within the upper 200 feet of the Subbasin to be

approximately 13 maf (DWR, 2006a). The Subbasin at the time was bounded by Stony Creek to the north, Sacramento River to the east, Cache Creek to the south, and the uplands of Dunnigan Hills and the foothills of the Coast Ranges to the west. Currently, the Subbasin excludes the areas south of the Colusa-Yolo County boundary and includes a portion of the former West Butte Subbasin east of the Sacramento River within Colusa County. Taking into account the area of the current Subbasin extent and a specific yield estimate of 0.071 within the unconfined zone, as reported in Bulletin 118 (2006a), approximately 10.3 maf of storage capacity is estimated within the upper 200 feet of the current subbasin extent.

The average annual change in storage was -28 thousand acre-feet per year (taf/yr) over the historical water budget period of 1990 to 2015. This indicates that, on average, more groundwater has left the Subbasin than entered, resulting in an average net reduction in groundwater stored in the Subbasin. On average, the Subbasin's storage volume is influenced more by dry years than wet years. This is likely due to both a greater reliance on groundwater supply during dry years when surface water is less readily available and the relatively slow nature of deep percolation to recharge the groundwater system during wet years. Most of the groundwater inflows and outflows within the Subbasin are exchanged directly with the land and surface water system overlying the Subbasin groundwater system.

Domestic water service in the City of Willows, and the adjacent unincorporated area, is provided by the California Water Service Company (Cal Water), Willows District (District). The District operates seven groundwater wells, two storage tanks, and 36 miles of pipeline. From 2010 to 2015, the District delivered an average of 1.2 mg of water per day to more than 2,342 service connections. The 2020 Urban Water Management Plan prepared by Cal Water, contains many of the elements required by SGMA and thus already serves as a road map toward the implementation of SGMA for the District. Some of these components include actions to develop additional water supplies to maintain supply reliability, water quality, and recycled water. The City of Willows Water Department owns and operates a small water system just south of the District boundaries, south of Road 53, which consists of one well and three service connections.

According to 2020 Urban Water Management Plan, groundwater is the sole source of water supply for the Willows District. Cal Water does not impound or divert surface water as a means to meet demands in the Willows District. There are no plans to divert stormwater for beneficial uses in the Willows District. The District has a total of seven wells (four active, three standby) located within the District service area boundaries. There are two surface storage structures, enabling the groundwater wells to pump to storage during non-peak demand periods and provide peak day demand. The District has sufficient production capacity to supply all of the District's current annual average day and maximum day demand.

Table 3.9-3 lists the amount of groundwater pumped by Cal Water over the past five years. The available groundwater supply has been sufficient to meet all of the District's demands in the past five years and all prior years.

TABLE 3.9-3: GROUNDWATER VOLUME PUMPED FOR WILLOWS

Basin Name	2016	2017	2018	2019	2020
Colusa Subbasin	1,037	1,154	1,152	1,147	1,316
NOTES: (a) Volumes are in units of AF. (b) The Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of the UWMP statutes and regulations					

SOURCE: 2020 URBAN WATER MANAGEMENT PLAN.

Table 3.9-4 below illustrates Colusa Subbasin's projected water supplies for future years from 2025 to 2045.

TABLE 3.9-4: WATER SUPPLIES – PROJECTED FOR WILLOWS

Basin Name	2025	2030	2035	2040	2045
Colusa Subbasin	1,527	1,617	1,615	1,876	1,881
NOTES: (a) Volumes are in units of AF. (b) The Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of the UWMP statutes and regulations					

SOURCE: 2020 URBAN WATER MANAGEMENT PLAN.

As Shown in Table 3.9-4 and further discussed in Chapter 3.15, Utilities and Service Systems, the 2020 UWMP documents current and projects future water demands and supplies through 2045. Water supplies to meet future demands through groundwater pumping is identified to meet the City's needs through 2045.

As described in the UWMP, average water use per service is adjusted over the forecast period to account for anticipated reductions in water use due to the ongoing effects of appliance standards and plumbing codes, the District's conservation and customer assistance programs, and growth in the inflation-adjusted cost of water service and household income. These factors, in combination, are projected to somewhat attenuate the projected increase in water use associated with proposed new development. Despite the UWMP anticipating a 33 percent projected increase in service area population between 2000 and 2045, water use in 2045 is projected to be 4 percent less than total water use in 2000. The available water supply meets or exceeds the estimated buildout water demands. Thus, the City will have adequate water supply to serve the buildout of the proposed general plan land uses.

Groundwater levels in the Colusa Subbasin have declined year-over-year during below average, dry or critically dry years due to reduced net recharge. For example, during the single dry water year of 2013, groundwater levels declined in all four wells that had data spanning this period, and similarly during the multiple dry water year period from 1987 through 1991 groundwater levels declined in all wells with data during that period.

On the other hand, groundwater levels have increased from previous lows during above normal and wet years due to relatively higher net recharge. For example, in water year 1986 (which represents normal water year conditions), groundwater levels increased in the two wells that had data spanning that year. This pattern of water level increases during climatically wet periods (e.g., as occurred during the multi-year wet periods from 1982-1984 and 1995-1998, and single wet years such as 2006 and 2011) indicates that the Basin is able to recover from dry periods and that Basin-wide pumping can increase in times of need to meet increased demands without detriment to the long-term sustainability of the groundwater system.

An average rate of change in groundwater level of approximately -0.4 ft/yr has been observed historically in Cal Water supply wells serving the Willows District (i.e., approximately -10 feet of decline over 24 years from 1990 through 2015 to average depths of approximately 35 feet below ground surface), changes that have been manageable to date, even considering the recent, historic drought. Well depth data from DWR indicate that the minimum public supply well depth in Public Land Survey System (PLSS) sections in and around the Willows District is 250 feet, suggesting that these public supply wells are not at risk of dewatering, even if current trends continue.

The majority of groundwater pumping in the Colusa Subbasin is for agricultural use. From a regional and Basin-wide standpoint, Willows District pumping is only a small fraction of total groundwater pumping. Average annual groundwater pumping from 2000 through 2015 in the Glenn County portion of the Colusa Subbasin totaled approximately 220,064 AFY, including approximately 213,150 AFY for irrigated agriculture and 6,914 AFY for Municipal & Industrial (M&I) use. These data show that M&I pumping accounted for approximately three percent of total pumping in the Basin. It is therefore likely that management of agricultural groundwater use, rather than M&I use, will be a much larger determining factor in achieving and maintaining groundwater sustainability in the Colusa Subbasin in the future.

The UWMP indicates that the estimated pumping rates by the Willows District are not anticipated to create significant and unreasonable rates of chronic groundwater level declines in the Colusa Subbasin especially given that M&I pumping remains such a small fraction of total Basin pumping and that projected District demands are within historical levels of pumping. Further, based on the analysis presented herein, the Colusa Subbasin groundwater supply is estimated to be sufficient to support the District's projected demand over the next 20 years in normal, single dry, and multiple dry year hydrologic conditions without causing significant and unreasonable effects on groundwater levels and storage. Thus, available supply in future years is considered to be equal to the projected demands.

Subsequent development projects under the General Plan, such as residential, commercial, industrial, and roadway projects would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. The amount of new pavement and impervious surfaces, and the extent to which they affect infiltration, depends on the site-specific features and soil types of a given project site. Projects located in developed areas would have less of an impact than projects converting open lands and spaces.

Given that implementation and future buildout of the proposed General Plan would not appreciably add to the volume of imperious surfaces in Willows or the Colusa Subbasin Recharge Area, when compared to the overall size of the regional groundwater basin recharge area, and that there are adequate water supplies (including groundwater) to serve the projected buildout demand of the General Plan, this potential impact would be **less than significant**.

The General Plan includes policies that support water conservation, the use of permeable surfaces and coordination with local agencies and water districts when planning for adequate capacity to accommodate future growth. Specifically General Plan Action COS-10c: calls on the City to participate in and collaborate with Glenn County, and other regional groundwater management agencies to support and promote Groundwater Sustainability Plans and implementation strategies for the groundwater basin.

The General Plan and development codes are consistent with local Groundwater Management Plans and promote collaboration and conservation of resources throughout the Planning Area that benefit and promote groundwater resources. Implementation of the following General Plan policies would further ensure that the General Plan would have a **less than significant** impact relative to this topic.

GENERAL PLAN POLICIES AND IMPLEMENTATION ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 10.1: Protect floodways and other areas with high groundwater water recharge capability.

COS 10.4: Promote water conservation among water users.

COS 10.5: Support and promote the use of drought-tolerant and regionally native plants in landscaping.

COS 10.7: Monitor groundwater extraction activities and ensure the health of the groundwater basin.

PUBLIC SAFETY ELEMENT POLICIES

SA 1.6: Prevent land subsidence and maintain adequate groundwater supplies.

SA 2.6: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of drainages, creeks, and detention ponds. Where appropriate and feasible, encourage the use of water detention facilities for use as groundwater recharge facilities.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-10b: Collaborate with water suppliers and wastewater treatment plant operators to increase the availability of treated or recycled water for agricultural purposes.

COS-10c: Participate in and collaborate with Glenn County, and other regional groundwater management agencies to support and promote Groundwater Sustainability Plans and implementation strategies for the groundwater basin.

PUBLIC SAFETY ELEMENT ACTIONS

SA-1e: Monitor withdrawal of groundwater, oil, and gas, maintain land elevation records, and regulate overdraft to prevent subsidence.

Impact 3.9-3: General Plan implementation could alter the existing drainage pattern in a manner which would result in substantial erosion, siltation, flooding, impeded flows, or polluted runoff (Less than Significant)

General Plan implementation has the potential to impact the Planning Area's storm drainage system. The potential impacts would be primarily derived from development in what are now underdeveloped and/or underutilized areas, which could affect the existing drainage patterns.

The City is within the jurisdictional boundary of the CVRWQCB. Under the CVRWQCB NPDES permit system, all existing and future municipal and industrial discharges to surface water within the city would be subject to regulation. NPDES permits are required for operators of municipal separate storm sewer systems, construction projects, and industrial facilities. These permits contain limits on the amount of pollutants that can be contained in each facility's discharge.

Construction activities are regulated by the NPDES General Construction Storm Water Permit. Compliance with the storm water permit during construction activities requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) that contains BMPs to control the discharge of pollutants, including sediment, into local surface water drainages.

In addition to complying with the NPDES programs, the General Plan contains policies and actions to reduce impacts associated with stormwater and drainage including policies to maintain sufficient levels of storm drainage service, improvements to flood control facilities, and other best practices in order to protect the community from flood hazards, and minimize the discharge of materials into the storm drain system that are toxic, or which could obstruct flows. Additionally, the General Plan policies encourage that stormwater be directed towards permeable surfaces, incorporate stormwater capture, and promote BMPs and Low Impact Development measures (LID) to treat stormwater.

Individual future projects allowed under the General Plan would create new impervious surfaces. This may result in an incremental reduction in the amount of natural soil surfaces available for infiltration of rainfall and runoff, potentially generating additional runoff during storm events. In addition, the increase in impervious surfaces, along with the increase in surface water runoff, could increase the non-point source discharge of pollutants. Anticipated runoff contaminants include sediment, pesticides, oil and grease, nutrients, metals, bacteria, and trash. Contributions of these contaminants to stormwater and non-stormwater runoff would degrade the quality of receiving waters. During the dry season, vehicles and other urban activities release contaminants onto the impervious surfaces, where they can accumulate until the first storm event. During this initial storm event, or first flush, the concentrated pollutants would be transported via runoff to stormwater drainage systems. Contaminated runoff waters could flow into the stormwater drainage systems that discharge into rivers, agricultural ditches, sloughs, and channels, and ultimately could degrade the water quality of any of these water bodies.

The General Plan sets policies and actions for build-out of the City, but it does not envision or authorize any specific development project. Because of this, the site-specific details of potential future development projects are currently unknown and analysis of potential impacts of such projects is not feasible and would be speculative. As previously discussed in the Regulatory Setting section of this chapter, future project applicants would be required to obtain permits from the Army Corps of Engineers and the Department of Fish and Wildlife if any work is performed within a waterway. Each future development project must also include detailed project specific floodplain and drainage studies consistant with the City's Storm Drainage Design Standards that assess the drainage characteristics and flood risks so that an appropriate improvements to control storm water runoff, both during and after construction. Construction of storm drainage improvements would occur as part of an overall development or infrastructure project, and is considered in the environmental impacts associated with project construction and implementation as addressed throughout this EIR.

Provision of stormwater detention facilities as needed would reduce runoff rates and peak flows. The City has developed the General Plan to include policies and actions that, when implemented, will reduce flooding from new development, reduce storm water pollution from new development, and protect and enhance natural storm drainage and water quality features, which will in turn reduce water quality impacts. As described previously, existing regulatory requirements including NPDES and Waste Discharge permits from the RWQCB and implementation of BMPs manage quality. Through implementation of the General Plan policies and actions listed below, implementation of the Willows Municipal Code, and Design and Construction Standards requirements identified above, and compliance with mandatory Federal and State regulations would ensure that impacts related to increased flooding or water quality impacts associated with increased runoff would be **less than significant**.

GENERAL PLAN POLICIES AND IMPLEMENTATION ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

*LU 2.9: Ensure that the impacts from flooding are adequately analyzed when considering development in flood prone areas.*Conservation and Open Space Element Policies

COS 9.9: Work with agricultural landowners to improve practices that have resulted in adverse impacts to adjacent properties such as site drainage and flood control measures.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-10a: Continue to identify stormwater and drainage facilities in need of repair and address these needs through the CIP process. As feasible seek to incorporate BMPs and LID techniques into repairs and upgrades that promote water quality objectives.

PUBLIC SAFETY ELEMENT POLICIES

SA 2.2: Require all new development projects to demonstrate how storm water runoff will be detained or retained on-site, treated, and/or conveyed to the nearest drainage facility as part of the

development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities that would exceed the design capacity of the drainage facility or result in an increased potential for off-site flooding.

SA 2.3: Ensure that construction activities and new development projects will not result in adverse impacts to existing properties and flood control and drainage structures.

SA 2.5: Require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources Urban Level of Flood Protection Criteria (ULOP). The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.

SA 2.8: Ensure that any development activity that requires a grading permit does not impact adjacent properties, local creeks and storm drainage systems by designing and building the site to drain properly to minimize drainage issues and erosion.

SA 2.9: Ensure that new development or and infrastructure improvements does not compound the potential for flooding.

SA 2.11: Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

LAND USE ELEMENT ACTIONS

LU-2c: Implement the policies and actions included in the Safety Element to protect life and property from impacts associated with flooding.

PUBLIC SAFETY ELEMENT ACTIONS

SA-2a: As part of the development review process require new development projects to prepare hydraulic and storm drainage studies as necessary to define the net increase in storm water run-off resulting from construction and require mitigation to reduce impacts. Drainage and grading plans shall identify BMP protections and include standards established and recommended by the City that shall be incorporated into development.

Impact 3.9-4: General Plan implementation would not release pollutants due to project inundation by flood hazard, tsunami, or seiche (Less than Significant)

FLOOD

The Planning Area is subject to flooding problems along the natural creeks, and drainages in the Planning Area. The FEMA FIRM for the Planning Area is shown on Figure 3.9-2. As shown in Figure 3.9-2, the City of Willows contains areas within the 1% annual chance flood hazard zone (100-year flood), the 0.2% annual chance flood hazard zone (500-year flood), and areas of minimal flood hazard. The major source of flooding is Glenn-Colusa Canal. Local drainage systems may also contribute to flood risk, but are not evaluated or mapped by FEMA. In addition, portions of the City may be at risk of inundation from upstream dam failure, with very little warning time. Future flooding trends may also be influenced by changes in the frequency and magnitude of precipitation and storm surge due to climate change.

The General Plan would allow development and improvement projects that would involve some land clearing, grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. As required by the CWA, each subsequent development project or improvement project will require an approved SWPPP that includes best management practices for grading and preservation of topsoil. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

The City is a participant in the National Flood Insurance Program (NFIP). The NFIP provides property owners and renters with federally backed flood insurance, reduces flood damage through a mandatory local floodplain management ordinance, and identifies and maps flood hazards. The NFIP requires the City to maintain a floodplain management ordinance based upon current FEMA Flood Insurance Rate Maps (FIRMs). The City's meets this requirement through the implementation of Floodplain Management Regulations specified in Chapter 15.65 of the Willows Municipal Code. The General Plan would allow development and improvement projects that would involve some land clearing, grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. As required by the Clean Water Act, each subsequent development project or improvement project will require an approved Storm Water Pollution Prevention Plan (SWPPP) that includes best management practices for grading and preservation of topsoil. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

In addition to complying with the NPDES programs and stormwater requirements, the General Plan contains policies to reduce impacts associated with stormwater and drainage including policies to maintain sufficient levels of storm drainage service, improvements to flood control facilities and channel segments, and other best practices in order to protect the community from flood hazards and minimize the discharge of materials into the storm drain system that are toxic. The implementation of the General Plan would result in a **less than significant impact** relative to this topic.

TSUNAMI AND SEICHES

Tsunamis and seiches are standing waves that occur in the ocean or relatively large, enclosed bodies of water that can follow seismic, landslide, and other events from local sources (California, Oregon, Washington coast) or distant sources (Pacific Rim, South American Coast, Alaska/Canadian coast).

The Department of Conservation, California Emergency Management Agency, and California Geological Survey (CGS) prepare Tsunami Inundation Maps to note tsunami hazards areas throughout California. According to CGS's Tsunami Inundation Maps, there are no tsunami inundation areas for emergency planning in the nearby vicinity of the Planning Area.

Seiches are typically caused when strong winds and rapid changes in atmospheric pressure push water from one end of a body of water to the other. When the wind stops, the water rebounds to the other side of the enclosed area. The water then continues to oscillate back and forth for hours or even days. In a similar fashion, earthquakes, tsunamis, or severe storm fronts may also cause seiches along ocean shelves and ocean harbors, or other bodies large of water. Any body of water may experience limited oscillation during storm events or following seismic events, however oscillation in small bodies of water is generally limited. In smaller water bodies seiches may have the potential to damage or overtop dams. Generally, in lakes the threat of large-scale damage from seiches comes from downstream flooding that would be caused by large volumes of water overtopping a dam or reservoir.

As shown on Figure 3.9-3, the Black Butte Dam Inundation Area is the only dam inundation area that could impact the Planning Area. A portion of northeast Willow would be subject to inundation from the Black Butte Dam. The Black Butte Dam does not have a history of dam failure; however, it is identified as having the potential to inundate habitable portions of the Planning Area in the unlikely event of dam failure.

Section 8589.5 of the California Government Code requires local jurisdictions to adopt emergency procedures for the evacuation of populated inundation areas identified by dam owners. The local Office of Emergency Services has prepared a Dam Failure Plan. This plan includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans. As such, the City is not at significant risk from a dam failure. In addition, limited isolated damage to adjacent and down-slope structures has been observed from seiches occurring in swimming pools and in small shallow lakes and ponds. Man-made lakes within the Planning Area are shallow with limited surface areas, and would not generate devastating seiches. The City of Willows is not within a tsunami hazard area and would not be subject to substantial impacts from seiche events. This is a **less than significant** impact.

GENERAL PLAN POLICIES AND IMPLEMENTATION ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU-2.9: Ensure that the impacts from flooding are adequately analyzed when considering development in flood prone areas.

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 9.9: Work with agricultural landowners to improve practices that have resulted in adverse impacts to adjacent properties such as site drainage and flood control measures.

COS 10.2: Require discretionary projects, as well as new flood control and stormwater conveyance projects, to integrate best management practices (BMPs) and natural features to the greatest extent feasible, while ensuring that these features adequately convey and control stormwater to protect human health, safety, and welfare.

PUBLIC SAFETY ELEMENT POLICIES

SA 2.1: Support and participate in planning efforts undertaken at the local, regional, State, and Federal levels to improve flood management facilities and dam safety.

SA 2.3: Ensure that construction activities and new development projects will not result in adverse impacts to existing properties and flood control and drainage structures.

SA 2.4: Unless otherwise mitigated, require new structures to be located outside of the 100-year floodplain. All new development within an identified Flood Hazard Area shall be built according to Federal Emergency Management Agency standards.

SA 2.5: Require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources Urban Level of Flood Protection Criteria (ULOP). The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.

SA 2.6: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of drainages, creeks, and detention ponds. Where appropriate and feasible, encourage the use of water detention facilities for use as groundwater recharge facilities.

SA 2.7: Encourage flood control measures that respect natural drainage features, vegetation, and natural waterways, while still providing for adequate flood control and protection.

SA 2.10: Maintain and periodically update, City flood safety plans, floodplain management ordinances, zoning ordinance, building codes and other related sections of the Municipal Code to reflect Safety Element goals, policies and standards, applicable Federal and State law, and National Flood Insurance Program requirements.

SA 2.11: Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

SA 2.12: Update flood hazard maps as necessary to reflect impacts from climate change in terms of long‐term flood safety and long‐term flood event probabilities.

LAND USE ELEMENT ACTIONS

LU-2d: When updated flood plain maps are prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources (DWR), review the Land Use Map to identify any potential safety impacts associated with residential land uses located within flood zones.

LU-2g: As part of project review, ensure that structures are reviewed for potential flood impacts. In areas that are subject to 100-year flood events, provide adequate protection in accordance with FEMA flood plain development standards.

LU-7a: Review all development proposals, planning projects, and infrastructure projects to ensure that potential adverse environmental impacts to disadvantaged communities, such as exposure to pollutants, including toxic air contaminants, flood risk, and unacceptable levels of noise and vibration are reduced impacts to the greatest extent feasible.

PUBLIC SAFETY ELEMENT ACTIONS

SA-2b: Continue to participate in the National Flood Insurance Program (NFIP), and consider future participation in the NFIP Community Rating System (CRS).

SA-2c: Continue to review projects in flood hazard areas to ensure compliance with Municipal Code Chapter 15.65 (Floodplain Management).

SA-2d: Periodically review the conditions of bridges, culverts, canals and other flood control and stormwater conveyance infrastructure, and when feasible include necessary improvements within the CIP to increase safety and the adequate conveyance of stormwater.

SA-2e: Monitor changes in Federal and State laws and regulations related to local flood protection, including the National Flood Insurance Program and incorporate necessary changes into the Municipal Code, the City's Emergency Operations Plan, and building codes as required and ensure that the City's regulations continue to require that new development within flood hazard zones is consistent with this Safety Element and is required to meet the flood protection requirements of State law, including but not limited to Government Code Sections 65007, 65865.5, 65962 and 66474.5.

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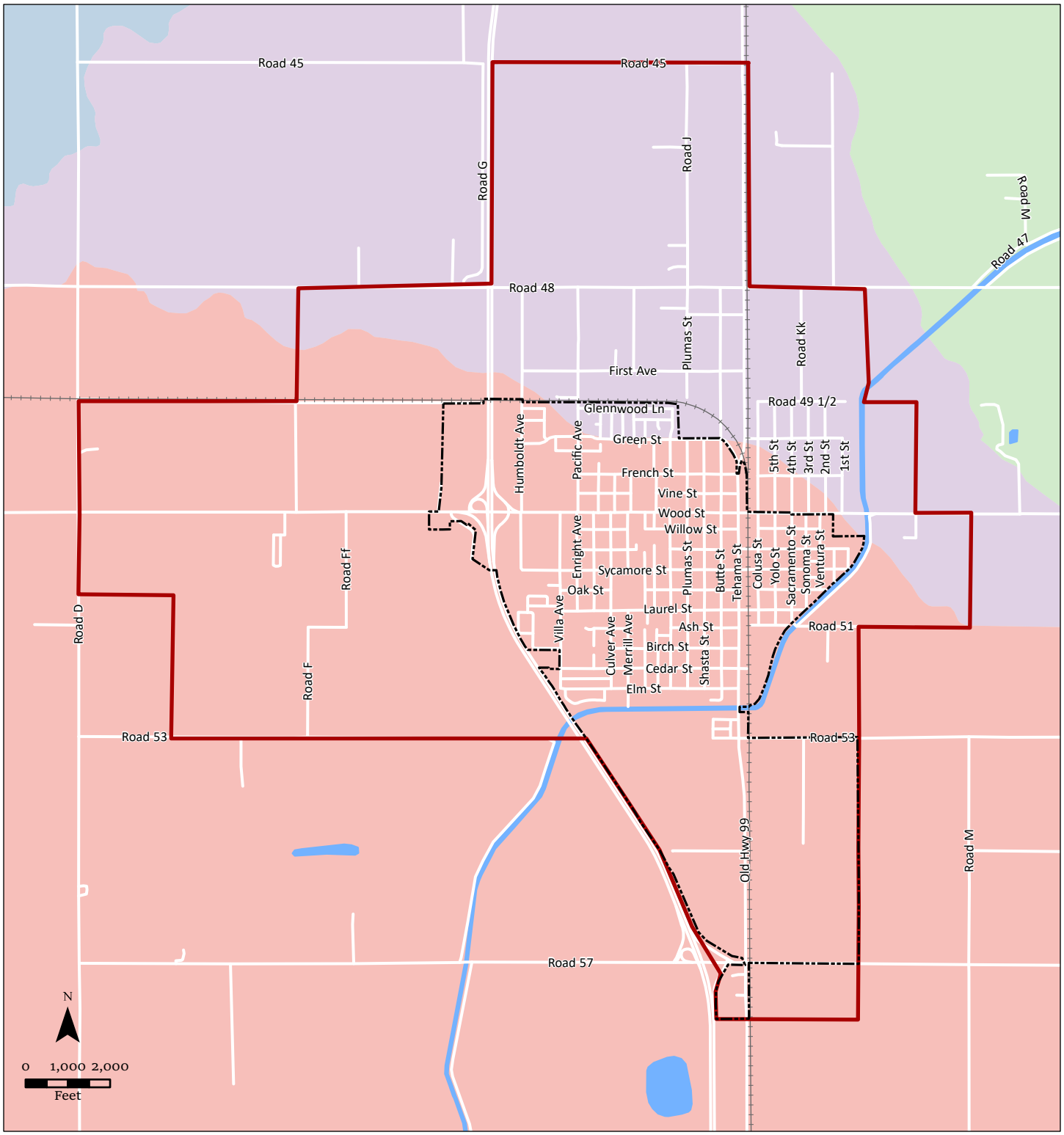

Sources: USGS Watershed Boundary Dataset; USGS National Hydrography Dataset; Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.9-1 WATERSHEDS

Legend

- City of Willows
- Willows Sphere of Influence

Watersheds

- Logan Creek
- South Fork Willow Creek
- Walker Creek
- Willow Creek

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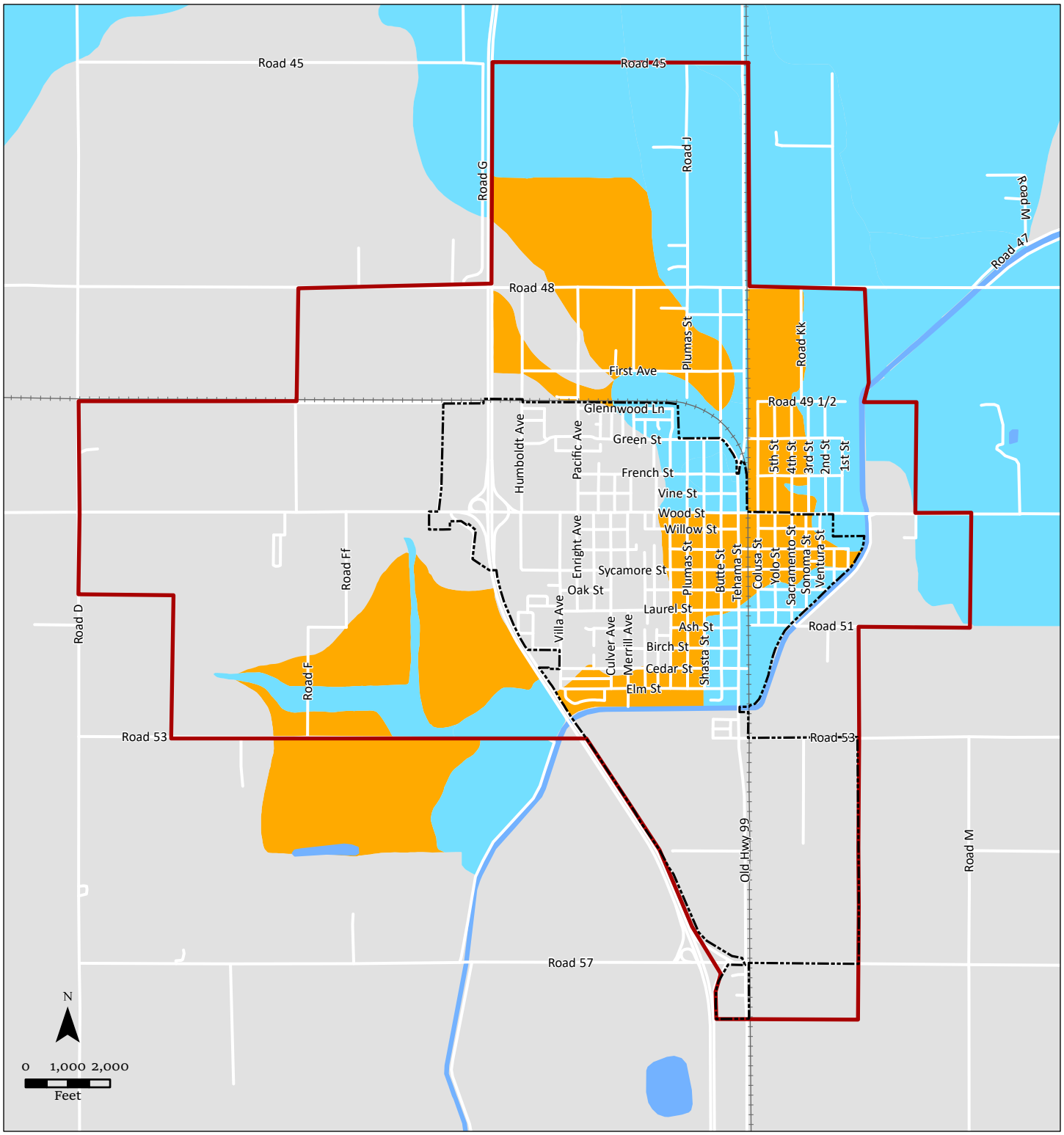

Sources: ArcGIS Online Service; Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.9-2 FEMA FLOOD ZONE DESIGNATIONS

Legend

- City of Willows
- Willows Sphere of Influence

FEMA Designation

- 100-year Flood Zone
- 500-year Flood Zone
- Area of Minimal Flood Hazard

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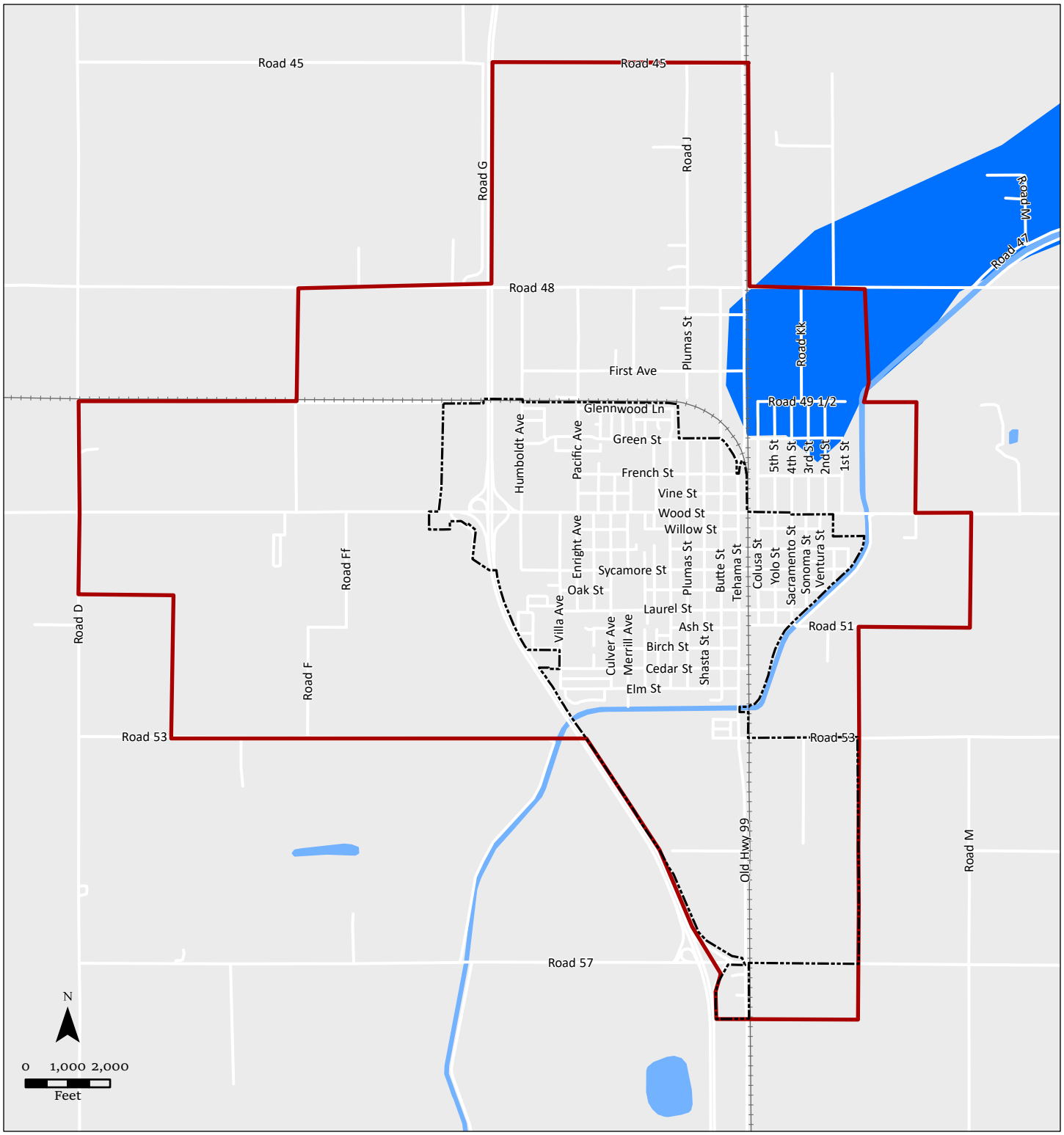

Sources: ArcGIS Online Service; Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.9-3 DAM INUNDATION AREA

Legend

- City of Willows
- Willows Sphere of Influence
- Black Butte Dam Inundation Area

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This section identifies the existing land use conditions, discusses population and housing trends and projections, and analyzes the Project's consistency with relevant planning documents and policies adopted for the purpose of avoiding or mitigating an environmental effect. General Plan policies associated with other specific environmental topics are discussed in the relevant sections of this EIR.

No comments on this environmental topic were received during the NOP comment period.

3.10.1 ENVIRONMENTAL SETTING

EXISTING CONDITIONS

The City Limits includes the area within the City's corporate boundary, over which the City exercises land use authority and provides public services. A City's Sphere of Influence (SOI) is the probable physical boundary and service area of a local agency, as adopted by a Local Agency Formation Commission (LAFCO). An SOI may include both incorporated and unincorporated areas within which a city or special district will have primary responsibility for the provision of public facilities and services. For the purposes of the Willows General Plan Update, the Planning Area is defined as the area within the City's SOI/City Boundary that is included in the analysis and planning for the approximate 20-year horizon of the City's General Plan Update.

Land Use Patterns

When discussing land use, it is important to distinguish between planned land uses and existing land uses. The General Plan land use designations identify the long-term planned use of land, but may not present a complete picture of existing land uses. The Glenn County Assessor's office maintains a database of existing (assessed) land uses on individual parcels, including and estimated number of dwelling units and related improvements such as non-residential building square footage. This information is used as the basis for property tax assessments and is summarized in Table 3.10-1 and depicted on Figure 3.10-1. It is noted, however, that information available from the Assessor's office may be incomplete or out-of-date. For example, the California Department of Finance and the U.S. Census ACS estimate over 2,400 housing units within the Willows City Limits, while the Assessor's office estimates approximately 2,100 housing units.

TABLE 3.10-1: ASSESSED LAND USES – WILLOWS

*Assessor Land Use Code**	*Residential Units*	*NON-RES SQ FT*	*Acres (Gis)*	*% of Area*
Willows City Limits				
Agricultural	0	0	173.81	11.9%
Commercial	0	1,023,109	208.48	14.3%
Governmental	0	62,876	7.47	0.5%
Institutional	0	89,059	17.72	1.2%
Professional	0	40,741	4.62	0.3%
Recreational	0	3,648	0.65	0.0%
Residential	2,097	-	480.29	33.0%
Exempt/ROW/No Match	0	0	563.13	39%

*Assessor Land Use Code**	*Residential Units*	*NON-RES SQ FT*	*Acres (Gis)*	*% of Area*
Willows City Limits				
City Limits Total	**2,097**	**1,219,433**	**1,456.17**	**100.0%**
Willows SOI				
Agricultural	0	8,916	2,323.27	64.3%
Commercial	0	125,748	88.23	2.4%
Industrial	0	-	6.95	0.2%
Institutional	0	17,295	6.01	0.2%
Residential	545	0	540.74	15.0%
Exempt/ROW/No Match	**0**	**0**	649.96	18.0%
SOI Total	**545**	**151,959**	**3,615.15**	**100.0%**
Grand Total	**2,642**	**1,371,392**	**5,071.31**	**100.0%**

*NOTE: * ASSESSED USES INCLUDE THE ASSESSORS "PRIMARY" USE CODE CATEGORIES. IN SOME CASES PRIMARY USES MAY DIFFER FROM USE DESCRIPTIONS AND SECONDARY USES IDENTIFIED BY THE ASSESSOR, THEREFORE UNIT COUNTS AND SQUARE FOOTAGES LISTED MAY DIFFER FROM ACTUAL CONDITIONS.*
SOURCE: GLENN COUNTY ASSESSOR'S OFFICE, 2019; DE NOVO PLANNING GROUP, 2019.

As shown in Table 3.10-1 the majority of assessed land acreage (33 Percent) within the City of Willows city limits is associated with residential land uses. Other major land uses within the city include commercial uses (14.3 percent), and agricultural uses (11.9 percent). Within the unincorporated portions within the Willows SOI (64.3 percent) of lands are for agricultural purposes and approximately 15 percent are currently residential uses.

Population and Households

Table 3.10-2 summarizes California Department of Finance population and household data for Willows and Glenn County from 1990 through 2020.

Willows experienced moderate population growth between 1990 and 2000. The City's population increased from approximately 5,988 in 1990 to approximately 6,164 in 2000, a 3.87% increase. Population growth rates were greater in Glenn County overall (approximately 5.71%) between 1990 and 2000.

As presented in Table 3.10-2 below, in the decades starting from 1990 through 2000, Willows' population grew significantly more than between 2000 and 2010. However recent growth from 2010 to 2020 shows increased growth rates as compared to the decade from 2000 through 2010. As of January 2021, Willows' population was estimated by the State Department of Finance to be 6,243, an increase of 1.28% from the city's 2010 population of 6,164.

TABLE 3.10-2 POPULATION AND HOUSEHOLD GROWTH

	1990	*2000*	*2010*	*2020*	*1990-2000 CHANGE (%)*	*2000-2010 CHANGE (%)*	*2010-2020 CHANGE (%)*	*AVERAGE ANNUAL CHANGE 1990-2020 (%)*
Willows								
Population	5,988	6,220	6,164	6,243	3.87%	-0.90%	1.28%	4.26%
Households	2,196	2,198	2,241	2,299	0.11%	1.97%	2.55%	4.69%
Persons per household	2.73	2.83	2.75	2.72	3.76%	-2.82%	-1.24%	-0.41%
Glenn County								
Population	24,798	26,453	28,120	29,582	6.67%	6.30%	5.20%	19.29%
Households	8,948	9,309	9,911	10,551	4.03%	6.47%	6.47%	17.92%
Persons per household	2.77	2.84	2.84	2.80	2.54%	-0.16%	-1.19%	1.16%

SOURCE: DOF POPULATION AND HOUSING ESTIMATES FOR CITIES, COUNTIES, AND THE STATE, FEBRUARY 2022.

As shown in Table 3.10-2, households increased at a lower rate (0.11%) compared to Willows' population (3.87%) from 1990 through 2000. From 2000 to 2010 Willows' household increased from 2,198 in 2000 to 2,241 in 2010, a 1.97% increase. From 2010 to 2020 Willows' household increased from 2,241 in 2010 to 2,299 in 2020, a 2.55% increase.

Over the years, the average household size has fluctuated slightly with a high of 2.83 in 2000, and a low of 2.72 in 2020. In recent years, household size has remained at similar levels with an average of 2.83 persons per household in 2000, 2.75 persons per household in 2010, and an estimated 2.72 persons per household in 2020.

Housing Units

As of January 2021, the State Department of Finance estimates identified 2,458 housing units in Willows. Between 2000 and 2010, the City's housing stock increased approximately 1.35% to 2,400 housing units, with an additional 2.42% increase from 2010 to 2020.

Table 3.10-3 compares Willows' housing growth from 1990 thorough 2020 with the County as a whole. As shown in Table 3.10-3, Housing growth levels in Willows between 2000 and 2010 were less than countywide increased between the same time period at 1.35% and 8.00% respectively. Between 2010 and 2020 Glenn County's housing unit growth continues to outpace Willows' housing unit growth at 5.13% and 2.42% respectively.

TABLE 3.10-3 HOUSING UNITS

	1990	*2000*	*2010*	*2020*	*1990-2000 CHANGE (%)*	*2000-2010 CHANGE (%)*	*2010-2020 CHANGE (%)*	*AVERAGE ANNUAL CHANGE 1990-2020 (%)*
Willows	2,240	2,368	2,400	2,458	5.71%	1.35%	2.42%	9.73%
Glenn County	9,329	9,982	10,781	11,334	7.00%	8.00%	5.13%	21.49%

SOURCE: DOF POPULATION AND HOUSING ESTIMATES FOR CITIES, COUNTIES, AND THE STATE, FEBRUARY 2022.

Table 3.10-4 show housing units by type within Willows estimated by the DOF for 2021. As shown in Table 3.10-4 the City of Willows has a diverse range of housing, however, the majority of the housing units in the city are single family detached, which account for 68% of housing units. The remaining housing types include single family attached (3%), duplexes through fourplexes (13%), multi-family apartments with five or more units (15%), and mobile homes (1%).

TABLE 3.10-4 HOUSING UNITS BY TYPE

	TOTAL	*SINGLE DETACHED*	*SINGLE ATTACHED*	*TWO TO FOUR*	*FIVE PLUS*	*MOBILE HOMES*	*OCCUPIED*
Willows	2,462	1,686	65	320	367	24	2,226
Willows %	-	68%	3%	13%	15%	1%	90%
Glenn County	11,394	8,052	213	831	767	1,531	10,501
County %	-	71%	2%	7%	7%	13%	92%

SOURCE: DOF E-5 POPULATION AND HOUSING ESTIMATES FOR CITIES, COUNTIES, AND THE STATE, FEBRUARY 2022.

Population and Household Trends

As shown in Table 3,10-5, Willows has not experienced substantial population and household growth since 2000. The city had a population of 6,243 residents and 2,299 households in 2020. These figures represent a 0.4 percent increase in population and a 4.43 percent increase in households since 2000, significantly lower than the rates of growth in Glenn County (11.83 percent increase in population; 13.35 percent increase in households). Household growth outpaced population growth in Willows during this time, leading to a decline in the average household size from 2.82 in 2000 to 2.72 in 2020. Similarly, average household sizes in the county and region decreased during the same period (2.80 persons in Glenn County) in 2020.

TABLE 3.10-5: POPULATION AND HOUSEHOLD GROWTH, 2000-2020

	2000	*2020*	*CHANGE*	
			NUMBER	*PERCENT*
Willows				
Population	6,218	6,243	25	0.40%
Households	2,201	2,299	98	4.43%
Average Household Size	2.82	2.72	-	-
Glenn County				
Population	26,453	29,582	3,129	11.83%
Households	9,309	10,551	1,243	13.35%
Average Household Size	2.84	2.80	-	-

SOURCES: DOF E-5 POPULATION AND HOUSING ESTIMATES FOR CITIES, COUNTIES, AND THE STATE, FEBRUARY 2022.

3.10.2 REGULATORY SETTING

STATE

California General Plan Law

Government Code Section 65300 requires that each county and city 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 General Plan will include a comprehensive set of goals, policies, and actions (implementation measures), as well as a revised Land Use Map. It is a comprehensive long-term plan for the physical development of the county or city and is considered a "blueprint" for development. The General Plan must contain seven state-mandated elements: Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety. In addition to the state-mandated elements the State provides additional requirements for topical areas for the general plan to address, for example: climate resiliency and adaptation, and environmental justice. The General Plan may also contain any other elements that a county or city wishes to include. The land use element designates the general location and intensity of designated land uses to accommodate housing, business, industry, open space, education, public buildings and grounds, recreation areas, and other land uses.

The 2017 General Plan Guidelines, established by the Governor's Office of Planning and Research (OPR) to assist local agencies in the preparation of their general plans, further describe the mandatory land use element as a guide to planners, the general public, and decision makers prescribing the ultimate pattern of development for the county or city.

Regional Housing Needs Plan

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation (RHNA) and is based on a Regional Housing Needs Plan (RHNP) developed by councils of government. California General Plan law requires each City and County to have land zoned to

accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation (RHNA). The determination of the local share of regional housing needs is assigned by the California Department of Housing and Community Development, Division of Housing Policy Development. Regional Housing Needs Allocation numbers are separated into four income categories: very low, low, moderate, and above moderate income levels. The Countywide RHNA for 2021-2029 is summarized in Table 3.10-6. The City is not required to ensure that adequate development to accommodate the RHNA occurs; however, the City must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed.

TABLE 3.10-6: REGIONAL HOUSING NEEDS ALLOCATION

INCOME CATEGORY	*CITY OF WILLOWS*	*CITY OF ORLAND*	*UNINCORPORATED GLENN COUNTY*	*TOTAL*
2021 - 2029				
Extremely Low/ Very low (<30-50% of AMI) *	47	62	75	184
Low (51-80% of AMI)	22	31	30	83
Moderate (81-120% of AMI)	36	44	36	116
Above Moderate (over 120% of AMI)	80	110	88	278
Total	185	247	229	661

*NOTES: * (AMI) AREA MEDIAN INCOME*

SOURCE: WILLOWS 2014-2019 HOUSING ELEMENT UPDATE

The Glenn County Regional Transportation Plan

The Regional Transportation Plan serves as the planning blueprint to guide transportation investments in Glenn County involving local, State, and Federal funding over the next 20 years. Regional Transportation Plan guidelines require the RTP to be updated every 5 years. Since the latest Glenn County RTP was developed in 2015, it is being updated to be compliant with new standards set in the adopted 2017 Regional Transportation Plan Guidelines for Regional Transportation Planning Agencies. The overall focus of the 2020 RTP is directed at developing a coordinated and balanced multi-modal regional transportation system that is financially constrained to the revenues anticipated over the life of the plan. The balance is achieved by considering investment and improvements for moving people and goods across all modes including roads, transit, bicycle, pedestrian, trucking, railroad, and aviation.

Subdivision Code

A subdivision is any division of land for the purpose of sale, lease or finance. The State of California Subdivision Map Act (Government Code § 66410) regulates subdivisions throughout the state. The goals of the Subdivision Map Act are as follows:

- To encourage orderly community development by providing for the regulation and control of the design and improvement of a subdivision with proper consideration of its relationship to adjoining areas.
- To ensure that areas within the subdivision that are dedicated for public purposes will be properly improved by the subdivider so that they will not become an undue burden on the community.

- To protect the public and individual transferees from fraud and exploitation.

The Map Act allows cities flexibility in the processing of subdivisions. Willows controls this process through the subdivision regulations in the Municipal Code Title 11, Chapter 1 (referred to as the Willows Subdivisions Code). These regulations ensure that minimum requirements are adopted for the protection of the public health, safety and welfare; and that the subdivision includes adequate community improvements, municipal services, and other public facilities.

LOCAL

Local Agency Formation Commission of Glenn County

In 1963, the State Legislature created a local agency formation commission (LAFCO) for each county, with the authority to regulate local agency boundary changes. Subsequently, the State has expanded the authority of a LAFCO. The goals of the LAFCO include preserving agricultural and open space land resources and providing for efficient delivery of services. The Glenn County LAFCO has authority over land use decisions in Glenn County affecting local agency boundaries. Its authority extends to the incorporated cities, including annexation of County lands into a city, and special districts within the County. LAFCO has the authority to review and approve or disapprove the following:

- Annexations to or detachments from cities or districts.
- Formation or dissolution of districts.
- Incorporation or disincorporation of cities.
- Consolidation or reorganization of cities or districts.
- Establishment of subsidiary districts.
- Development of, and amendments to, Spheres of Influence. The Sphere of Influence (SOI) is the probable physical boundary and service area of each local government agency. This may extend beyond the current service area of the agency.
- Extensions of service beyond an agency's jurisdictional boundaries.
- Provision of new or different services by districts.
- Proposals that extend service into previously unserved territory in unincorporated areas.

In addition, the Glenn County LAFCO conducts Municipal Service Reviews (MSRs) for services within its jurisdiction. An MSR typically includes a review of existing municipal services provided by a local agency or district and its infrastructure needs and deficiencies. It also evaluates financing constraints and opportunities, management efficiencies, opportunities for rate restructuring and shared facilities, local accountability and governance, and other issues.

Legislation, including Assembly Bill 1555 and Senate Bill 244, has been enacted to encourage the identification and annexation of islands, which are unincorporated areas substantially surrounded by a city or cities.

Glenn County Airport Land Use Commission

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect public health, safety,

and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses (§21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

The Glenn County Airport Land Use Commission is established according the Chapter 22.10 of the Glenn County Code which was adopted by the Glenn County Board of Supervisors in 1985 (Ordinance No. 830).

The seven-member Glenn County Airport Land Use Commission ensures compatible land uses in the vicinity of all airport facilities. The Airport Land Use Commission review plans, regulations, & other actions of local agencies & airport operators.

The Land Use Commission oversees the Orland and Willows Airport Comprehensive Land Use Plans. The overall goal for the Orland and Willows Airport Comprehensive Land Use Plans is to provide for the orderly growth of the Airport facilities and from the areas surrounding the airports, to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. This Plan was adopted in 1990 and has not been updated since.

The Glenn County Willows Airport is located within the Willows SOI, immediately east of I-5.

Glenn County General Plan

California 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" (§65300 GovCode). The California Supreme Court has called the general plan the "constitution for future development."

Glenn County adopted its General Plan in June, 1993. The County's General Plan provides a comprehensive set of goals, policies, and implementing actions to guide the County's growth. Figure land uses within the Willows SOI are under Glenn County jurisdiction. The County's General Plan includes the following elements:

- Land Use
- Circulation
- Housing
- Conservation
- Open Space
- Noise
- Safety

The County's General Plan establishes allowed land uses for lands within the City's SOI and Planning Area. While the City of Willows General Plan Land Use Map identifies planned land uses within the SOI and Planning Area, Glenn County has ultimate land use planning, and project approval authority within the SOI unless the lands are annexed into the City.

City of Willows Zoning Ordinance

Title 18 of the Willows Municipal Code is the City's Planning and Zoning Ordinance. The Planning and Zoning Ordinance carries out the policies of the General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. The Planning and Zoning Ordinance is adopted to protect and promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the City.

Zoning provides a legal mechanism for local government regulation of the land uses described in the General Plan Land Use Map. In addition to providing specific regulations related to minimum lot size, building heights, setbacks, lot coverage, etc., for each zoning district, the Zoning Ordinance also lists the uses that would be acceptable or could be considered in each district, as well as those that would be considered unacceptable. For some uses, further regulations are established. Zoning regulations designate the permitting process that applies for approval of land uses in the zoning district.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and population if it will:

- 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;
- 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.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: General Plan implementation would not physically divide an established community (Less than Significant)

The proposed General Plan establishes the City's vision for future growth and development. Goal LU-2 aims to ensure that new development is compatible with existing development in order to maintain a high quality of life for residents and prevent land use conflicts.

The land uses allowed under the proposed General Plan (Figure 2.0-2) provide opportunities for cohesive new growth at in-fill locations within existing urbanized areas of the city, as well as new growth adjacent to existing urbanized areas within the existing City Limits, and would not create physical division within the community.

New development and redevelopment projects would be designed to complement the character of the existing community and neighborhoods and provide connectivity between existing development and new development. The proposed General Plan Land Use Map designates sites for a range of developed uses as well as open space. The proposed General Plan does not include any new areas designated for urbanization beyond the current SOI or new roadways, infrastructure, or other features that would divide existing communities. The proposed General Plan would have a **less than significant** impact associated with the physical division of an established community. The policies and actions listed below would ensure that future development is compatible with and well integrated with adjacent communities and land uses. Additional information including policies and actions related to street connectivity can be found in Section 3.14 (Transportation and Circulation) of this DEIR.

GENERAL PLAN GOALS POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU: 2.1: Promote high quality design and site planning that is compatible with surrounding development, public spaces, and natural resources.

LU 2.2: Prohibit the establishment or encroachment of incompatible uses. Where new residential development is proposed near incompatible uses, such as industrial or intensive agricultural lands, ensure proper setback and buffer requirements are provided to reduce operational restrictions on industrial and agricultural users. Setback and buffer requirements shall be placed on the residential developments when proposed near existing industrial and agriculture uses.

LU 2.3: Require new development that is located within or immediately adjacent to existing residential neighborhoods to be compatible and/or well integrated with the existing residential neighborhoods.

LU 2.4: Incorporate opens spaces and or transitional land uses as buffers between land uses which are potentially incompatible. For example, this could include commercial uses as a buffer between industrial and residential areas and transportation and rail corridors.

LU 2.5: Encourage non-conforming uses to redevelop as conforming uses.

LU 2.6: In considering land use change requests, consider factors such as compatibility with the surrounding uses, privacy, noise, and changes in traffic levels on residential streets.

LU 2.7: Promote logical City boundaries and work with Glenn County to ensure and develop complementary and compatible uses adjacent to Willows.

LU 2.8: Ensure that development within the Willows Airport Influence Area is consistent with the compatible uses identified in the Project Review Guidelines for the Airport Land Use Commission.

LU 2.9: Ensure that the impacts from flooding are adequately analyzed when considering development in flood prone areas.

LU 2.10: Locate residences away from areas of excessive noise, smoke, dust, odor, and lighting, and ensure that adequate provisions, including buffers or transitional uses, are implemented to ensure the health and well-being of existing and future residents.

LU 2.11: Encourage new development projects to incorporate public safety measures into project designs. Such measures may include, but are not limited to: crosswalks, exterior lighting, windows oriented towards the street, and other measures to prevent crime and promote safety through Environmental Design approaches.

LAND USE ELEMENT ACTIONS

LU-2a: Through the development review and permit process, screen development proposals for land use compatibility, including conformance with existing and planned development.

LU-2b: Update the Willows Municipal Code to include development standards for setback and buffer requirements for new residential development adjacent to industrial and agricultural land uses.

LU-2c: Implement the policies and actions included in the Safety Element to protect life and property from impacts associated with flooding.

LU-2d: When updated flood plain maps are prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources (DWR), review the Land Use Map to identify any potential safety impacts associated with residential land uses located within flood zones.

LU-2e: Refer all applications for development within the Willows Airport Area of Influence to the Airport Land Use Commission (ALUC) for comment.

LU-2f: Review development projects, consistent with the requirements of the California Environmental Quality Act and other applicable laws, to identify potential impacts associated with aesthetics, agriculture, air quality, circulation, community character, natural and cultural resources, greenhouse gases, public health and safety, water quality and supply, public services and facilities, and utilities and to mitigate of adverse impacts to the maximum extent that is feasible and practical.

LU-2g: As part of project review, ensure that structures are reviewed for potential flood impacts. In areas that are subject to 100-year flood events, provide adequate protection in accordance with FEMA flood plain development standards.

Impact 3.10-2: General Plan implementation would not 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 (Less than Significant)

STATE PLANS

The proposed General Plan was prepared in conformance with State laws and regulations associated with the preparation of general plans, including requirements for environmental protection. Discussion of the proposed General Plan's consistency with State regulations, plans, and policies associated with specific environmental issues (e.g., air quality, traffic, water quality, etc.) is provided in the relevant chapters of this Draft EIR. The State would continue to have authority over any State-owned lands in the vicinity of the city and the proposed General Plan would not conflict with continued application of State land use plans, policies, and regulations adopted to avoid or mitigate environmental effects.

REGIONAL PLANS

The western portion of the Planning Area is located within the Airport Influence Area for the Willows-Glenn County Airport. The Willows Glenn County Airport has 254 Acres of land and an intersecting V-type runway system located adjacent to Interstate 5 west of Willows. The Airport Master plan was adopted in 2008. The overall goal for the Willows Airport Comprehensive Land Use Plan is to provide for the orderly growth of the Airport facility and to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The Glenn County Airport Land Use Commission is established according the Chapter 22.10 of the Glenn County Code which was adopted by the Glenn County Board of Supervisors in 1985 (Ordinance No. 830). The seven-member Glenn County Airport Land Use Commission ensures compatible land uses in the vicinity of all airport facilities. The Airport Land Use Commission review plans, regulations, & other actions of local agencies & airport operators.

The Land Use Commission oversees the Orland and Willows Airport Comprehensive Land Use Plans. The overall goal for the Orland and Willows Airport Comprehensive Land Use Plans is to provide for the orderly growth of the Airport facilities and from the areas surrounding the airports, to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general.

General Plan Policy LU 2.8 ensures that development within the Willows Airport Influence Area (shown on Figure 4.2-1 in the Existing Conditions Report) is consistent with the compatible uses identified in the Project Review Guidelines for the Airport Land Use Commission. General Plan Action LU-2e states that the City will refer all applications for development within the Airport Area of Influence to the ALUC for comment to ensure that all future plans have limited impacts. Consistency with the General Plan policies and actions described above would ensure future development projects under the proposed General Plan would not conflict with an adopted Airport Land Use Plan.

CITY PLANS

As set forth by State law, the General Plan serves as the primary planning document for the City and subordinate documents and plans would be updated to be consistent with the General Plan. Similar to the existing General Plan, the proposed General Plan focuses on a balanced land use pattern, creating a community where new development blends with existing neighborhoods, and promoting the City as a desirable place to live and work. The proposed General Plan carries forward and enhances policies and measures from the City's existing General Plan that were intended for environmental protection and would not remove or conflict with City plans, policies, or regulations adopted for environmental protection. The proposed General Plan would require modifications to the City's Zoning Ordinance to provide consistency between the General Plan and zoning; however, these modifications will not remove or adversely modify portions of the Willows Municipal Code that were adopted to mitigate an environmental effect.

SUMMARY

Subsequent development and infrastructure projects would be required to be consistent with all applicable policies, standards, and regulations, including those land use plans, policies, and regulations adopted to mitigate environmental effects by the City as well as those adopted by agencies with jurisdiction over components of future development projects. Potential environmental impact associated with conflicts with land use requirements would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU 6-1: Provide adequate infrastructure (i.e., streets, sewer, and storm drain) to meet the needs of existing and future development.

LU 6-2: Require development, infrastructure, and long-term planning projects to be consistent with all applicable infrastructure plans, including the California Water Service District's Urban Water Management Plan, and the City's Capital Improvement Program.

LU 6-3: Require all development projects to mitigate their infrastructure service impacts or demonstrate that the City's infrastructure, public services, and utilities can accommodate the increased demand for services, and that service levels for existing users will not be degraded or impaired.

LU 6-4: Require the payment of impact fees for all new development.

LU 6-5: Design services and infrastructure to serve existing and planned land uses. Actions

LAND USE ELEMENT ACTIONS

LU 6a: As part of the development review process, determine the potential impacts of development and infrastructure projects on public infrastructure, and ensure that new development contributes its fair share toward necessary on and off-site infrastructure.

LU 6b: Ensure that infrastructure is adequately sized to accommodate the proposed development and, if applicable, allow for extensions to future developments.

Impact 3.10-3: General Plan implementation would not 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)

The proposed General Plan accommodates future growth in Willows, including new businesses, expansion of existing businesses, and new residential uses. Infrastructure and services would need to be extended to accommodate future growth. At full buildout, the proposed General Plan could yield a total of up to 3,490 housing units, and a population of 8,864 people within the Planning Area. As shown in Table 2.0-2, this represents development growth over existing conditions of up to 1,032 new housing units, 2,621 people.

Depending on growth rates, the actual growth during the life of the General Plan could be lower or higher, but would not be expected to exceed the theoretical buildout described in Chapter 2.0 (Project Description).

Given the historical and current population, housing, and employment trends, growth in the city, as well as the entire state, is inevitable. The primary factors that account for population growth are natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population. Additionally, California is expected to attract more than one third of the

country's immigrants. Other factors that affect growth include the cost of housing, the location of jobs, the economy, the climate, and transportation. While these factors would likely result in growth in Willows during the planning period of the proposed General Plan, growth will continue to occur based primarily on the demand of the housing market and demand for new commercial, industrial, and other non-residential uses. As future development occurs under the proposed General Plan, new roads, infrastructure, and services would be necessary to serve the development, and this infrastructure would accommodate planned growth. The proposed General Plan is intended to accommodate the City's fair share of statewide housing needs, which are allocated by the Glenn County, based on regional numbers provided by the California Department of Housing and Community Development on a regular basis (every eight years).

The proposed General Plan includes policies and actions that minimize environmental impacts associated with growth, such as air quality, noise, traffic, water supply, and water quality effects. Chapters 3.1 through 3.16 and 4.0 provide a discussion of environmental effects associated with development allowed under the proposed General Plan. Each of these EIR chapters include relevant policies and action items that would minimize potential environmental impacts associated with growth, to the greatest extent feasible.

With implementation of General Plan, policies and actions intended to guide growth to appropriate areas and provide services necessary to accommodate growth, the land uses allowed under the proposed General Plan, the infrastructure anticipated to accommodate proposed land uses, and the goal and policy framework would not induce growth that would exceed adopted thresholds, beyond those disclosed and analyzed throughout this EIR. Therefore, population and housing growth associated with the proposed General Plan would result a **less than significant** impact.

Impact 3.10-4: General Plan implementation would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere (less than significant)

Much of developed land in the Planning Area is comprised of residential uses, which are not anticipated to undergo significant land use changes under the Proposed General Plan. The Proposed General Plan focuses infill development opportunities and underutilized areas within the City and SOI. The proposed General Plan Land Use Map includes an expansion to the City's total amount of residential dwelling units when compared to existing levels of development. Additional development allowed under the proposed General Plan allows for the diversification of the City's housing supply to meet the needs of the community at various socioeconomic levels. While the proposed General Plan may result in development that could remove individual residences through redevelopment, development allowed under the General Plan identifies lands for a variety of housing densities and types would result in an increase in the total number of residences and provide additional housing opportunities for persons that may be displaced as a result of development.

Therefore, impacts of the proposed General Plan on the displacement of people or housing are considered **less than significant**. The policies listed below would further ensure that a range of housing types are provided in the City.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU 3.1: Provide for a variety of residential land uses that meet the needs of individuals and families while ensuring that there is adequate land designated to meet Housing goals. (Additional policies specifically related to Housing are included in the Housing Element).

LU 3.2: Encourage residential development to occur in a balanced and efficient pattern that reduces sprawl, preserves open space, and creates convenient connections to other land uses.

LU 3.3: Encourage creativity in the design and construction of residential projects in order to increase affordable housing options throughout the city. Projects that incorporate unique site design, clustered developments, and other tools to increase housing options shall be encouraged.

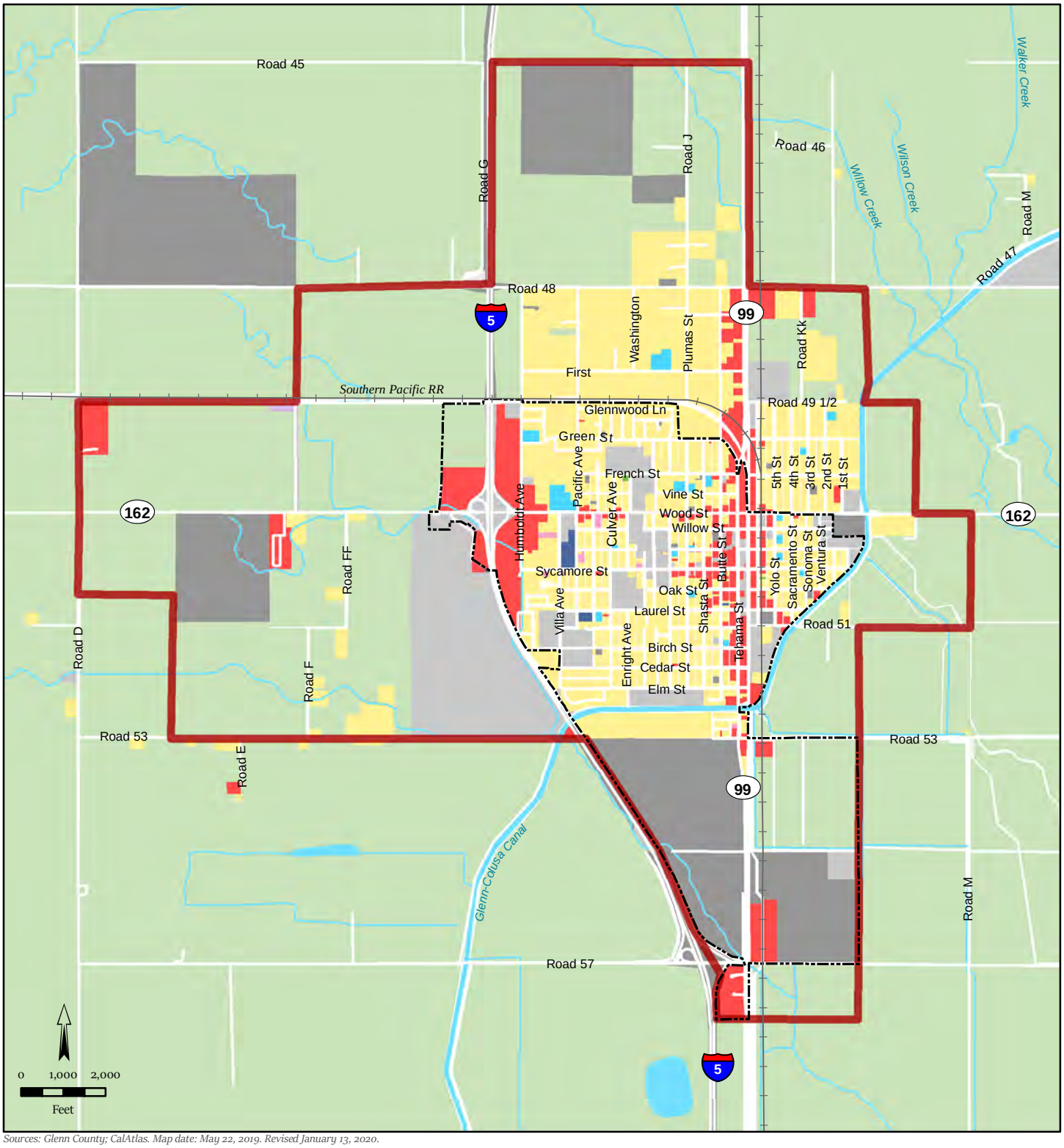
LU 3.4: Encourage growth to contribute to the City's strong, diversified economic base and provide an appropriate balance between employment and housing opportunities for all income levels.

LAND USE ELEMENT ACTIONS

LU-3a: Implement the policies and actions in the Housing Element in order to enhance opportunities to provide affordable housing within the community and to accommodate a range of household types, special need populations, and income levels.

LU-3b: Seek funding for neighborhood improvement programs designed to stabilize and enhance the quality of existing neighborhoods. Such improvements may include, but are not limited to sidewalk upgrade and repair, street tree programs, street lighting, signage, trash collectors, bus stop shelters and benches and similar improvements to the public areas.

LU-3c: Continue to upgrade and provide infrastructure improvements that supports residential neighborhoods and development opportunities as funding is available.



Sources: Glenn County; CalAtlas. Map date: May 22, 2019. Revised January 13, 2020.

LEGEND

- City of Willows
- Willows Sphere of Influence

Assessed Land Use

- Agricultural
- Residential
- Commercial
- Professional
- Governmental
- Institutional
- Industrial
- Recreational
- Undefined
- Exempt
- No Assessor Data
- ROW/Canal

CITY OF WILLOWS

FIGURE 3.10-1. ASSESSED LAND USES

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This section provides a background discussion and analysis of mineral resources in Willows. This section is organized with an environmental setting, regulatory setting, and impact analysis.

One comment was received on this environmental topic during the NOP comment period. The Department of Toxic Substances stated that if any sites within the project area having been used for mining activities, proper investigation for mine waste should be discussed in the EIR. All comments received during the NOP comment period are included within Appendix A. All topics related to hazardous waste are included in Chapter 3.8 (Hazards and Hazardous Waste).

3.11.1 ENVIRONMENTAL SETTING

MINERAL RESOURCE CLASSIFICATION

Pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA), the California State Mining and Geology Board oversees the Mineral Resource Zone (MRZ) classification system. The MRZ system characterizes both the location and known/presumed economic value of underlying mineral resources. The mineral resource classification system uses four main MRZs based on the degree of available geologic information, the likelihood of significant mineral resource occurrence, and the known or inferred quantity of significant mineral resources. The four classifications are described in Table 3.11-1 below.

TABLE 3.11-1: MINERAL RESOURCE CLASSIFICATION SYSTEM

CLASSIFICATION	*DESCRIPTION*
MRZ-1	Areas 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	Areas 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	Areas containing mineral deposits, the significance of which cannot be evaluated.
MRZ-4	Areas where available information is inadequate for assignment to any other MRZ classification.

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY, 2002.

MINERAL RESOURCES

Statewide Resources

In 2012, the California Geological Survey identified that approximately 4 billion tons of permitted aggregate reserves lie within the 31 aggregate study areas in California. These permitted aggregate reserves have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material. Sand, gravel, and crushed stones are construction materials that are collectively referred to as construction aggregate. These materials provide the bulk and strength to cement concrete (CC), asphaltic concrete (AC), plaster, and stucco. Other uses include road base, subbase, railroad ballast, and fill.

From 1981 to 2010, California consumed an average of about 180 million tons of construction aggregate (all grades) per year. (CGS, 2012)

Regional Setting

The primary mineral resources in Glenn County are sand, gravel, and natural gas. In 1997, the California Geological Survey assessed Glenn County mineral resources, with a focus on aggregate resources. Mineral resources in the region are classified based on whether the aggregate meets the specifications for use in CC. This aggregate is termed "CC-grade aggregate." The material quality specifications for CC-grade aggregate are more restrictive than the specifications for aggregate for other applications. As a result of the strict specifications, CC-grade aggregate deposits are more scarce and valuable than other aggregate resources.

Within Glenn County, 9 ARAs, including 41 subdivisions were identified as containing significant resources of concrete-grade aggregate. These areas contain an estimated minimum of 357 million tons of concrete-grade aggregate resources and a maximum of 1,031 million tons. Fourteen present production sites have an estimated 61 million tons of concrete-grade aggregate reserves, including both sand and gravel.

To be considered significant for the purpose of mineral land classification, a mineral deposit or group of deposits, must meet criteria adopted by the State Mining and Geology Board. These criteria include marketability and threshold values. The threshold value is approximately $17.375 million for a construction aggregate deposit. CC-grade aggregate sells for approximately $13 per ton on average in California; therefore, $17,375,000 equates to about 1.3 million tons of CC-grade aggregate material.

Based on past production data, Glenn County will need 77 million tons of aggregate during the next 50 years. Of this projected demand, approximately 33% (27 million tons) must be suitable for CC and approximately 33% (27 million tons) must be suitable for AC. The 61 million tons of aggregate reserves are approximately 75% of the projected aggregate demand over the next 50 years. Unless new resources are permitted for mining, or alternative resources are used, existing reserves could be depleted by 2038. If a catastrophic event strikes the area and necessitates reconstruction, existing reserves will likely be depleted sooner.

Mineral Extraction Activities

Approximately 41 million tons of CC-grade aggregate reserves are permitted for production in the County (CGS, 2018). There are 21 active and inactive mines within Glenn County (California Department of Conservation, 2016). The nearest active aggregate mine is Watts Pit, owned and operated by the Glenn County Department of Public Works, located to the northeast of the Planning Area along County Road 39.

Local Resources

Figure 3.11-1: Mineral Resource Zones shows mineral resources within and near the Planning Area. As shown on Figure 3.11-1, the Willows Planning Area is generally designated as MRZ-3a "may contain significant aggregate deposit."

3.11.2 REGULATORY SETTING

STATE

Surface Mining and Reclamation Act of 1975

The California Department of Conservation Surface Mining and Reclamation Act of 1975 (§ 2710), also known as SMARA, provides a comprehensive surface mining and reclamation policy that permits the continued mining of minerals, as well as the protection and subsequent beneficial use of the mined and reclaimed land. The purpose of SMARA is to ensure that adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition and readily adaptable for alternative land uses. The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, as well as aesthetic enjoyment. Residual hazards to public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

If a use is proposed that might threaten the potential recovery of minerals from an area that has been classified mineral resource zone 2 (MRZ-2), SMARA would require the jurisdiction to prepare a statement specifying its reasons for permitting the proposed use, provide public notice of these reasons, and forward a copy of the statement to the State Geologist and the State Mining and Geology Board (Cal. Pub. Res. Code Section 2762). Lands classified MRZ-2 are areas that contain identified mineral resources.

Division of Mines and Geology

The California Division of Mines and Geology (DMG) operates within the Department of Conservation. The DMG is responsible for assisting in the utilization of mineral deposits and the identification of geological hazards.

State Geological Survey

Similar to the DMG, the California Geological Survey is responsible for assisting in the identification and proper utilization of mineral deposits, as well as the identification of fault locations and other geological hazards.

Public Resources Code

PRC Section 2762(d) and 2763 requires a lead agency to prepare a statement specifying its reasons for permitting a use that would threaten the potential to extract mineral resources either 1) in an area that has been designated in its general plan as having important minerals to be protected, or 2) if the use is proposed in an area with significant resources pursuant to Section 2761(b)(2) and the lead agency has not yet acted on the State's designation. PRC Section 2763 requires that lead agency land use decisions involving areas designated as being of regional significance shall be in accordance with the lead agency's mineral resource management policies and shall also, in balancing mineral

values against alternative land uses, consider the importance of these minerals to their market region as a whole and not just their importance to the lead agency's area of jurisdiction.

ASSEMBLY BILL 617

Assembly Bill 617 (AB 617) was signed by Governor Jerry Brown on July 26, 2017, amends California Health and Safety Code section 40920.6, and requires Districts to adopt a schedule of BARCT regulation implementation. BARCT rules amend existing District Regulations but in the case that no specific District Regulations exist, new Regulations are adopted. In the Districts circumstance, it does not have a BARCT regulation so new rules would need to be evaluated. This schedule referenced in Item 5 is a timeframe for the District to potentially adopt new Regulation(s) specific to certain facilities in the natural gas industry identified by CARB.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project may have a significant impact on the environment associated with mineral resources if it would:

1. 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; or
2. 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.

3.11.3 IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: General Plan implementation would not 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)

The Planning Area contains four areas identified as MRZ-3a areas that may contain significant aggregate deposit. These areas, located throughout the majority of the county's valley areas.

The only known identified regional mineral resource areas within significant deposits are located north of the City. New urban uses on undeveloped areas of land could impact resource deposits. The implications for land use planning in order to preserve local mineral resources and ensure their future availability are basically two-fold: (a) protecting existing and potential sites from development that would preclude mineral extraction, and (b) assuring that access routes are available to large transport vehicles. Approximately 41 million tons of CC-grade aggregate reserves are permitted for production in the County (CGS, 2018). There are 21 active and inactive mines within Glenn County (California Department of Conservation, 2016). The nearest active aggregate mine is Watts Pit, owned and operated by the Glenn County Department of Public Works, located to the northeast of the Planning Area along County road 35. New urban uses available for development are within the city limits and SOI and would not be developed within an identified significant mineral resource area. There are no other known mineral deposits or resources extraction areas within the City that are of significant value to the region or the state. As such, implementation of the proposed General Plan would have a **less than significant** impact on this environmental topic.

Impact 3.11-2: General Plan implementation would not 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)

The Planning Area does not contain sites designated as a locally important mineral resource recovery site by the City's General Plan. Implementation of the proposed General Plan would not result in the loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, this impact is considered **less than significant**.

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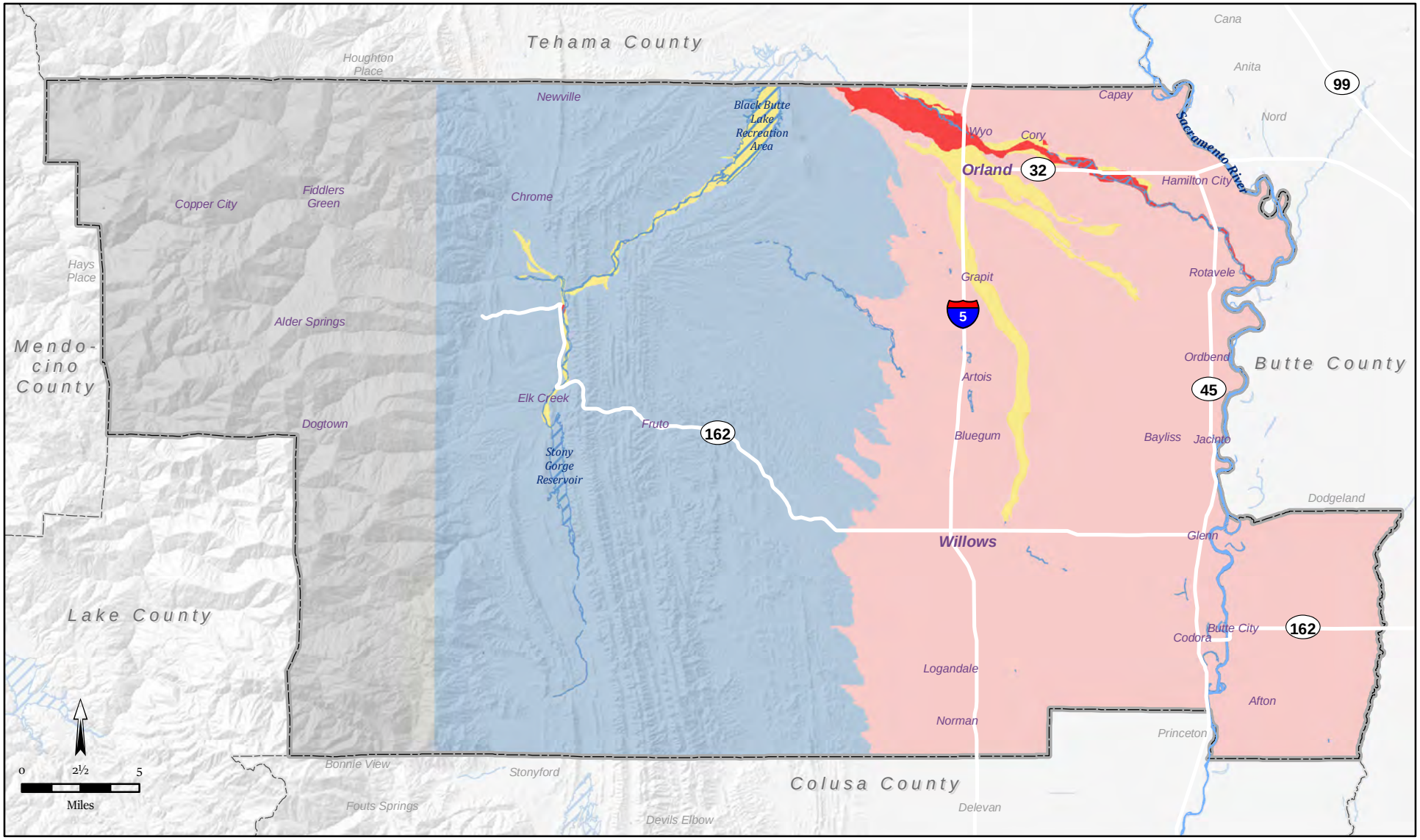

Sources: California Department of Conservation, Division of Mines and Geology, Open-File Report 97-02: Mineral Land Classification of Concrete-Grade Aggregate Resources in Glenn County, California, 1997, Plates 1 and 2. Map date: June 27, 2019. Revised December 10, 2019.

Legend

- MRZ-2a: Significant aggregate deposit
- MRZ-2b: High likelihood of significant aggregate deposit
- MRZ-3a: May contain significant aggregate deposit
- Unclassified
- Unmapped

COUNTY OF GLENN, CALIFORNIA

FIGURE 3.11-1. MINERAL RESOURCE ZONES

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This section provides a discussion of the regulatory setting and a general description of existing noise sources in the City of Willows. The analysis of potential noise-related impacts in this section was prepared with assistance from Saxelby Acoustics.

No Comments related to this environmental topic were received during the 30-day NOP Public Review Comment Period.

3.12.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared. All dB levels used in this report are A-weighted values, unless otherwise stated.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by + 5 dB and nighttime hours weighted by +10 dB. Typically, 1 dB higher than Ldn for transportation noise sources.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.

SEL A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures

as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to Ldn, but includes a +3 dB penalty for evening noise. Table 3.12-1 lists several examples of the noise levels associated with common situations.

TABLE 3.12-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (DBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop L_{dn} (24-hour average) noise contours for all highways and major roadways in the Planning Area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the General Plan study area. Day/night traffic distributions were based upon continuous hourly noise measurement data. Heavy truck counts were also provided by the traffic engineer. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 3.12-2 shows the results of this analysis.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segments. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 3.12-2 are generally considered to be conservative estimates of noise exposure along roadways in the City of Willows.

TABLE 3.12-2: PREDICTED EXISTING TRAFFIC NOISE LEVELS (2020 BASELINE)

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (DB, L_{DN})[1]	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN (FEET)		
			60 DB	65 DB	70 DB
Wood St	Washington St to Murdock Ave	63.4	25	54	117
County Road 57	Road D to I-5 SB Ramps	46.5	5	10	23
N Tehama	French Street to SR 162	61.0	9	19	41
N Tehama	SR 162 to W. Willow St.	59.9	8	18	39
Hwy 99W	Road M to County Road 57	52.9	16	34	74
Hwy 99W	County Road 57 to South Ct	57.6	17	37	79
Wood St	N. Tehama St to N. Colusa St.	65.4	17	37	80
County Road 57	Hwy. 99W to Road M	58.2	8	18	38
Interstate 5	Washington St to Murdock Ave	76.1	281	605	1303

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

[1] TRAFFIC NOISE LEVELS ARE PREDICTED AT THE CLOSEST SENSITIVE RECEPTORS

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS TRANSPORTATION CONSULTANTS, CALTRANS, AND SAXELBY ACOUSTICS 2022.

Railroad Noise Levels

Railroad activity in the City of Willows occurs along the California Northern Railroad Company (CFNR) line. The line extends from the Union Pacific Railroad (UPRR) junction in Davis to the UPRR junction in Tehama. The CFNR line is used to haul lumber, beverage products, food products, steel pipe, agricultural products, and construction materials.

In order to quantify noise exposure from existing train operations, continuous (24-hour) noise level measurement surveys were conducted along the CFNR railroad lines which run along the north side of the City.

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train events so that the typical number of train operations could be determined.

Table 3.12-3 shows a summary of the continuous noise measurement results for railroad activity within the city.

TABLE 3.12-3: RAILROAD NOISE MEASUREMENT RESULTS

MEASUREMENT LOCATION	RAILROAD TRACK	GRADE CROSSING /WARNING HORN	TRAIN EVENTS PER 24-HR PERIOD	DISTANCE TO CL	AVERAGE SEL
LT-3	CFNR	Yes	2	50’	107 dBA

SOURCE: SAXELBY ACOUSTICS - 2019

Noise measurement equipment consisted of Larson Davis Laboratories (LDL) model 831 precision integrating sound level meters equipped with a GRAS ½" microphone. The measurement system was calibrated using a B&K 4230 acoustical calibrator before and after testing. Audio recordings of events were captured along with sound measurement data to help with source identification of events. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

To determine the distances to the day/night average (L_{dn}) railroad contours, it is necessary to calculate the Ldn for typical train operations. This was done using the SEL values and above-described number and distribution of daily train operations. The L_{dn} may be calculated as follows:

$$Ldn = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime (7 a.m. to 7 p.m.) events plus 10 times the number of nighttime (10 p.m. to 7 a.m.) events per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the L_{dn} value for railroad line operations have been calculated, and the distances to the Ldn noise level contours are shown in Table 3.12-4.

TABLE 3.12-4: APPROXIMATE DISTANCES TO THE RAILROAD NOISE CONTOURS

MEASUREMENT LOCATION	EXTERIOR NOISE LEVEL AT 100 FEET, L_{DN}	DISTANCE TO EXTERIOR NOISE LEVEL CONTOURS, FEET		
		60 dB L_{DN}	65 dB L_{DN}	70 dB L_{DN}
UNION PACIFIC – NO WARNING HORNS				
LT-3	54 dB	55’	25’	12’

SOURCE: SAXELBY ACOUSTICS - 2019.

AVIATION NOISE LEVELS

Willows-Glenn County Airport is the main aviation facilities in the proximity of the city, located at 353 Co Rd G, Willows, CA 95988, west of Willows. The airport is owned and operated by Glenn County. The Willows-Glenn County Airport measures 4125 ft. long by 100 ft. wide.

The most recent estimate of annual operations for Willows-Glenn County Airport is approximately 30,000 flights per year. A major portion of airport operations are a result of agricultural aircraft involved in crop dusting activities.

Noise impacts and contours for Willows-Glenn County Airport are addressed in *Willows Airport Land Use Plan*, adopted by the Glenn County Airport Land Use Commission on June 30, 1990. Figures 3.12-2 shows the most recent noise contours developed for the airport.

Fixed Noise Sources

The production of noise is a result of many industrial processes, 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 (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels.

In the City of Willows, fixed noise sources typically include parking lots, loading docks, parks, schools, and other commercial/retail use noise sources (HVAC, exhaust fans, etc.)

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

- HVAC Systems
- Cooling Towers/Evaporative Condensers
- Pump Stations
- Lift Stations
- Steam Valves
- Steam Turbines
- Generators
- Fans
- Air Compressors
- Heavy Equipment
- Conveyor Systems
- Transformers
- Pile Drivers
- Grinders
- Drill Rigs
- Gas or Diesel Motors
- Welders
- Cutting Equipment
- Outdoor Speakers
- Blowers
- Chippers
- Cutting Equipment
- Loading Docks
- Amplified music and voice

The types of uses which may typically produce the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, special events such as concerts, and athletic fields. Typical noise levels associated with various types of stationary noise sources are shown in Table 3.12-5.

TABLE 3.12-5: TYPICAL STATIONARY SOURCE NOISE LEVELS

USE	NOISE LEVEL AT 100 FEET, L_{EQ} [1]	DISTANCE TO NOISE CONTOURS, FEET			
		50 DB L_{EQ} (NO SHIELDING)	45 DB L_{EQ} (NO SHIELDING)	50 DB L_{EQ} (WITH 5 DB SHIELDING)	45 DB L_{EQ} (WITH 5 DB SHIELDING)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
Skate Park	60 dB	316	562	178	316
School Playground / Neighborhood Park	54 dB	158	281	89	158
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

[1] Analysis assumes a source-receiver distance of approximately 100 feet, no shielding, and flat topography. Actual noise levels will vary depending on site conditions and intensity of the use. This information is intended as a general rule only, and is not suitable for final site-specific noise studies.

Source: Saxelby Acoustics 2022.

COMMUNITY NOISE SURVEY

A community noise survey was conducted to document ambient noise levels at various locations throughout the City. Short-term noise measurements were conducted at five locations throughout the City on July 17-19, 2019. In addition, seven continuous 24-hour noise monitoring sites were also conducted to record day-night statistical noise level trends. The data collected included the hourly average (L_{eq}), median (L_{50}), and the maximum level (L_{max}) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 3.12-6 and Table 3.12-7. Figure 3.12-1 shows the locations of the noise monitoring sites.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) model 812 and 831 precision integrating sound level meters equipped with ½" microphones. The measurement systems were calibrated using a B&K model 4230 acoustical calibrator before and after testing. The

measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

TABLE 3.12-6: EXISTING CONTINUOUS 24-HOUR AMBIENT NOISE MONITORING RESULTS

SITE	LOCATION	L_{DN} (DBA)	MEASURED HOURLY NOISE LEVELS, DBA LOW-HIGH (AVERAGE)					
			DAYTIME (7:00 AM - 10:00 PM)			NIGHTTIME (10:00 PM – 7:00 AM)		
			L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
LT-1	Highway 162	72	69	52	86	65	47	84
LT-2	South Humboldt Avenue at I-5	71	68	64	82	64	58	80
LT-3	Railroad	65	66	52	79	52	42	67

SOURCE – SAXELBY ACOUSTICS– 2019.

TABLE 3.12-7: EXISTING SHORT-TERM COMMUNITY NOISE MONITORING RESULTS

SITE	LOCATION	TIME[1]	MEASURED SOUND LEVEL, DB			NOTES
			L_{EQ}	L_{50}	L_{MAX}	
ST-1	Glennwood Lane / Pacific Avenue	2:14 PM	56	42	75	Primary noise source is traffic on Pacific Avenue. Secondary noise sources include activity from neighbors. Lmax caused by passing autos.
ST-2	Willows High School	9:39 AM	58	56	68	Primary noise source is traffic on West Wood Street. Secondary noise sources include activity from neighbors. Lmax caused by passing autos.
ST-3	Sycamore Park	2:51 PM	48	44	64	Primary noise source is traffic on South Culver Street. Secondary noise sources include activity from park-goers. Lmax caused by passing autos.
ST-4	Jensen Park	3:10 PM	52	46	70	Primary noise source is traffic on Elm Street. Secondary noise sources include activity from park-goers. Lmax caused by passing autos.
ST-5	East Willows	9:58 AM	45	43	56	Primary noise source is auto traffic on Sierra St. Secondary noise sources include local wildlife and distant train horn. Lmax caused by passing autos.

1 - ALL COMMUNITY NOISE MEASUREMENT SITES HAVE A TEST DURATION OF 10:00 MINUTES.

SOURCE - SAXELBY ACOUSTICS 2019.

The results of the community noise survey shown in Table 3.12-6 and 3.12-7 indicate that existing transportation (traffic and railroad) noise sources were the primary contributors of noise observed

in the City with commercial and industrial noise contributing to the ambient noise environment in some locations.

3.12.2 REGULATORY SETTING

FEDERAL

Federal Highway Administration (FHWA)

The FHWA has developed noise abatement criteria that are used for federally funded roadway projects or projects that require federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23CFR772).

Environmental Protection Agency (EPA)

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an Leq of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an Leq of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA Ldn as the basic goal for residential environments. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA Ldn, have generally agreed on the 65 dBA Ldn level as being appropriate for residential uses. At 65 dBA Ldn activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

The Department of Housing and Urban Development (HUD) was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Housing and Urban Development Act of 1965 (Public Law 89-117) “to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes.”

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

- 65 dBA Ldn or less - an acceptable zone where all projects could be approved.
- Exceeding 65 dBA Ldn but not exceeding 75 dBA Ldn - a normally unacceptable zone where mitigation measures would be required, and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA Ldn area and 10 dBA of attenuation in a 70 to 75 dBA Ldn area.

- Exceeding 75 dBA Ldn - an unacceptable zone in which projects would not, as a rule, be approved.

HUD's regulations do not include interior noise standards. Rather a goal of 45 dBA Ldn is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA Ldn or less, the interior level will be 45 dBA Ldn or less. Thus, structural attenuation is assumed at 20 dBA. However, HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan. With the exception of construction workers involved in facility construction, occupational noise is irrelevant to this study and is not addressed further in this document.

STATE

California Department of Transportation (Caltrans)

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 2011). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

Governor's Office of Planning and Research (OPR)

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 2003). The guidelines include land use compatibility guidelines for noise exposure.

Glenn County General Plan

The Glenn County General Plan Noise Element establishes goals and policies, as well as criteria for evaluating the compatibility of individual land uses with respect to noise exposure.

In the planning area of approximately 5,000 square miles, with a population density of about ten persons per square mile, and with most of its extensive mountain area in substantially unpopulated and undeveloped Federal land ownership, noise is a minor problem with respect to the total area.

General policy is to locate particular present or potential problem sites, identify noise sources, and provide for the reduction and/or reasonable control of noise through this plan element, precise plans based hereon, and appropriate regulatory measures to effectuate the proposals contained herein.

Noise in Area

Noise at or approaching problem magnitudes in the area is concentrated in the urban areas, at certain industrial operations, and along the corridors of transportation routes, air, railway and highway.

Urban and industrial noises and their sources are considered as a local noise problem subject to local attention, and related to but somewhat distinct from transportation noise, the control of which involves a number of Federal, State and local agencies.

It is plan policy to recognize and treat both fields of noise problems, each in a manner and to a degree considered reasonable and adequate for the best interests of the area and the comfort and convenience of its people.

Policy Regarding Needed Controls

Urban and industrial noise problems are generated by people and their local activities and in their use of land and equipment, and in their business and industrial operations.

Control of such noises and their sources is most effectively applied, as and when needed, by local City or County ordinances which include enforcement provisions which specify maximum permissible noise levels in relation to established ambient levels.

Controls of noises from transportation equipment and facilities, such as motor vehicles, railroad trains and aircraft, and their highways, tracks and airways, are almost entirely in the legal jurisdiction of Federal and State agencies.

The preparation of this Noise element was assisted by such agencies, and controls and preventive measures applied by or available through such agencies are incorporated herein.

Desired Maximum Levels in Land Use Areas

The intensity of sound, or noise, as detectable by the human ear, is measured in “Decibel” units. For purposes of this element, the A-weighted decibel unit, (dBA), as registered on commercial sound level meters, is used in relation to surface noises.

Highway Design Standards

The following is a summary of Federal standards for use in the design of roads and highways which are applicable with minor variations in California, and which are proposed element guides.

Land Use Category	Desired Ambient Level – L_{10}
A. Unique and unusual tracts of land in which serenity and quiet are of extraordinary significance and preservation of those qualities if the area is to continue to serve its intended purpose.	60 dBA (Exterior)

Land Use Category	Desired Ambient Level – L_{10}
B. Residential areas, schools, churches, libraries, hospitals, and so forth.	70 dBA (Exterior)
C. Other developed land not included in (A) and (B) and generally constituted by urbanized businesses or industrialized areas.	75 dBA (Exterior)
D. Special condition sites, areas, or activities. The design noise level should be established, based on the merit of the specific case and an analysis-of the acceptable level.	(Exterior or Interior)

Land Use Classification Standards

The following standards are proposed as generally desirable ambient exterior noise level guides to be used together with other basic plan elements and in the future planning and location of noise-sensitive land uses and developments in relation to noise generating uses and facilities.

Land Use Classification		Desired Ambient Level, dBA	
Residential, rural-suburban:	10 PM to 7 AM	40 – 45	– 60*
	7 AM to 10 PM	45 – 50	
Residential, suburban:	10 PM to 7 AM	45 – 50	– 65*
	7 AM to 10 PM	50 – 55	
Residential, low density urban:	10 PM to 7 AM	50 – 55	– 70*
	7 AM to 10 PM	55 – 60	
Residential, med/high density:	10 PM to 7 AM	55 – 60	– 70*
	7 AM to 10 PM	60 – 75	
Commercial zones, districts:	10 PM to 7 AM	65 – 70	
	7 AM to 10 PM	70 – 75	
Industrial zones, districts:	24 hours	75	

*Proposed where transportation noise is a significant factor.

NOTE: It is expected that some periodic peak noises from various agricultural and forestry operations which are common and established operations within the area may exceed the above desired ambient levels.

The above standards are intended to be applied with careful attention to the particular City or County area conditions, such as size and nature of development and expansion area, mixture of uses and spacing of mixed uses, present ambient level, etc.

The following are summarized noise level standards established by the Department of Housing and Urban Development for residential mortgaging estimates, construction projects and new housing.

General External Exposure, dBA	*NEF ZONES, Airport Environs
1. Unacceptable:	
a. Exceeds 80, 60 min. per 24 hours	Greater than 40*
b. Exceeds 75, 8 hours per 24 hours	
2. Discretionary, Normally Unacceptable:	
a. Exceeds 65, 8 hours per 24 hours	Between 30* &
b. Loud repetitive sounds on site	40*
3. Discretionary, Normally Acceptable:	
a. Does not exceed 65 more than 8 hours per 24 hours	Less than 30*
4. Acceptable:	
a. Does not exceed 45 more than 30 minutes per 24 hours	Less than 30*

*NEF = "Noise Exposure Forecast," HUD Noise Assessment Guidelines.

Because the foregoing HUD standards also apply to FHA financing of residential housing, they must be given particular attention and be related closely to the preceding and use classification standards if and when a local jurisdiction considers application of non-transportation noise regulations.

Noise from Transportation Facilities Standards

The State law definition of the Noise element mentions only, and so gives primary importance, to noise generated by transportation facilities:

1. Highways and Freeways
2. Ground rapid transit systems
3. Ground facilities associated with all airports operating under permit from the State Department of Aeronautics

Since ground rapid transit systems do not exist in the planning area except in the mild form of limited bus operation on public roads and highways, and since area airports are general aviation operations not used for the scheduled airline purposes or for large commercial jet engine aircraft, this Noise element plan directs primary attention to highway and freeway noise problems in the area.

Control of noise related to motor vehicles, aircraft, and railroad equipment is under the jurisdiction of Federal and State agencies. For this reason, this plan element is designed to present information useful for planning purposes rather than to propose specific local control standards for transportation facilities.

Under the State law, the agencies responsible for the construction and maintenance of major transportation facilities are obligated to provide present and projected noise levels for their facilities. Therefore, in this planning area, the State Department of Transportation is the major contributor of such information.

Standards for Basic Information

Two recognized methods for presenting the present and projected noise level information are available from the California Department of Transportation, Division of Highways:

a. "Test Method No. Calif. 701-A," mean truck noise levels for diesel trucks.
b. "L_{10} Method," the sound level that is exceeded ten percent of the time (the 10^{th} percentile) for the period under consideration. This value is an indicator of both the magnitude and frequency of occurrence of the loudest noise events.

Both the U.S. Department of Transportation and the U.S. Department of Housing and Urban Development accept the L_{10} Method, rather than the California Method. The Department of Transportation has provided L_{10} Method data for 1974 and projected 1995 noise contour mapping of urban areas, together with section drawings from which to apply Calif. 701-A Method data along low traffic volume rural routes on an interim basis.

c. Government Code Sec. 65302(g) Standards

Data Sources	dBA Map Contours
From LIQ data, meter readings, (or California Method charts, etc.):	
1. Freeways and Highways -	Down to 65
2. At hospitals, rest homes, long-term medical or mental care, or outdoor recreation areas (as appropriate) -	Down to 45

d. Airport Ground Facilities and Aircraft

The following noise level standard is proposed as a goal for existing airports and a control for future airports where residential or hospital, etc. uses as above are located adjacent to, or in close proximity to the airport boundaries.

Location of Sound Level Reading	*CNEL Reading
At airport boundary adjacent to residential, etc. use areas	65 dBA

*CNEL = "Community Noise Equivalent Level," in decibels, represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and night-time periods relative to daytime periods.

General Policy Statements re. Standards, Goals

This Noise element is designed to provide a guide for local jurisdictions to use in relation to their particular needs and conditions. It is adaptable for adoption in this form as the broad General Plan element and may be revised or supplemented as particular needs dictate.

Standards contained herein are derived from State and Federal agency sources, and in most cases were developed specifically for such General Plan and related purposes.

Goals of the plan element are to provide the general guide and sufficient detail to identify noise problems, present basic standards for their reduction and/or control and indicate methods to effectuate such controls.

The element and its effective application in the planning area has value in that it may produce a more pleasant "people" environment through reduction and control of noise pollution which has been proven to have, at certain levels, adverse effects upon the physical and mental well-being of; persons subjected to such pollution.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Generate excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions.

TRANSPORTATION NOISE INCREASE CRITERIA

Table 3.12-8 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the Ldn.

TABLE 3.12-8: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, L_{DN}	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.12-8 data, an increase in the traffic noise level of 1.5 dB or more would be significant where the pre-project noise level exceeds 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 75 dB Ldn. The rationale for the Table 3.12-8 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

These transportation noise thresholds of significance shown in Table 3.12-8 are established by the proposed General Plan via Policy N-1.4.

NON-TRANSPORTATION NOISE INCREASE CRITERIA

Stationary and Non-Transportation Noise Sources - A significant impact will occur if the project results in an exceedance of the noise level standards contained in Table N-3 of the General Plan Noise Element, or the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.12-9 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v).

TABLE 3.12-9: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		HUMAN REACTION	EFFECT ON BUILDINGS
MM/SEC.	IN./SEC.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	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 normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

Construction activities may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams, pile drivers) are used. Construction activities often include demolition of existing structures, excavation, site preparation work, foundation work, and new building framing and finishing.

For structural damage, the California Department of Transportation uses a vibration limit of 0.5 inches/second, peak particle velocity (in/sec, PPV) for buildings structurally sound and designed to modern engineering standards.

Table 3.12-10 presents typical vibration levels that could be expected from construction equipment at a distance of 25-100 feet. The highest levels of vibration typically occur from pile driving operations. Pile driving vibrations are typically below 0.5 in/sec, PPV at distances of 50 feet or more.

TABLE 3.12-10: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	P.P.V. @ 25 FEET (INCHES/SECOND)	P.P.V. @ 50 FEET (INCHES/SECOND)	P.P.V. @ 75 FEET (INCHES/SECOND)	P.P.V. @ 100 FEET (INCHES/SECOND)
Pile Drive (Impact)	0.644	0.226	0.124	0.080
Pile Drive (Sonic)	0.170	0.060	0.033	0.021
Large Bulldozer	0.089	0.031	0.017	0.011
Loaded Trucks	0.076	0.027	0.015	0.010
Small Bulldozer	0.003	0.001	0.000	0.000
Auger/Drill Rigs	0.089	0.031	0.017	0.011
Jackhammer	0.035	0.012	0.006	0.004
Vibratory Hammer	0.070	0.025	0.0135	0.009
Vibratory Compactor/Roller	0.210	0.074	0.040	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: General Plan implementation may result in exposure to significant traffic noise sources (Less-Than-Significant)

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop Ldn (24-hour average) noise contours for all highways and major roadways in the General Plan study area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing (2019) and Proposed 2040 General Plan Buildout volumes were obtained from the traffic modeling performed for the General Plan study area. Day/night traffic distributions were based upon continuous hourly noise measurement data and Saxelby Acoustics file data for similar roadways. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers.

Table 3.12-11 shows the future noise levels and the increase in noise levels associated with traffic on the local roadway network under the proposed General Plan, versus the existing (Baseline 2019) conditions.

TABLE 3.12-11: EXISTING (2019) VS. PROPOSED 2040 GENERAL PLAN

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS				
		BASELINE (2020)	PROPOSED GP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Wood Street	Washington St to Murdock Ave	63.4	63.7	0.3	+3.0 dB	No
County Road 57	Road D to I-5 SB Ramps	46.5	46.6	0.1	+1.5 dB	No
N Tehama	French Street to SR 162	61.0	61.4	0.4	+3.0 dB	No
N Tehama	SR 162 to W. Willow St.	59.9	60.2	0.3	+1.5 dB	No
Highway 99W	Road M to County Road 57	52.9	53.2	0.3	+1.5 dB	No
Highway 99W	County Road 57 to South Ct	57.6	57.9	0.3	+1.5 dB	No
Wood Street	N. Tehama St to N. Colusa St.	65.4	65.7	0.3	+3.0 dB	No
County Road 57	Hwy. 99W to Road M	58.2	58.6	0.4	+1.5 dB	No

[1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS TRANSPORTATION CONSULTANTS, CALTRANS, AND SAXELBY ACOUSTICS 2022.

Buildout of the General Plan may contribute to an exceedance of the City's transportation noise standards and/or result in significant increases in traffic noise levels at existing sensitive receptors. As indicated by Tables 3.12-11, the related traffic noise level increases with a circulation system buildout of the proposed 2040 General Plan are predicted to increase between 0.1 to 0.4 dB versus the existing (2019) conditions.

General Plan Policies N-1.1 through N-1.8, and Action N-1a, identified below, are intended to minimize exposure to excessive noise, including noise associated with traffic. Specifically, Policies N-1.1 through N-1.8 support noise-compatible land uses in the vicinity of traffic noise sources and require that new development and infrastructure projects be reviewed for consistency with the noise standards established in Tables N-1 and N-2. The proposed General Plan standards required under Policy N-1.3, for exposure to traffic noise meet or exceed the noise level standards of the adopted General Plan.

As shown in Table 3.12-11, the traffic noise increases associated with the proposed General Plan comply with the applicable test of significance. Therefore, the proposed General Plan would have a **less-than-significant** impact relative to traffic noise on existing noise-sensitive uses in the City.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

GOAL N-1

Preserve and enhance the existing and future noise environment by minimizing exposure to harmful and excessive noise throughout the community

Policies

N-1.1 Consider the noise compatibility of existing and future development when making land use planning decisions.

N-1.2 Require development projects and changes to existing uses to be consistent with the standards indicated in Table N-1 to ensure acceptable noise levels for existing and future development.

N-1.3 Require new development to reduce excessive noise to the standards indicated in Tables N-1 and N-2 through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise-tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials.

N-1.4 Ensure that new development does not result in indoor noise levels exceeding 45 dBA Ldn for residential uses by requiring the implementation of construction techniques and noise reduction measures for all new residential development.

N-1.5 Require acoustical studies for new noise-generating and noise-sensitive developments, and transportation improvements that would increase roadway capacity, move traffic closer to sensitive receptors.

N-1.6 For projects that are required to prepare an acoustical study, the following stationary and transportation noise source criteria shall be used to determine the significance of those impacts.

Stationary and Non-Transportation Noise Sources

- A significant impact will occur if the project results in an exceedance of the noise level standards contained in this element, or for instances where the ambient noise level is already above the standards contained in this element, the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater.
- This does not apply to construction activities which are conducted according to the best practices outlined in Action N-1b. Compliance with these requirements shall be sufficient to reduce temporary construction-related noise impacts to a less than significant level.

Transportation Noise Sources

- Where existing traffic noise levels are 60 dB Ldn or less at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in roadway noise levels will be considered significant;
- Where existing traffic noise levels are greater than 60 dB Ldn and up to 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in roadway noise levels will be considered significant; and

- Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB Ldn increase in roadway noise levels will be considered significant.

N-1.7 Work with Caltrans to ensure that adequate noise studies are prepared and alternative noise mitigation measures are considered in State transportation projects.

N-1.8 Support noise-compatible land uses along Highway 99 / S Tehama St, and Interstate 5.

N-1.9 Regional and pass-thru truck traffic shall comply with Chapter 10.40 of the Willows Municipal Code (Truck Routes).

N-1.10 Work cooperatively with the Glenn County Airport Land Use Commission to minimize noise impacts from airspace activities in Willows, such as airplane and helicopter flights.

N-1.11 Temporary special events including, but not limited to, festivals, concerts, parades, and other similar activities may be allowed to exceed the noise standards established in this General Plan through approval and issuance of a special event permit.

N-1.12 Temporary emergency operations or emergency equipment usage may be exempt from noise standard criteria set by this element.

N-1.13 Require proposed developments in close proximity to rail lines (within 100 feet or less of the rail line measured from the property line of proposed development) to demonstrate that groundborne vibration and noise nuisance associated with rail operations have been adequately addressed and would not exceed the Federal Transit Administration guidelines prior to approving the development of sensitive uses.

Actions in Support of Goal N-1

N-1a N-1a Require that new discretionary development projects to be reviewed for compliance with the noise requirements established in this element, including the standards established in Tables N-1 and N-2, and where necessary, require mitigation measures to achieve the noise standards. As applicable the City should:

- Require acoustical studies for new discretionary development projects which have the potential to generate noise impacts which exceed the standards identified in this element. The studies shall include representative noise measurements, estimates of existing and projected noise levels, and mitigation measures necessary to ensure compliance with the noise standards included in this element.
- Require developers to prepare a construction management/noise mitigation plan that defines best management practices to reduce construction noise, and includes proposed truck routes as part of the entitlement process.
- Provide for additional scrutiny of potential noise impacts when considering approval of new "late-night activities" (land use activities operating from 11:00 p.m. to 6:00 a.m., not including the lawful, reasonable and customary

use of residential uses or professional offices that does not interfere with the reasonable use and enjoyment of other properties).

TABLE N-1: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

Land Use Category	Exterior Noise Exposure (Ldn)					
	55	60	65	70	75	80
Single-Family Residential						
Multi-Family Residential, Hotels, and Motels						
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Public Assembly						
Office Buildings, Business, Commercial, and Professional						
Industrial						

Note: It is expected that some periodic peak noises from various agricultural operations which are common and established operations within the area may exceed the above desired ambient levels.

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements

CONDITIONALLY ACCEPTABLE
Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design

UNACCEPTABLE
New construction or development should generally not be undertaken because mitigation was found to be infeasible to comply with noise element policies

TABLE N-2: STATIONARY (NON-TRANSPORTATION) NOISE SOURCE STANDARDS

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard (dBA)	
		Daytime (7am – 10pm)	Nighttime (10pm-7am)
Residential	L_{eq}	55	45
	L_{max}	70	65

Notes:
a) The residential standards apply to all properties that are zoned for residential use. The exterior noise level standard is to be applied at the property line of the receiving land use or at a designated outdoor activity area. For multi-family and mixed-use projects, the exterior noise level standard may be waived (at the discretion of the decision-making body) if the residential portion of the project does not include a designated activity area and mitigation of property line noise is not practical.
b) Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises. In no case shall mitigation be required to a level that is less than existing ambient noise levels, as determined through measurements conducted during the same operational period as the subject noise source.
c) In situations where the existing noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level of the noise source to the existing level plus 3 dB.

Impact 3.12-2: General Plan implementation may result in exposure to excessive railroad noise sources (Less than Significant)

Table 3.12-4 indicates that the 60 dBA L_{dn} railroad noise contours for the CNFR line may extend up to 55 feet from the railroad centerline. Future development located along these railroad lines could therefore be exposed to unacceptable exterior noise levels.

Specifically, Policies N-1.1 and N-1.5 support noise-compatible land uses in the vicinity of railroad noise sources and require that new development and infrastructure projects be reviewed for consistency with the noise standards established in Tables N-1 and N-2. The proposed General Plan standards required under Policy N-1.2, for exposure to railroad noise meet or exceed the noise level standards of the adopted General Plan. Policy N-1.13 and Actions N-1a would ensure that new development mitigates potential noise impacts through incorporating the noise control treatments necessary to achieve acceptable noise levels.

Implementation of these General Plan policies and actions would ensure that development allowed under the proposed General Plan is not exposed to noise levels associated with railroad operations in excess of the City's established standards. This is a **less than significant** impact.

Impact 3.12-3: Implementation of the General Plan could result in the generation of excessive stationary noise sources (Less than Significant)

Implementation of the General Plan could result in the future development of land uses that generate noise levels in excess of applicable City noise standards for non-transportation noise sources. Such land uses may include commercial area loading docks, industrial uses, HVAC equipment, car washes, daycare facilities, auto repair, and recreational uses. While the General Plan does not specifically propose any new noise generating uses, the Land Use Map includes industrial land use designations, which may result in new noise sources. Specific land uses that would be located in the city are not known at this time. Additionally, noise from existing stationary sources, as identified in the background section of this chapter, will continue to impact noise-sensitive land uses in the vicinity. New projects which may include stationary noise sources such as automotive

and truck repair facilities, tire installation centers, car washes, loading docks, corporation yards, parks, and play fields may create noise levels in excess of the City's standards.

While no specific projects are proposed under the general plan update, changes in land use zoning may allow for more intensive noise-generating uses in closer proximity to noise-sensitive uses. Where this occurs, detailed noise studies would be required to ensure that noise control measures are implemented into the project design. Such measures could include facing loading docks of industrial buildings away from sensitive uses, construction of sound walls or berms between loading docks and sensitive uses, using buildings to create additional buffer distance and screening, or other site design measures to ensure that non-transportation (stationary) noise sources do not cause exterior noise levels to exceed allowable standards at sensitive receptors.

For example, a typical busy loading dock for a warehouse might generate noise levels of approximately 66 dBA L_{eq} at a distance of 100 feet, as shown in Table 3.11-5. This would exceed the City's proposed stationary noise standards of 55 dBA L_{eq} (daytime) and 45 dBA L_{eq} (nighttime). Construction of a 12-foot-tall sound wall would reduce loading dock noise levels to approximately 53 dBA L_{eq} (Appendix D-1). For a daytime use loading dock, this would be sufficient to meet the City's 55 dBA L_{eq} daytime noise standard. For a loading dock which requires nighttime operation, a sound wall would not be sufficient to achieve the 45 dBA L_{eq} nighttime noise standard. To achieve the nighttime noise standard, the distance from the loading dock would need to be increased to 250 feet for the 12-foot-tall wall to achieve the 45 dBA L_{eq} nighttime standard (Appendix D-2). Alternatively, the loading docks could face internal to the project site and the industrial building could be used to screen loading dock noise. In this case the loading dock could be located 150 feet from a sensitive receptor, assuming it was screened by a 20-foot-tall building (Appendix D-3). This would achieve the City's 45 dBA L_{eq} nighttime noise standard. While this is just a theoretical scenario, it illustrates that use of site design measures, screening walls, etc. can be sufficient to achieve compliance with the City's stationary noise standards, even when more intensive uses are proposed in closer proximity to sensitive receptors.

The General Plan includes policies and actions that are intended to reduce noise associated with stationary sources. Specifically, Policies N-1.1 through N-1.6 and Action N-1a would reduce noise associated with stationary sources. Implementation of the proposed policies and actions of the General Plan will reduce noise impacts from stationary noise sources to a **less than significant** level.

Impact 3.12-4: General Plan implementation may result in an increase in construction noise sources (Less than Significant)

New development, maintenance of roadways, and installation of public utilities and infrastructure generally require construction activities. These activities include the use of heavy equipment and impact tools. Table 3.12-12 provides a list of the types of equipment which may be associated with construction activities, and their associated noise levels.

TABLE 3.12-12: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	PREDICTED NOISE LEVELS, LMAX DB				DISTANCES TO NOISE CONTOURS (FEET)	
	NOISE LEVEL AT 50'	NOISE LEVEL AT 100'	NOISE LEVEL AT 200'	NOISE LEVEL AT 400'	70 DB LMAX CONTOUR	65 DB LMAX CONTOUR
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006. Saxelby Acoustics, LLC 2019.

Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Construction could result in periods of significant ambient noise level increases and the potential for annoyance. However, the proposed General Plan includes policies and actions that are intended to reduce noise associated with construction noise (listed below). Specifically, Action N-1b would reduce noise associated with construction noise. Implementation of the proposed policies and actions of the General Plan will ensure noise impacts from construction are **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

N-1b *Update the Municipal Code to include the following construction noise best practices and requirements:*

- *Establish standards for when a construction staging and phasing plan shall be required for new development projects and significant remodels.*
- *At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.*
- *Unnecessary idling of internal combustion engines shall be prohibited.*
- *Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.*

- *The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

Impact 3.12-5: General Plan implementation may result in exposure to excessive aircraft noise sources (Less than Significant)

Implementation of the General Plan could result in the creation of new noise-sensitive land uses within the 60 dB CNEL noise contours contained within the Willows-Glenn County Airport Comprehensive Land Use Plan, as shown by Figure 3.12-2. Additionally, the implementation of the 2030 General Plan may result in the creation of new noise-sensitive land uses within over-flight areas of the Willows Airport, thereby presenting the potential for annoyance from single event noise.

Single-event noise associated with aircraft overflights is also of concern when evaluating aircraft noise effects in terms of land use compatibility. Single-event noise is the maximum sound level produced by an individual approach overflight at a specific location, often described in terms of L_{max}, which is the maximum sound level recorded for each event. A different measurement is single-event noise, also commonly used when evaluating aircraft noise, is the SEL. The SEL describes the event's mean energy level over the duration of the noise event. As would be expected, single-event noise levels for aircraft overflights within the Planning Area would be greatest and most frequent near the airport's primary flight paths.

General Plan Policies N-1.1 through N-1.5, and Action N-1a, identified below, are intended to minimize exposure to excessive noise, including noise associated with aircraft noise sources. Specifically, Policies N-1.1 through N-1.5 support noise-compatible land uses in the vicinity of aircraft noise sources and require that new development projects be reviewed for consistency with the noise standards established in Tables N-1 and N-2. The proposed General Plan standards required under Policy N-1.3, for exposure to aircraft noise meet or exceed the noise level standards of the adopted General Plan.

The General Plan includes policies and actions intended to reduce noise impacts throughout the County. With the implementation of the General Plan policies and actions, the noise impact relative to airports would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

Policies

N-1.1 Consider the noise compatibility of existing and future development when making land use planning decisions.

N-1.2 Require development projects and changes to existing uses to be consistent with the standards indicated in Table N-1 to ensure acceptable noise levels for existing and future development.

N-1.3 Require new development to reduce excessive noise to the standards indicated in Tables N-1 and N-2 through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise-tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials.

N-1.4 Ensure that new development does not result in indoor noise levels exceeding 45 dBA Ldn for residential uses by requiring the implementation of construction techniques and noise reduction measures for all new residential development.

N-1.5 Require acoustical studies for new noise-generating and noise-sensitive developments, and transportation improvements that would increase roadway capacity, move traffic closer to sensitive receptors.

N 1.10: Work cooperatively with the Glenn County Airport Land Use Commission to minimize noise impacts from airspace activities in Willows, such as airplane and helicopter flights.

Actions in Support of Goal N-1

N-1a Require that new discretionary development projects to be reviewed for compliance with the noise requirements established in this element, including the standards established in Tables N-1 and N-2, and where necessary, require mitigation measures to achieve the noise standards. As applicable the City should:

- Require acoustical studies for new discretionary development projects which have the potential to generate noise impacts which exceed the standards identified in this element. The studies shall include representative noise measurements, estimates of existing and projected noise levels, and mitigation measures necessary to ensure compliance with the noise standards included in this element.

Impact 3.12-6: General Plan implementation may result in construction vibration (Less than Significant)

Construction activities facilitated by the proposed General Plan may include demolition of existing structures, site preparation work, excavation of below grade levels, foundation work, pile driving, and new building erection. Demolition for an individual site may last several weeks and at times may produce substantial vibration. Excavation for underground levels may also occur on some project sites and vibratory pile driving could be used to stabilize the walls of the excavated area. Piles or drilled caissons may also be used to support building foundations.

While typical construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors located further than 25-feet, should pile driving be required within 50 feet of an existing structure, these impacts may be considered significant. With implementation of Action N-2d below would ensure that construction vibrations do not cause damage to any adjacent structures, and thus, the proposed project would result in a **less than significant** impact relative to this environmental topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

N-2d: If pile driving is required within 50 feet of an existing structure, pre-construction crack documentation and construction vibration monitoring shall be conducted to ensure that construction vibrations do not cause damage to any adjacent structures. The results of the documentation and monitoring shall be submitted to the City Community Development Department prior to the start of construction activities which would occur within 50 feet of an existing structure.

Impact 3.12-7: General Plan implementation may result in exposure to groundborne vibration (Less than Significant)

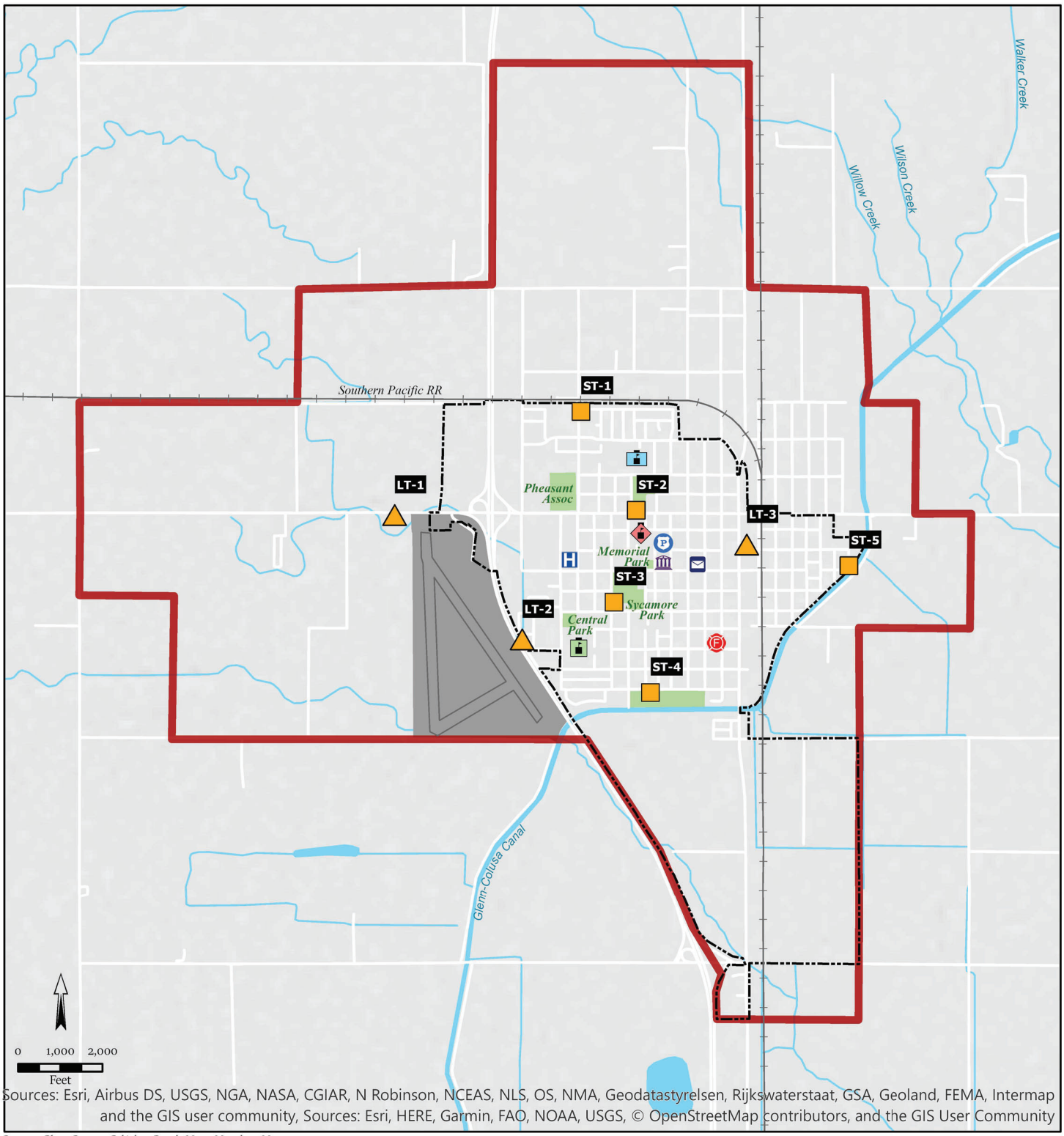
Development facilitated by the General Plan could expose persons to excessive groundborne vibration levels attributable to trains. The proposed locations of buildings and their specific sensitivity to vibration are not known at this time; however, such uses located in close proximity to railroad tracks could be exposed to ground vibration levels exceeding FTA guidelines.

The proposed General Plan includes Policy N 1.13 which requires that individual development projects undergo project-specific environmental review and address potential vibration impacts associated with railroad operations. If project-level significant vibration impacts are identified, specific mitigation measures will be required under CEQA. The implementation of this policy would limit potential groundborne vibrations associated with railroad operations to a **less than significant** level.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

ACTIONS

N 1.13: Require proposed developments in close proximity to rail lines (within 100 feet or less of the rail line measured from the property line of proposed development) to demonstrate that groundborne vibration and noise nuisance associated with rail operations have been adequately addressed and would not exceed the Federal Transit Administration guidelines prior to approving the development of sensitive uses.



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Sources: Glenn County; CalAtlas; Google Maps. Map date: May 22, 2019.

LEGEND

- City of Willows
- Willows Sphere of Influence
- Park
- Willows-Glenn County Airport
- Murdock Elementary School
- Willows Intermediate School
- Willows High School
- Glenn-Willows Medical Center
- Fire Department
- Police Department/Library/City Hall
- Memorial Hall
- US Post Office
- Nose Measurement Sites - Short Term
- Noise Measurement Sites - Long Term

FIGURE 3.12-1 Noise Measurement Locations

CITY OF WILLOWS

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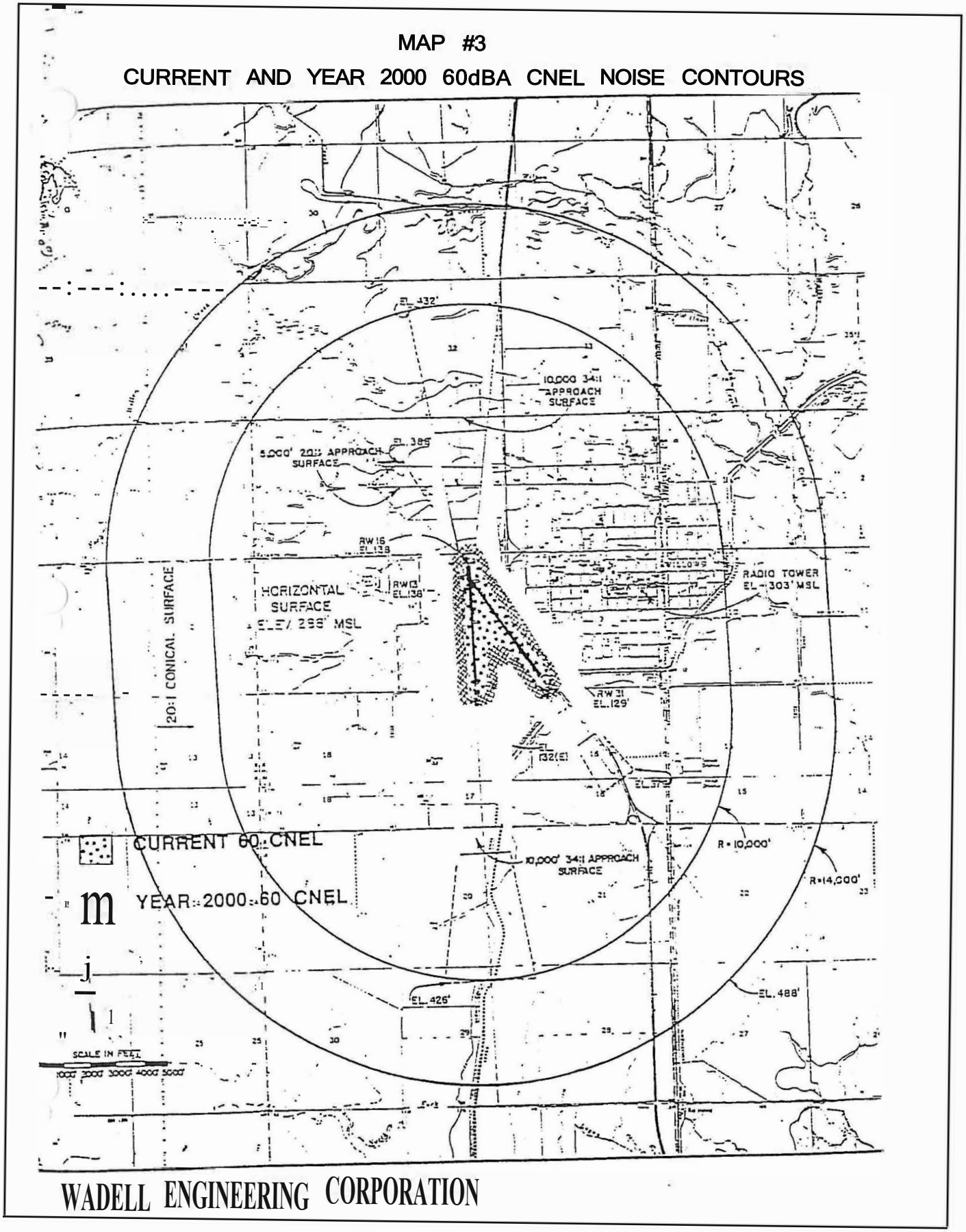

COUNTY OF GLENN, CALIFORNIA

FIGURE 3.12-2 Willows-Glenn County Airport Noise Contours

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Public services such as fire and police protection are vital to maintaining a safe and healthy community. Educational services serve as a foundation for providing citizens with the skills and resources to excel today and in the future. There are many other public services that are important to a community, such as parks and recreational opportunities, libraries, museums, hospitals, and other healthcare facilities.

This section provides a background discussion and analysis of fire protection services, police services, schools, parks and recreational facilities, libraries, and other community facilities and services. This section is organized with an existing setting, regulatory setting, and impact analysis.

Utilities services, including water, sewer, and solid waste disposal are addressed in Chapter 3.15 (Utilities and Service Systems) of this Draft EIR.

No comments were received during the NOP comment period regarding this environmental topic.

3.13.1 ENVIRONMENTAL SETTING

FIRE PROTECTION SERVICES

The Willows Fire Department is responsible for fire suppression, emergency medical services, rescue services, coordination of City-wide disaster response efforts, enforcement of fire and life safety codes, enforcement of State and Federal hazardous materials regulations, and investigation of fire cause, arson and other emergency events for cause and origin.

Willows Fire Department

Willows Fire Department provides fire suppression, hazard materials first responder, rescue and Basic life support services.

The Operations Division is responsible for the following:

- **Suppression-** Individual fire companies are specially trained to respond to residential fires, commercial fires, industry related incidents, wildland fires and vehicle extrications.
- **Emergency Medical Services-** Medical service is provided at a Basic Life Support function through trained Emergency Medical Technician (EMT) and First Responders. The department is non transport, with our primary transport Advanced Life Support (ALS) unit provided by Enloe Medical Center from Willows, and secondary transport by West Side Ambulance from Orland.

The Fire Prevention Division provides the following services:

- **Code Enforcement-** inspections of public and private properties for unabated hazardous and/or combustible fuels (including weeds) which would allow a fire to travel from property to property.
- **Inspections-** annual inspection per fire code on commercial occupancy, licensed daycare and adult care facilities-on site inspections of commercial tenant improvement and new construction.

- **Plan Review-** review of construction plans and specifications for compliance with local and state requirements.
- **Fire Investigation-** determining the origin and cause of fire and the investigations of fire related incidents. This function is divided among several members of Willows Fire department whom have had specialized training. These members are also part of the Glenn County Bomb and Arson Task Force.

The WFD employs 4 full time (career) personnel, 28 volunteer firefighters, 10 warden company members and 12 Auxiliary personnel. Daily staffing is 1 engineer, providing round-the-clock immediate service, and a fire chief who works a 40 hour schedule. The City of Willows Fire Department and the Willows Rural Fire Protection district are supported by a volunteer force, who provide firefighting service for both the City and Rural Departments. Response times of the Willows Fire Department average 4 minutes per call.

Fire engine types are placed into category types that are used in the Incident Command System, and as a means of organizing multiagency resources through the National Interagency Fire Center. The City and the Rural District maintain a variety of fire apparatus and equipment in order to meet the public safety need of our service area that includes major highways and streets, undeveloped residential/commercial and wildland areas.

- Willows Fire Department: two type 1 engines, one quint aerial ladder and two staff vehicles.
- Willows Rural Fire Protection District: two type 3 engines, one type 6 fire engine one water tender, and specialty air cascade trailer

Other specialty trailers include:

- Aux Trailer- Owned by the Willows Fire Department Auxiliary.
- Arson and Bomb- Owned by Glenn County Office of Emergency Services.

The Willows Fire Department Auxiliary provides firefighting rehabilitation service during major incidents and assists with fund raising for the department.

The WFD boundaries spread over about 78 square miles. The location of the existing WFD fire station is presented in Figure 3.13-1.

The WFD responds, not only to fires of all types, but also medical emergencies, traffic accidents, and river rescues. The WFD is an active member of the Glenn County Bomb and Arson team ran out of the Willows Fire station. All fires are investigated to determine their cause and origin (City of Willows, 2019).

Fire investigation is a vital function of the WFD fire service. Several members of the WFD have received specialized training in fire origin and cause determination (City of Willows, 2019).

Willows Rural Fire Protection District

The Willows Rural Fire Protection District includes the area around the City of Willows in unincorporated Glenn County; which has a population of approximately 3,000, and covers approximately 78 square miles. The Willows Rural Fire Protection District utilizes the Willows Fire Department station which is responsible for the emergency response activities for the City of Willows and surrounding communities. They offer a vast range of emergency services, public relations and fire safety education. The Fire District responds not only to fires of all types, but also medical emergencies, traffic accidents, and river rescues.

ISO Rating

The Insurance Services Office (ISO) rating measures individual fire protection agencies against a national Fire Suppression Rating Schedule which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm responses and initial attack, and adequacy of the local water supply for the fire suppression purposes. ISO ratings are on a scale of 1-10 with 1 being the highest rating. In 2013, ISO developed split classifications for some communities, which can represent the risk of loss more precisely. An example of a split classification system is 4/4X or 4/4Y. The first number refers to the classification of properties within 5 road miles of a fire station and within 1,000 feet of a creditable water supply. The second number, with either the X or Y designation, applies to properties within 5 road miles of a fire station but beyond 1,000 feet of a creditable water supply. ISO generally assigned Class 10 to properties beyond 5 road miles.

WILLOWS FIRE DEPARTMENT

According to the Willows Fire Department 2016 Annual Fire report, the ISO Public Classification Program rates the WFD as a community classification of 3 for the City of Willows- the lowest (best) in Glenn County.

WILLOWS RURAL FIRE PROTECTION DISTRICT

According to the Willows Fire Department 2016 Annual Fire report, the ISO Public Classification Program rates the Willows Rural Fire Protection District as a community classification of 6 for the District.

POLICE PROTECTION SERVICES

Law enforcement services in the City of Willows are provided through contract with the Glenn County Sheriff's Department. The Sheriff's Department also operates the County Jail, Dispatch, County Coroner and the County Office of Emergency Services (OES). The Glenn County Sheriff's office operates out of its headquarters located at 543 W. Oak Street, Willows and the jail is located adjacent at 141 S. Lassen Street, Willows**.** The Sheriff's Department also provides 24-hour dispatching services for the municipal police departments.

Organization

The Glenn County Sheriff's office is composed of thee (3) divisions: Operations, Support Services, and Jail. The Sheriff and Undersheriff are responsible for the administration and oversight of the division commanders.

OPERATIONS DIVISION

The Operations Division consist of Uniformed Patrol and Special Operations, which includes Traffic, Boating Enforcement, Police Aides/Assistants, Civil Unit, Court Security Unit, and Animal Control Unit. The operations Division in commanded by a lieutenant, and there are currently 3 sergeants, 1 detective, 11 deputies, 2 county service officers, 1 bailiff, 1 service clerk, and 4 public service employees assigned to the division.

SUPPORT SERVICES DIVISION

The Support Services Division consist of the major crimes unit, narcotics unit (G1.N.T.F.), evidence and property management, internal affairs, emergency services, volunteer services, communications, records, and clerical. The Support Services Division is commanded by a lieutenant, and there are currently 1 Administrative Services Officer, 3 detectives, 2 deputies, 1 California Highway Patrol Officer, 4 emergency dispatchers, 3 services clerks, and 3 public service employees assigned to the division.

JAIL DIVISION

The Jail Division consist of the Glenn County Jail facility and transportation unit. The Jail Division is currently commanded by an acting lieutenant, and there are 1 correctional sergeant, 4 correctional corporals, 15 correctional officer, 1 food manager, 1 cook, 1 service clerk, 1 supervising secured facilities maintenance technician, and a contracted medical unit assigned to the division.

Crimes by Category in Glenn County

Because the City of Willows contracts law enforcement services through the Glenn County Sheriff's Office, statistics on the number of crimes by category of crime in Glenn County during the year 2017, as reported by the Federal Bureau of Investigation (FBI) Criminal Justice Information Services Division, are shown in Table 3.13-1 below.

TABLE 3.13-1: GLENN COUNTY SHERIFF'S OFFICE CRIME STATISTICS (2017)

CATEGORY/CRIME	*2017*
Total Violent Crimes	**81**
Homicide	0
Rape	5
Robbery	6
Assault	70
Total Property Crimes	235
Burglary	100
Auto Theft	123
Larceny	12
Arson	2

SOURCE: FBI CRIME STATISTICS; HTTPS://UCR.FBI.GOV/.

As shown in the table, the majority of crimes committed in Glenn County consist of property crimes, primarily motor vehicle theft. Additionally, in 2017, there were no homicides reported in Glenn County.

PARKS AND RECREATIONAL FACILITIES

Parks and recreational facilities in the City of Willows are managed and maintained by the Recreation Department. The City of Willows Recreation Department website was the primary source of information for this section. Figure 3.13-1 identifies the City's parks.

Types of Parks

Community parks: Community parks are generally 15 to 25 acres in size, and include areas for active sports as well as space for family and group activities, such as picnicking. Community parks are larger in size than neighborhood parks and serve to fulfill the active and passive recreational needs of multiple neighborhoods. The community park serves the needs of local neighborhoods by providing a close to home site for more active recreation that is not typically suitable or physically possible in a neighborhood park (i.e. formal sports fields and courts with night lighting). Community parks and sports parks are where most organized activities provided by the Parks and Recreation Department and various league sports are intended to occur.

Neighborhood parks: Neighborhood parks serve as the focal point of neighborhood communities, the hub for both physical and social activities in a recreational setting that should be primarily passive. Appropriately designed neighborhood parks act as "pulse points" within the city. They are spaces that develop a sense of place while at the same time evolve to reflect the neighborhood they represent. Neighborhood parks act as critical building blocks of the city's image and assist in developing an overall sense of community and security. They also serve as critical nodes and access points in the city-wide green space network. Neighborhood parks are generally 5 to 7 acres. Amenities at neighborhood parks may include open multi-uses spaces, basketball, volleyball, bocce ball, and tennis courts, small picnic areas, playground equipment, restroom facilities, water play features, and barbeques.

Special use parks: The Special Use Parks allow for flexibility in providing recreational resources throughout the city-wide park space network. This classification is intended to accommodate special circumstances, unique site characteristics, etc. in park, trail, and recreation resources. These types of resources add diversity to the park network and accommodate a variety of non-traditional recreation amenities beyond the standard neighborhood, and community, park classifications.

City Parks

The City currently maintains four public facilities, managed by the City of Willows Recreation Department. The location of parks within the City is shown on Figure 3.13-1. Table 3.13-2 summarizes the City's parks and facilities.

TABLE 3.13-2: SUMMARY OF PARKS & RECREATION DEPARTMENT PARKS AND FACILITIES

PARK/FACILITY NAME	*ADDRESS*	*FACILITY TYPE*
Central Park	1150 West Laurel Street	Park
Jensen	380 Elm Street	Park
Sycamore Park	800 West Sycamore Street	Park
Willows Swimming Pool	815 Laurel Street	Park

SOURCE: CITY OF WILLOWS RECREATION, 2019

On a regional scale, there are currently four federal park facilities close to the City of Willows, including Mendocino National Forest and the Sacramento National Wildlife Refuge. The Forest offers a variety of recreational opportunities both in Glenn County and in adjacent counties, including camping, backpacking, boating, fishing, hunting, and off-highway vehicle use. There are two designated wildernesses: the 100,600 acre Yolla Bolly Middle Eel Wilderness, and the Snow Mountain Wilderness with approximately 37,200 acre.

The Sacramento National Wildlife Refuge is located south of the City of Willows adjacent to Interstate 5, of which approximately 8,555 acres located in Glenn County. The facility provides a wintering area for migratory waterfowl.

SCHOOLS

Most schools within the City of Willows are part of the Willows Unified School District (MUSD). The WUSD provides school services for grades kindergarten through 12 (K-12) within the City of Willows. Within the City of Willows, there is an elementary school (Murdock Elementary), one middle school (Willows Intermediate School) and two high schools (Willows High School and Willows Community High School). Willows has one charter elementary school (Walden Academy), located within the Glenn County Office of Education School District. Table 3.13-3 lists schools in Willows and the most recent enrollment for each school.

As shown in Table 3.13-3, the schools in the City had a total enrollment of approximately 1,648 students, of which 1,167 were enrolled in elementary and middle school (grades K – 8) and 481 were enrolled in high school (grades 9 – 12).

District-wide, WUSD Schools had a total enrollment of 1,465 students for the 2018-2019 school year.

TABLE 3.13-3: PUBLIC SCHOOLS SERVING WILLOWS

SCHOOL	*GRADES SERVED*	*ADDRESS*	*ENROLLMENT 2018-2019 SCHOOL YEAR*
Murdock Elementary	K-5	655 French Street	619
Walden Academy	K-8	1149 West Wood Street	183
Willows Intermediate School	6-8	1145 West Cedar Street	365
Total			**1,167**
Willows High School	9-12	203 North Murdock Avenue	466
Willows Community High School	10-12	823 West Laurel Street	15
Total			**481**

SOURCES: CALIFORNIA DEPARTMENT OF EDUCATION EDUCATIONAL DEMOGRAPHICS UNIT ENROLLMENT FOR 2018-19

OTHER PUBLIC FACILITIES

Willows Public Library

The Willows Public Library is located at 201 North Lassen Street. The Willows Public Library offers computer workstations for Internet and word processing use, a ready reference collection, and a circulating collection of popular materials in English and Spanish. Items include books, magazines, audiobooks, large print books, DVDs, and music CDs. In addition to the main library in Willows, there are branches in Bayliss and Elk Creek that serve the surrounding community. The Willows Public Library is open Tuesday through Thursday, from 11:00 to 7:00 PM, and Friday and Saturday from 11:00 to 5:00 PM.

Health Care

Health care facilities within Willows encompass Glenn General Hospital located in the City of Willows, Willows Care Center, residential care facilities, as well as private physicians and other medical practitioners.

Glenn General Hospital, a County operated hospital, provides acute care service for Willows and the surrounding community. The hospital is located at 1133 West Sycamore in the City of Willows. Glenn General Hospital offers 24-hour emergency care, outpatient care, general surgical care, outpatient surgical care, and minor heart surgery. The hospital sponsors an orthopedic clinic, a urology clinic, a cardiology clinic, podiatry clinic, gastroenterology clinic, neurology clinic, and obstetric-gynecology clinic.

Residents typically travel to other facilities, such as Enloe Hospital in Chico, for certain specialized services including burns, major heart surgery, and severe trauma and psychiatric care.

The Glenn County Public Health Department is organized under the Glenn County Health Services Agency and provides maternal and child health care programming, California Children's Services,

child health and disability programs, vaccinations and general public health nursing to the community. Alcohol & drug programs are also organized under the County Health Service Agency and provide residential treatment, out-patient counseling, perinatal programs and community education and information. Mental Health programs offered by the same agency provide services to citizens of all ages who have a demonstrated mental disorder or affective disorder. Services include but are not limited to in-patient services, residential services, out-patient counseling, medication monitoring and community education and referral.

3.13.2 REGULATORY SETTING

FEDERAL

There are no Federal regulations applicable to the environmental topics of public services and recreation.

STATE AND LOCAL

Fire Protection and Emergency Response

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

EMERGENCY RESPONSE/EVACUATION PLANS

The State passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

FIRE PROTECTION

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

CALIFORNIA FIRE CODE (CFC)

The CFC with the State of California Amendments contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Fire Code contains specialized technical regulations related to fire and life safety.

CALIFORNIA HEALTH AND SAFETY CODE

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), 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.

Parks and Recreation

QUIMBY ACT

The Quimby Act (California Government Code Section 66477) states that "the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map." Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The City has adopted park fees as allowed by the Quimby Act, as described in greater detail below.

CITY OF WILLOWS MUNICIPAL CODE

The Willows Municipal Code contains ordinances regulating park fees within the City of Willows. Chapter 19.05 provides for the City's Impact Fee Ordinance, which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 19.05.030 allows the City Council to authorize the adoption of fees for recreation programs and for the use of park facilities for non-city functions, and provides other provisions related to parks within the City of Willows.

Schools

CALIFORNIA CODE OF REGULATIONS

The California Code of Regulations, Chapter 4.9, Payment of Fees, Charges, Dedications, or Other Requirements Against a Development Project. *Section 65995-65998 (h)* The payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code in the amount specified in Section 65995 and, if applicable, any amounts specified in Section 65995.5 or 65995.7 are hereby 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, or any change in governmental organization or reorganization as defined in Section 56021 or 56073, on the provision of adequate school facilities.

CALIFORNIA DEPARTMENT OF EDUCATION

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses; and
- Traffic and school bus safety issues.

THE KINDERGARTEN-UNIVERSITY PUBLIC EDUCATION FACILITIES BOND ACT OF 2002 (PROP 47)

This act was approved by California voters in November 2002 and provides for a bond issue of $13.05 billion to fund necessary education facilities to relieve overcrowding and to repair older schools. Funds will be targeted at areas of greatest need and must be spent according to strict accountability measures. Funds will also be used to upgrade and build new classrooms in the California Community Colleges, the California State University, and the University of California in order to provide adequate higher education facilities to accommodate growing student enrollment.

LEROY F. GREENE SCHOOL FACILITIES ACT OF 1998 (SB 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the $9.2 billion education bond act approved by the voters in November 1998 known as "Proposition 1A", reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and

counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.

- Level II fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district's bonding capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.

- Level III fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

3.13.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on public services and recreation 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; and
    - Other public facilities.
- An increase in 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
- If it includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: General Plan implementation could result in adverse physical impacts on the environment associated with the need for new governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts (Less than Significant)

Development accommodated under the General Plan would result in additional residents and businesses in the City, including new residential, industrial, office, and commercial uses. As described in Chapter 2.0, buildout of the General Plan could yield a total of up to approximately 689 housing units and approximately 717,834 square feet of non-residential building square footage within the City Limits. Buildout of the General Plan could yield a total of approximately 137 to 411 housing units and approximately 68,399 square feet of non-residential building square footage within the Willows SOI.

Development and growth facilitated by the General Plan would result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The General Plan includes policies and actions to ensure that public services are provided at acceptable levels and that the City will maintain and implement public facility master plans, in collaboration with appropriate outside service providers and other agencies, to ensure

compliance with appropriate regional, state, and federal laws and to provide efficient public facilities and services to Willows.

As the demand for services increases, there will likely be a need to address acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire facilities, libraries, etc.) will be needed to provide for adequate staffing, equipment, and appropriate facilities to serve growth in the city. Existing facilities may be expanded at their current location. New facilities may also be constructed. The Public Facilities (PF) and Services land use designations could accommodate new public facilities necessary to provide community services. There would likely be environmental impacts associated with the construction or expansion of the facilities needed to provide public services.

The General Plan does not propose or approve actual development projects, or the physical expansion of public facilities. As future development and infrastructure projects (including new governmental facilities) are considered by the City, each project will be evaluated for conformance with the General Plan, Municipal Code, and other applicable regulations. Such development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Any future expansion of public facilities required by growth in the City would be required to be reviewed for site-specific impacts.

As previously stated, new facilities will be needed to serve growth contemplated in the General Plan. The environmental effect of providing the public services is associated with the physical impacts of providing new and expanded facilities. The specific impacts of providing new and expanded facilities cannot be determined at this time, as the General Plan does not propose or authorize development nor does it designate specific sites for new or expanded public facilities. However, the facilities would be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the governmental facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the General Plan. These impacts are described in the relevant chapters (Chapters 3.1 through 3.16, and 4.0) of this Draft EIR. Any future development under the General Plan would be required to comply with regulations, policies, and standards included in the General Plan, and would be subject to CEQA review as appropriate.

The General Plan includes a range of policies and actions (listed below) to ensure that public services adequately accommodate growth, maintain community services and facilities, and that new development funds its fair share of services. Therefore, impacts related to the provisions and need for public facilities are **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

SAFETY ELEMENT POLICIES

SA 4.1: Provide adequate funding for fire and law enforcement services, facilities and personnel to accommodate existing and future citizens' needs to ensure a safe and secure environment for people and property.

SA 4.2: Emphasize the use of physical site planning as an effective means of enhancing safety and preventing crime. Open spaces, landscaping, parking lots, parks, play areas and other public spaces should be designed with maximum feasible visual exposure to community residents.

SA 4.3: Ensure that fire and emergency medical services meet existing and future demand.

SA 4.4: Ensure that adequate water supplies are available for fire-suppression throughout the City.

SA 4.5: Support efforts to remedy any deficiencies in the water delivery system to ensure adequate fire-suppression flows.

SA 4.6: Require development to construct and fund all fire suppression infrastructure and equipment needed to provide adequate fire protection services.

SA 4.7: Promote fire safety through education and building design.

SA 4.8: Promote public outreach to increase community safety. Public outreach should include information related to defensible space and evacuation routes.

SA 4.9: Ensure development projects are reviewed for consistency with consistent with the Glenn County Multi-Jurisdiction Hazard Mitigation Plan.

SAFETY ELEMENT ACTIONS

SA-4a: As part of the development review process, consult with the Sheriff's Department in order to ensure that the project does not impair the provision of law enforcement services through inappropriate site design. The use of physical site planning as an effective means of preventing crime, including lighting, visibility, and video surveillance requirements shall be determined by the Department, where applicable.

SA-4b: As part of the development review process, consult with the Fire Department in order to ensure that development projects facilitate adequate fire services and fire prevention measures.

SA-4c: Continue to require all new development to be reviewed for consistency with the relevant State and local Fire Safe Regulations, and the most recently adopted fire code standards.

SA-4d: Work with Glenn County and other partner agencies to review and update local hazard plans including emergency operation plans, and the Glenn County, CA Multi-Jurisdiction Hazard Mitigation Plan to include an analysis of evacuation routes, fire breaks and other community needs.

SA-4e: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster.

SA-4f: Promote cooperation between the Willows Fire Department, Willows Rural Fire Protection District, and other countywide fire districts for training and mutual aid.

SA-4g: Review and require all projects to adhere to Municipal Code requirements to ensure adequate safety services. These include but are not limited to Chapter 19.05 (Impact Fee Ordinance), which requires development impact fees to be charged to fund improvements to the City's infrastructure. Chapter 2.25 (Fire Department) describes the duties of the municipal fire department and the responsibilities o f the fire chief in determining imminent health and safety hazards, and the powers associated with such a determination. Chapter 17.25 (Improvements) describes the requirements of a subdivider to provide and connect water mains and fire hydrants to Cal Water's water system.

Impact 3.13-2: General Plan implementation may result in adverse physical impacts associated with the deterioration of existing parks and recreation facilities or the construction of new parks and recreation facilities (Less than Significant)

Growth accommodated under the General Plan would include a range of uses that could increase the population of the City and also attract additional workers and tourists to the City. Such growth would result in increased demand for parks and recreation facilities. It is anticipated that over the life of the General Plan, use of parks, trails, and recreation facilities would increase, due to new residents and businesses. The additional demand on existing parks and recreational facilities would increase the need for maintenance and improvements. These improvements could have environmental impacts, although the exact impacts cannot be determined since the potential improvements are unknown.

The provision of new parks and recreation facilities would reduce the potential for adverse impacts and physical deterioration of existing parks and recreation facilities, by providing additional facilities to accommodate the demand for parks and recreation facilities. The General Plan Policy LU-6.3 requires all development projects to mitigate their infrastructure service impacts or demonstrate that the City's infrastructure, public services, and utilities can accommodate the increased demand for services, and that service levels for existing users will not be degraded or impaired. Development under the General Plan would indirectly lead to the construction of new parks and recreation facilities to serve new growth and to meet existing parks and recreation needs. The General Plan supports the creation of new parks and recreation facilities, including new parks and trails, to accommodate a wide range of activities for all age groups. These new parks and recreation facilities would be spread throughout areas proximate to new development in and around existing neighborhoods.

Under the SB 1000 guidelines, the current distribution of park acreage per 1,000 residents for the entire City of Willows is an appropriate indicator of adequate park space and access. The California

Statewide Park Program (Public Resources Code §5642) defines underserved communities as having a ratio of less than three acres of parkland per 1,000 residents. This measure identifies areas where surrounding population density may overwhelm limited park space. The city has approximately 26 acres of parkland. Therefore, with a 2019 population of approximately 6,243 the current distribution of park acreage per 1,000 residents is approximately 4.15, which is above the Statewide Park Program standard. General Plan Policy COS-2.3 establishes an overall citywide ratio of 5 acres of park land for every 1,000 residents. The deficit in park land may be currently offset with the recreational opportunities available in private parks and other nearby regional parks.

As shown in the Project Description (Table 2.0-2), the projected total buildout population (which includes existing plus projected population growth) is 8,864 people would result in a demand for additional developed parkland.

The proposed General Plan does not specifically propose any development projects, including parks. As a result, site-specific physical impacts of future park development and construction cannot be determined until future projects are brought forward for review. As future parks and recreation projects are considered by the City, each project will be evaluated for conformance with the General Plan, Municipal Code, and other applicable regulations. Parks and recreation projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

In addition to ensuring that new and expanded parks and recreation facilities are provided to accommodate new growth, the General Plan includes policies and actions to ensure that parks and recreation facilities are adequately maintained and improved to serve both existing and planned growth.

The proposed General Plan does not propose or approve any development nor does it designate specific sites for new or expanded parks and recreational facilities. The General Plan includes a range of policies and actions (listed below) to ensure that parks and recreational facilities are adequately funded, and that new development funds its fair share of services needed to meet General Plan objectives. New development is required to participate in the provision and expansion of public services, recreational amenities, and facilities, and is also required to demonstrate that the City's public services and facilities can accommodate the increased demand for said services and facilities associated with future projects during the entitlement process.

The proposed General Plan does not propose or approve the construction or expansion of parks or recreational facilities. Any new parks or recreational facilities that may be constructed in the future would be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the parks and recreational facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the General Plan. These impacts are described in the relevant chapters (Chapters 3.1 through 3.16, and 4.0) of this Draft EIR. Any future development under the General Plan would be required to comply with regulations, policies, and standards included in the General Plan, and would be subject to CEQA review as appropriate.

Therefore, impacts related to the provisions and need for park and recreational facilities are **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

PARKS, RECREATION & OPEN SPACE POLICIES

COS 2.1: Ensure the provision of sufficient land that is well distributed and interconnected throughout the community for parks, trails, and recreation facilities.

COS 2.2: Recognize that some of the recreational resources available to City residents may be owned and/or operated by other entities, including the County and neighboring conservation areas and habitat preserves, while still meeting the recreational needs of Willows residents.

COS 2.3: Strive to achieve and maintain an overall citywide ratio of 5 acres of park land for every 1,000 residents.

COS 2.4: Support recreational activities, events, organized sports leagues, and other programs that serve broad segments of the community.

COS 2.5: Promote the development of a diverse network of parks, trails, and recreation facilities that support traditional and non-traditional recreational uses, and passive recreational opportunities.

COS 2.6: Encourage the provision and dedication of parkland within future development projects in order to ensure that the City maintains an extensive network of neighborhood parks that serve all areas of the community.

COS 2.7: Encourage community and volunteer efforts to assist in the maintenance and beautification of parks, trails, and recreation facilities in Willows

COS 2.8: Develop new parks, trails, and recreation facilities through developer fees in areas which are accessible and convenient to the community, prioritizing areas that are lacking these facilities.

COS 2.9: Require new residential development to pay park impact fees to use for the acquisition and development of park land and recreational facilities, and update the fees periodically to ensure they reflect current costs of land acquisition.

PARKS, RECREATION & OPEN SPACE ACTIONS

COS-2a: Periodically evaluate open space, park and recreation facility acquisition opportunities.

COS-2b: Pursue all forms of possible funding, including Federal, State, County, private contributions, gifts and endowments, bond measures, and special districts, to assist in the acquisition, development and programming of park and recreation facilities.

COS-2c: Utilize park impact fees for the acquisition and development of parks and recreation facilities. Periodically review, and update as necessary, the City's Park and Recreational Facilities Impact Fees in order to ensure that new development continues to provide a fair-share contribution towards parks, trails, and recreation facilities.