DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR THE

WILLOWS GENERAL PLAN UPDATE

(SCH: 2022040089)

AUGUST 2022

Prepared for:

City of Willows
201 N Lassen Street
Willows, CA 95988

Prepared by:

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De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

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DRAFT EIR

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PURPOSE

The City of Willows (City) as lead agency, determined that the Willows General Plan Update (General Plan, or Project) is a "Project" within the definition of the California Environmental Quality Act (CEQA), and requires the preparation of an Environmental Impact Report (EIR). This Draft EIR has been prepared to evaluate the environmental impacts associated with implementation of the Project. This EIR is designed to fully inform decision-makers in the City, other responsible and trustee agencies, and the general public of the potential environmental consequences of approval and implementation of the General Plan. A detailed description of the proposed Project, including the components and characteristics of the Project, project objectives, and how the EIR will be used, is provided in Chapter 2.0 (Project Description).

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the Project that are known to the City, raised during the Notice of Preparation (NOP) scoping process, or were raised during preparation of the Draft EIR. This Draft EIR addresses the potentially significant impacts associated with aesthetics, agriculture and forest resources, air quality, biological resources, cultural and tribal cultural resources, geology, greenhouse gas emissions and energy, hazards and hazardous materials, hydrology and water quality, land use planning and population/housing, mineral resources, noise, public services and recreation, transportation, utilities and service systems, wildfire, and cumulative impacts.

The City received three written comment letters on the NOP. The City received comment letters from the following organizations and agencies:

- Native American Heritage Commission
- California Department of Fish and Wildlife
- California Department of Toxic Substances

Copies of these letters are provided in Appendix A of this Draft EIR.

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the Project or to the location of the Project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed Project. The alternatives analyzed in this EIR include the following:

- **Alternative 1: No Project Alternative**. Under Alternative 1, the City would not adopt the General Plan Update. The existing Willows General Plan would continue to be implemented and no changes to the General Plan, including the Land Use Map, Circulation Diagram, goals, policies, or actions would occur. Subsequent projects, such as amending the Municipal Code

(including the zoning map) and the City's Design Guidelines, would not occur. The Existing General Plan Land Use Map is shown on Figure 5.0-1.

- **Alternative 2: Modified Project Alternative**. Under Alternative 2, the City would adopt the updated General Plan policy document, but would retain the existing land use map. This alternative would result in the same growth as the existing General Plan and Alternative 1, but would implement the updated goals, policies, and actions found in the General Plan Update. This Alternative would result in less residential and non-residential growth than the proposed Project. This alternative was developed to potentially reduce the severity of significant impacts associated with noise, as well as the potential further reduction in less than significant impacts related to aesthetics, biological resources, cultural resources, noise, public services, air quality and utilities.

- **Alternative 3: Agriculture Protection Alternative.** Alternative 3 provides for job-creation and residential development land uses focused within the City Limits. Under this alternative, the proposed Project would be developed in such a way to protect lands currently identified as prime farmland and farmland of statewide importance, by reducing the overall footprint of the developable areas and focus development on infill development. For the purposes of this analysis it is assumed that future development buildout would exclude development assumed within l the SOI. This Alternative would result in the least amounts of overall developable area, but would result in slightly increased rate of development within the City Limits when compared to Alternatives 1 and 2.

A comparative analysis of the proposed General Plan and each of the Project alternatives is provided in Table ES-1 below. The table includes a numerical scoring system, which assigns a score of 1 to 5 to each of the alternatives with respect to how each alternative compares to the proposed Project in terms of the severity of the environmental topics addressed in this EIR. A score of "3" indicates that the alternative would have the same level of impact when compared to the proposed Project. A score of "1" indicates that the alternative would have a better (or reduced) impact when compared to the proposed Project. A Score of "2" indicates that the alternative would have a slightly better (or slightly reduced) impact when compared to the proposed Project. A score of "4" indicates that the alternative would have a slightly worse (or slightly increased) impact when compared to the proposed Project. A score of "5" indicates that the alternative would have a worse (or increased) impact when compared to the proposed Project. The Project alternative with the lowest total score is considered the environmentally superior alternative.

TABLE ES-1: COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT

ENVIRONMENTAL ISSUE	*PROPOSED PROJECT*	*ALTERNATIVE 1 (NO PROJECT)*	*ALTERNATIVE 2 (MODIFIED)*	*ALTERNATIVE 3 (AGRICULTURE PROTECTION)*
Aesthetics	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Agricultural Resources	3 – Same	2 – Slightly Better	2 – Slightly Better	1 –Better
Air Quality	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Biological Resources	3 – Same	4 – Slightly Worse	2 – Slightly Better	1 –Better
Cultural Resources	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Greenhouse Gases, Climate Change, and Energy	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Geology and Soils	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Hazards and Hazardous Materials	3 – Same	4 – Slightly Worse	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
Land Use and Population	3 – Same	4 – Slightly Worse	3 – Same	3 – Same
Noise	3 – Same	3 – Same	2 – Slightly Better	3 – Same
Public Services and Recreation	3 – Same	3 – Same	2 – Slightly Better	3 – Same
Transportation and Circulation	3 – Same	4 – Slightly Worse	2 – Slightly Better	1 –Better
Utilities	3 – Same	3 – Same	2 – Slightly Better	2 – Slightly Better
Wildfire	3 – Same	3 – Same	3 – Same	3 – Same
Irreversible Effects	3 – Same	4 – Slightly Worse	3 – Same	2 – Slightly Better
SUMMARY	**48**	**58**	**43**	**34**

Overall, Alternative 3 is the environmentally superior alternative as it is the most effective in terms of overall reductions of impacts compared to the proposed General Plan and all other alternatives. As such, Alternative 3 is the environmentally superior alternative for the purposes of this EIR analysis. Information related to alternatives and their respective impacts are described in Chapter 5.0 of this DEIR.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the Project's significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with policies and regulations. "Beneficial" effect is not defined in the CEQA Guidelines, but for purposes of this EIR a beneficial effect is one in which an environmental condition is enhanced or improved.

The environmental impacts of the proposed Project, and the level of significance are summarized in Table ES-2.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
AESTHETICS AND VISUAL RESOURCES			
Impact 3.1-1: General Plan implementation would not have a substantial adverse effect on a scenic vista	LS	*None Required*	LS
Impact 3.1-2: General Plan implementation would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway	NI	*None Required*	NI
Impact 3.1-3: Project implementation would not substantially degrade the existing visual character or quality of public views of the site and its surroundings within a non-urbanized areas. Or within urbanized areas, conflict with applicable zoning and other regulations governing scenic quality? (Less than Significant)	LS	*None Required*	LS
Impact 3.1-4: General Plan implementation could result in the creation of new sources of nighttime lighting and daytime glare	LS	*None Required*	LS
AGRICULTURAL AND FOREST RESOURCES			
Impact 3.2-1: General Plan implementation would result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU
Impact 3.2-2: General Plan implementation may result in conflicts with existing Williamson Act Contracts	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU
Impact 3.2-3: General Plan implementation would not result in the loss of forest land or conversion of forest land to non-forest use	NI	*None Required*	NI
Impact 3.2-4: General Plan implementation would not involve other changes in the existing environment which, due to their location or	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
nature, could result in conversion of Farmland to non-agricultural use			
AIR QUALITY			
Impact 3.3-1: General Plan implementation would not conflict with or obstruct implementation of the applicable air quality plan, or result in a cumulatively considerable net increase of criteria pollutants	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU
Impact 3.3-2: General Plan implementation would expose sensitive receptors to substantial pollutant concentrations	LS	*None Required*	LS
Impact 3.3-3: General Plan implementation would not result in other emissions (such as those leading to odors adversely affecting a substantial number of people)	LS	*None Required*	LS
BIOLOGICAL RESOURCES			
Impact 3.4-1: General Plan implementation could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LS	*None Required*	LS
Impact 3.4-2: General Plan implementation could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LS	*None Required*	LS
Impact 3.4-3: General Plan implementation could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.4-4: General Plan implementation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	LS	*None Required*	LS
Impact 3.4-5: The General Plan would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	LS	*None Required*	LS
Impact 3.4-6: General Plan implementation would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan	NI	*None Required*	NI
CULTURAL AND TRIBAL RESOURCES			
Impact 3.5-1: General Plan implementation could cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to Section15064.5	LS	*None Required*	LS
Impact 3.5-2: Implementation of the General Plan could lead to the disturbance of any human remains	LS	*None Required*	LS
Impact 3.5-3 : Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or a resource determined by the lead agency	LS	*None Required*	LS
GEOLOGY AND SOILS			
Impact 3.6-1: General Plan implementation has the potential to expose people or structures to potential substantial adverse effects, including	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
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			
Impact 3.6-2: General Plan implementation has the potential to result in substantial soil erosion or the loss of topsoil	LS	*None Required*	LS
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	LS	*None Required*	LS
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	LS	*None Required*	LS
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	LS	*None Required*	LS
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	LS	*None Required*	LS
GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY			
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	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
purpose of reducing the emissions of greenhouse gases			
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	LS	*None Required*	LS
HAZARDS AND HAZARDOUS MATERIALS			
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	LS	*None Required*	LS
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	LS	*None Required*	LS
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	LS	*None Required*	LS
Impact 3.8-4: General Plan implementation is not 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	LS	*None Required*	LS
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	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
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	NI	*None Required*	NI
HYDROLOGY AND WATER QUALITY			
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	LS	*None Required*	LS
Impact 3.9-2: General Plan implementation could result in the depletion of groundwater supplies, interfere substantially with groundwater recharge or conflict with a groundwater management plan	LS	*None Required*	LS
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	LS	*None Required*	LS
Impact 3.9-4: General Plan implementation would not release pollutants due to project inundation by flood hazard, tsunami, or seiche	LS	*None Required*	LS
LAND USE, POPULATION AND HOUSING			
Impact 3.10-1: General Plan implementation would not physically divide an established community	LS	*None Required*	LS
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	LS	*None Required*	LS
Impact 3.10-3: General Plan implementation would not induce substantial unplanned population growth in an area, either directly (for	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)			
Impact 3.10-4: General Plan implementation would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere	LS	*None Required*	LS
MINERAL RESOURCES			
Impact 3.11-1: General Plan implementation would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	LS	*None Required*	LS
Impact 3.11-2: General Plan implementation would 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	LS	*None Required*	LS
NOISE			
Impact 3.12-1: General Plan implementation may result in exposure to significant traffic noise sources	LS	*None Required*	LS
Impact 3.12-2: General Plan implementation may result in exposure to excessive railroad noise sources	LS	*None Required*	LS
Impact 3.12-3: Implementation of the General Plan could result in the generation of excessive stationary noise sources	LS	*None Required*	LS
Impact 3.12-4: General Plan implementation may result in an increase in construction noise sources	LS	*None Required*	LS
Impact 3.12-5: General Plan implementation may result in exposure to excessive aircraft noise sources	LS	*None Required*	LS
Impact 3.12-6: General Plan implementation may result in construction vibration	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.12-6: General Plan implementation may result in exposure to groundborne vibration	LS	*None Required*	LS
PUBLIC SERVICES AND RECREATION			
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	LS	*None Required*	LS
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	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
TRANSPORTATION AND CIRCULATION			
Impact 3.14-1: General Plan implementation may conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU
Impact 3.14-2: General Plan implementation may conflict with a program, plan, policy or ordinance addressing the circulation system, including transit, bicycle, and pedestrian facilities	LS	*None Required*	LS
Impact 3.14-3: General Plan implementation may increase hazards due to a design feature or incompatible uses	LS	*None Required*	LS
Impact 3.14-4: General Plan implementation may cause inadequate emergency access (Less than Significant).	*LS*	*None Required*	*LS*
UTILITIES AND SERVICE SYSTEMS			
Impact 3.15-1: General Plan implementation would not result in sufficient water supplies available to serve the City and reasonably foreseeable future development during normal, dry and multiple dry years	LS	*None Required*	LS
Impact 3.15-2: General Plan implementation would not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	LS	*None Required*	LS
Impact 3.15-3: General Plan implementation would not have the potential to result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	LS	*None Required*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.15-4: General Plan implementation may require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects	LS	*None Required*	LS
Impact 3.15-5: General Plan implementation would not require or result in the relocation or construction of new or expanded storm water drainage facilities, the construction or relocation of which could cause significant environmental effects	LS	*None Required*	LS
Impact 3.15-6: General Plan implementation would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals	LS	*None Required*	LS
WILDFIRES			
Impact 3.16-1: General Plan implementation would not have a significant impact related to wildfire risks associated with lands in or near State Responsibility Areas or lands classified as very high fire hazard severity zones	NI	*None Required*	NI
OTHER CEQA-REQUIRED TOPICS			
Impact 4.1: Cumulative degradation of the existing visual character of the region	LCC	*None Required*	LCC
Impact 4.2: Cumulative impact to agricultural lands and resources.	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	CC and SU
Impact 4.3: Cumulative impact on the region's air quality	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	CC and SU
Impact 4.4: Cumulative loss of biological resources, including habitats and special status species	LCC	*None Required*	LCC

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 4.5: Cumulative impacts on known and undiscovered cultural resources	LCC	*None Required*	LCC
Impact 4.6: Cumulative impacts related to geology and soils	LCC	*None Required*	LCC
Impact 4.7: Cumulative impacts related to greenhouse gases, climate change, and energy	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	CC and SU
Impact 4.8: Cumulative impacts related to hazardous materials and human health risks	LCC	*None Required*	LCC
Impact 4.9: Cumulative impacts related to hydrology and water quality	LCC	*None Required*	LCC
Impact 4.10: Cumulative impacts related to local land use, population, and housing	LCC	*None Required*	LCC
Impact 4.11: Cumulative impacts related to mineral resources	LCC	*None Required*	LCC
Impact 4.12: Cumulative impacts related to noise	LCC	*None Required*	LCC
Impact 4.13: Cumulative impacts to public services and recreation	LCC	*None Required*	LCC
Impact 4.14: Cumulative impacts on the transportation network	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	CC and SU
Impact 4.15: Cumulative impacts related to utilities	LCC	*None Required*	LCC
Impact 4.16: Cumulative impact related to wildfire	LCC	*None Required*	LCC
Impact 4.17: Irreversible and adverse effects	PS	*Minimized to the greatest extent feasible through General Plan Policies and Actions. No feasible mitigation is available.*	SU

1.1 INTRODUCTION

In 2019, the City of Willows embarked on multi-year process to update the City's General Plan. The General Plan is the overarching policy document that guides land use, housing, transportation, infrastructure, and other policy decisions. State law requires every city and county in California to prepare and maintain a general plan planning document. The General Plan is the City's "constitution" or "blueprint" for future development of the city and provides the policy guidance for achieving the community's vision.

The Willows General Plan identifies the community's vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources in a manner consistent with the quality of life desired by residents, businesses, and local elected officials.

The Willow's General Plan Update is a multi-year process that includes a comprehensive update of the General Plan, which sets a vision for the future of the City, goals and strategies to achieve the City's vision, and an Environmental Impact Report (EIR), which investigates the possible impacts of the General Plan Update policy changes to the surrounding physical environment.

WILLOWS GENERAL PLAN UPDATE

General Plan Policy Document

The Policy Document contains the goals, policies, and strategies related to various elements of the General Plan. The General Plan must address seven elements - or issue categories - to the extent that they are relevant locally. These state-mandated elements include: land use, circulation, housing, open space, conservation, 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 resilience and adaptation, and environmental justice. The General Plan sets out the goals, policies, and action items in each of these areas and serves as a policy guide for how the City will make key planning decisions in the future. It also identifies how the City will interact with Glenn County, and nearby cities, and other local, regional, State, and Federal agencies.

The Policy Document contains the goals and policies that will guide future decisions within the city. It also identifies action programs that will ensure the goals and policies in the General Plan are carried out. As part of the General Plan Update, the City and the consultant team also prepared several supporting documents that serve as the building blocks for the Policy Document. A description of these reports is as follows:

Existing Conditions Report

As part of the General Plan Update process, the Existing Conditions Report establishes a baseline of existing conditions in the city. To prepare a meaningful General Plan, existing conditions must be understood and documented. The Existing Conditions Report identifies development patterns, natural resources, socioeconomic conditions, and environmental constraints in the city, and identifies the regulatory environment for each topic. This report is a resource for the City Council,

Planning Commission, public, City staff, and the De Novo Planning Group team for the General Plan Update and Environmental Impact Report (EIR). The Existing Conditions Report makes extensive use of maps and graphics to help make it accessible to the general public. The Existing Conditions Report provides background data and serves as a technical framework, while the General Plan will focus on goals, policies, and action programs.

Outreach Summary Report

This report summarizes the public participation and input received during the General Plan Update Visioning Workshop outreach activities conducted from May through June 2019.

The City of Willows initiated their General Plan Update process in early 2019 and began a multifaceted outreach program to engage community members. The outreach program for this project is inclusive, educational, and designed to facilitate a meaningful conversation with the City of Willows community about the issues the City is facing as it looks forward over the next 20 years.

The initial outreach program included an interactive visioning workshop, a community newsletter, and an online survey. These activities were conducted to provide opportunities for community members to discuss their vision for the future of City of Willows, issues related to transportation and mobility, land use and community design priorities, and other relevant topics, such as environmental justice.

This Summary Report memorializes what was discussed during the Visioning Workshop held in May 2019, and an online survey which was completed by 130 participants during the spring of 2019.

Based on public input from community surveys, information obtained during workshops, and initial input provided by the City Council, the general plan update team was able to identify key issues and opportunities to be addressed in the General Plan.

Environmental Impact Report

An EIR responds to the requirements of the California Environmental Quality Act (CEQA) as set forth in Sections 15126, 15175, and 15176 of the CEQA Guidelines. The Planning Commission and City Council will use the EIR during the General Plan Update process in order to understand the potential environmental implications associated with implementing the General Plan. This EIR was prepared concurrently with the General Plan policy document in order to facilitate the development of a General Plan that is largely self-mitigating. In other words, as environmental impacts associated with the new General Plan, including the Land Use Map, were identified; policies and actions were incorporated into the General Plan policy document in order to reduce or avoid potential environmental impacts.

1.2 PURPOSE OF THE EIR

The City of Willows, as lead agency, determined that the Willows General Plan Update is a "Project" within the meaning of CEQA. CEQA requires the preparation of an EIR prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "Project" refers to the whole of an action, which has the potential for resulting in a direct physical change or

a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

This Draft EIR has been prepared according to CEQA requirements to evaluate the potential environmental impacts associated with the implementation of the Willows General Plan. A copy of the Public Draft General Plan is located on the City of Willows website, at https://www.cityofwillows.org/news/general-plan-update. The Draft EIR also discusses alternatives to the General Plan, and any mitigation measures that will offset, minimize, or otherwise avoid potentially significant environmental impacts. This Draft EIR has been prepared in accordance with CEQA, California Resources Code Section 21000 et seq.; the Guidelines for the California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the City of Willows.

An EIR must disclose the expected direct and indirect environmental impacts associated with a Project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed Project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize significant environmental impacts of proposed development.

1.3 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168. Section 15168 states:

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

The program-level analysis considers the broad environmental effects of the proposed Project. This EIR may be used to evaluate subsequent projects and activities under the proposed Project. This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering approval of the proposed Project, but not necessarily to the level of detail to consider approval of subsequent development projects that may occur after adoption of the General Plan.

Additional environmental review under CEQA may be required for subsequent projects and would be generally based on the subsequent project's consistency with the General Plan and the analysis

in this EIR, as required under CEQA. It may be determined that some future projects or infrastructure improvements may be exempt from environmental review. When individual subsequent projects or activities under the General Plan are proposed, the lead agency that would approve and/or implement the individual project will examine the projects or activities to determine whether their effects were adequately analyzed in this Program EIR (CEQA Guidelines Section 15168). If the projects or activities would have no effects beyond those disclosed in this EIR, no further CEQA compliance would be required.

1.4 INTENDED USES OF THE EIR

The City of Willows, as the lead agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from adoption of the Willows General Plan and subsequent implementation of projects consistent with the General Plan. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the General Plan. Subsequent actions that may be associated with the General Plan are identified in Chapter 2.0, Project Description. This EIR may also be used by other local regional agencies.

1.5 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). While no Responsible Agencies or Trustee Agencies are responsible for approvals associated with adoption of the Willows General Plan, implementation of future projects within Willows may require permits and approvals from such agencies, which may include the following:

- California Department of Fish and Wildlife (CDFW);
- California Department of Transportation (Caltrans);
- Regional Water Quality Control Board (RWQCB);
- U.S. Army Corps of Engineers (ACOE);
- U.S. Fish and Wildlife Service (USFWS);
- Glenn County Local Agency Formation Commission (LAFCO);
- Glenn County, Including but not limited to: Environmental Health Department; Transportation Commission; Airport Land Use Commission, and Glenn County Air Pollution Control District.

- Department of Toxic Substances Control (DTSC)

1.6 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The City of Willows circulated a Notice of Preparation (NOP) of an EIR for the proposed project on April 6, 2022 to trustee and responsible agencies, the State Clearinghouse, and the public. A scoping meeting was held on April 20, 2022. During the 30-day public review period for the NOP, which ended on May 9, 2022, three written comment letters were received on the NOP. The NOP and all comments received on the NOP are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of the project's direct and indirect impacts on the environment and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Willows will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City of Willows will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted in written form to the address below or by email. All comments or questions regarding the Draft EIR should be directed to:

Karen Mantele
Principal Planner
Community Development Department, Planning Division
City of Willows
201 N Lassen Street
Willows, CA 95988
kmantele@cityofwillows.org

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to both oral and written comments received during the public review period and include any minor changes to the DEIR in the form of an errata.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City of Willows City Council will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete" pursuant to CEQA Guidelines Section 15151, the City Council may certify the Final EIR in accordance with CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed project that intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or deny the project. If the EIR determines that the Project would result in significant adverse impacts to the environment that cannot be mitigated to less than significant levels, the City Council would be required to adopt a statement of overriding considerations as well as written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. If additional mitigation measures are required (beyond the General Plan policies and actions that reduce potentially significant impacts, as identified throughout this EIR), a Mitigation Monitoring and Reporting Program (MMRP) would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. The MMRP would be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.7 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures for any significant impacts, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The EIR prepared reviews environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City of Willows, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 - INTRODUCTION

Chapter 1.0 briefly describes the proposed project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and briefly summarizes comments received on the NOP.

CHAPTER 2.0 - PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed Project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

CHAPTER 3.0 - ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact. The following environmental topics are addressed in this section:

- Aesthetic Resources
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology, Soils, and Mineral Resources
- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Utilities/Service Systems
- Wildfire
- Mandatory Findings of Significance/Cumulative Impacts

CHAPTER 4.0 - OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative impacts, and significant and unavoidable environmental effects.

CHAPTER 5.0 - ALTERNATIVES

Chapter 5.0 provides a comparative analysis between the merits of the proposed Project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project.

CHAPTER 6.0 – REPORT PREPARERS AND REFERENCES

Chapter 6.0 lists authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

CHAPTER 7.0 - REFERENCES

Chapter 7.0 lists referenced materials for studies and reposts and informational materials that were consulted during preparation of the DEIR.

APPENDICES

This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as technical material prepared to support the analysis.

1.8 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City received three comment letters on the NOP. Comments were received from: The Native American Heritage Commission; California Department of Fish and Wildlife, and the California Department of Toxic Substances. Copies of these letters are provided in Appendix A of this Draft EIR.

2.1 BACKGROUND AND OVERVIEW

CALIFORNIA GENERAL PLAN LAW

State planning and zoning law (California Government Code Section 65000 et seq.) requires all counties and cities to prepare and maintain a general plan for the long-term growth, development, and management of the land within the jurisdiction's planning boundaries. The general plan acts as a "constitution" for development and is the jurisdiction's lead legal document in relation to growth, development, and resource management issues. Development regulations (e.g., zoning and subdivision standards) are required by law to be consistent with the general plan.

General plans must address a broad range of topics, including, at a minimum, the following mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. General Plans must also address the topics of environmental justice, climate change, and resiliency planning, either as separate elements or as part of other required elements. At the discretion of each jurisdiction, the general plan may combine these elements and may add optional elements relevant to the physical features of the jurisdiction.

General plans must also be comprehensive, internally consistent, and plan for the long term. The general plan should be clearly written, easy to administer, and available to all those concerned with the community's development.

State planning and zoning law also establishes that zoning ordinances are required to be consistent with the general plan and any applicable specific plans, area plans, master plans, and other related planning documents. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure consistency between the revised land use designations in the general plan (if any) and the permitted uses or development standards of the zoning ordinance (Gov. Code Section 65860, subd. [c]).

GENERAL PLAN UPDATE PROCESS

In 2019, the City of Willows embarked on a multi-year process to comprehensively update its General Plan. Specifically, the General Plan provides policy guidance on land use, housing, transportation, infrastructure, community design, conservation, and other development-related topics. State law requires every city and county in California to prepare and maintain a general plan planning document.

The General Plan includes a broad goal policy framework that guides land use and planning decisions within the city. The City's current General Plan was originally adopted in 1974 as the "Glenn County And Cities Of Orland Willows Unit Of The Tri-County Area Planning Council General Plan" with Elements updated in 1981 (Land Use, Open Space Conservation and circulation) and the City's 2014-2019 Housing Element adopted in January of 2015. The City of Willows current General Plan Land Use Element was adopted July 9, 1996 with revisions in years 2000 and 2010. The City's Housing Element was adopted in 2015 which covers the 2014-2019 Housing Element cycle. Land uses in the city have been developed based on the Land Use Map, and goals, policies, and objectives established

by the General Plan. The update to the Willows Housing Element for the period of 2021-2029 formally kicked off in February 2021 and is expected to culminate by November 2022.

Existing Conditions Analysis

The Existing Conditions Report takes a "snapshot" of the current trends and conditions. It provides a detailed description of a wide range of topics within the city, such as demographic and economic conditions, land use, public facilities, and environmental resources. The Existing Conditions Report provides decision-makers, the public, and local agencies with context for making policy decisions.

USING THE GENERAL PLAN

The General Plan is used by the City Council, Planning Commission, and City staff on a regular basis to make decisions with direct and indirect land use implications. It also provides a framework for inter-jurisdictional coordination of planning efforts among officials and staff of the City and other government agencies such as the County and State and Federal agencies.

The General Plan is the basis for a variety of regulatory mechanisms and administrative procedures. California planning law requires consistency between the General Plan and its implementation programs. Implementation programs and regulatory systems of the General Plan include zoning and subdivision ordinances, capital improvement programs, specific plans, environmental impact procedures, and building and housing codes.

Over time, the City's population will change, its goals will be redefined, and the physical environment in which its residents live and work will be altered. In order for the General Plan to be a useful document, it must be monitored and periodically revised to respond to and reflect changing conditions and needs. As such, a general plan should be comprehensively updated approximately every 10-15 years to reflect current conditions and emerging trends.

The City's General Plan should also be user-friendly. To this end, the Willows General Plan Update will be divided into two primary documents: the Existing Conditions Report and the General Plan Goals and Policy document (or "General Plan").

The Existing Conditions Report provides a summary of a range of conditions in Willows and provides the baseline framework for the development of the General Plan's goals, policies, and implementation programs.

The General Plan Goals and Policies document is the essence of the General Plan. It contains the goals and policies that will guide future decisions within the City. It also identifies a full set of implementation programs that will ensure the goals and policies in the General Plan are carried out.

COMMUNITY OUTREACH AND PARTICIPATION

Gathering public and community input was of paramount importance to the City of Willows during the development of the General Plan.

A brief summary of the community outreach and public participation process is provided below.

Outreach Objectives

Objectives established for the comprehensive outreach program are to:

- Develop a long-term vision for the City of Willows
- Engage a broad spectrum of the community members
- Engage key stakeholders to perpetuate long-term involvement
- Establish a greater connection between the General Plan and current planning issues
- Educate the public on the City's existing conditions, and the General Plan Update process

Visioning Workshop

The City hosted a General Plan Update Visioning Workshop in May 2019. The Workshop focused on addressing a variety of key planning topics, and included a brief overview of the General Plan, including why it's important and why the City is updating its Plan, some background information on the evening's topic, and a series of facilitated activities to solicit input on key topics or ideas. The topics explored in the Workshop, along with summaries of what we heard from the community are provided in the Workshop Summary Report where the feedback received has been recorded in order to memorialize the key themes and ideas, and was used to help inform work tasks associated with the General Plan Update including the evaluation of opportunities and challenges, land use changes, and the creation of new goals, policies, and actions.

Online Survey

Survey responses were collected from April 11, 2019 through August 31 of 2019 and was administered online via the City's website and the SurveyMonkey web platform. During the approximately 4-month time period that the survey was active, there were 130 responses to the nineteen primary questions related to the General Plan update. The questions involved a wide range of response formats that are synthesized in the Outreach Summary Report. The survey responses provide insight into the demographics and opinions of the City of Willows community members concerning goals and topics related to the update of the City's General Plan.

City Council Input

The City Council received periodic briefings from City staff and the consultant team to review community input and provide specific direction and guidance to staff and the consultant team regarding the development of the preferred land use map and the General Plan policy document, which is analyzed in this Environmental Impact Report.

2.2 PROJECT LOCATION

REGIONAL SETTING

Incorporated in 1886, the Willows is located in the Northern Sacramento Valley, approximately 80 miles north of the City of Sacramento. Willows is located along the I-5 corridor and California State Route 162 runs east to west through the City. Figure 2.0-1 shows Willows regional location.

ENVIRONMENTAL IMPACT REPORT STUDY AREA

There are several key boundaries addressed by the General Plan, which make up the study area for the General Plan Environmental Impact Report (EIR). These include the city limits, the Sphere of Influence (SOI), Urban Growth Boundary, and the Planning Area, as shown on Figure 2.0-2 and described below.

City Limits: The City Limits include all area within the City's corporate boundary, over which the City exercises land use authority and provides public services.

Sphere of Influence: A 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). A SOI includes both incorporated and unincorporated areas within which a city or special district will have primary responsibility for the provision of public facilities and services.

Planning Area: For the purposes of the Willows General Plan Update, the Planning Area is defined as all lands within the Willows City Limits, and SOI.

2.3 PROJECT OBJECTIVES

The Willows General Plan is intended to reflect the desires and vision of Willows residents, businesses, and City Council. The following objectives are identified for the proposed update to the General Plan:

- Develop a long-term vision for the City of Willows
- Establish greater connections between the General Plan and current planning issues
- Provide a range of high-quality housing options;
- Attract and retain businesses and industries that provide high-quality jobs;
- Maintain strong fiscal sustainability and continue to provide efficient and adequate public services; and
- Address new requirements of State law.

2.4 DESCRIPTION OF PROPOSED GENERAL PLAN PROJECT

The City of Willows is preparing a comprehensive update to its existing General Plan, last comprehensively updated in 1974. The General Plan Update is expected to be adopted in 2022.

The overall purpose of the Willows General Plan is to create a policy framework that articulates a vision for the City's long-term physical form and development, while preserving and enhancing the quality of life for residents and increasing opportunities for high-quality local job growth and housing options. The key components of the General Plan will include broad goals for the future of Willows, and specific policies and actions that will help implement the stated goals.

GENERAL PLAN ELEMENTS

The Willows General Plan includes a comprehensive set of goals, policies, and actions (implementation measures), as well as a revised Land Use Map (Figure 2.0-3). The State requires that the General Plan contain seven mandatory elements: Land Use, Circulation, Housing, Conservation and Open Space, Safety, Noise, as well as address issues related to climate change and resiliency planning, and environmental justice either as separate elements or as components of the required element framework. The Willows General Plan includes all of the State-mandated topics and elements.

- The **Land Use Element** designates the general distribution and intensity of residential, commercial, industrial, open space, public/semi-public, and other categories of public and private land uses. The Land Use Element includes the Land Use Map, which identifies land use designations for each parcel in the city limits and Planning Area (Figure 2.0-3).

- The **Circulation Element** correlates closely with the Land Use Element and identifies the general locations and extent of existing and proposed major thoroughfares, transportation routes, and alternative transportation facilities necessary to support a multi-modal transportation system. This element is intended to facilitate mobility of people and goods throughout Willows by a variety of transportation modes, including bicycle, pedestrian, and transit.

- The **Housing Element** (adopted in 2015 and covering years 2015-2019) plans for housing to meet the needs of all segments of the community and addresses state requirements. The Housing Element has not been updated as part of this larger General Plan Update process.

- The **Conservation and Open Space Element** addresses conservation topics including: the development and use of open space, development and use of natural resources, and protections for riparian environments, native plant and animal species, soils, cultural/historical resources, air quality, and opportunities for energy conservation**.**

- The **Safety Element** provides the framework to reduce risks associated with a range of environmental and human-caused hazards that may pose a risk to life and property in Willows. This element addresses hazards such as fires, geologic hazards, as well as hazardous materials, climate resiliency and adaptation.

- The **Noise Element** addresses noise-generating and noise-sensitive uses such as residences and schools. This element also addresses the required topics related to noise, including standards and policies to protect the community from the harmful and annoying effects of exposure to excessive noise levels. This element includes strategies to reduce land use conflicts that may result in exposure to unacceptable noise levels.

GOALS, POLICIES, AND ACTIONS

Each element of the Willows General Plan contains a series of goals, policies, and actions. The goals, policies, and actions provide guidance to the City on how to direct change, manage growth, and manage resources over the approximate 20-year life of the General Plan. The following provides a description of each and explains the relationship of each:

- A **goal** is a description of the general desired result that the City seeks to create through the implementation of the General Plan.

- A **policy** is a specific statement that guides decision-making as the City works to achieve its goals. Once adopted, policies represent statements of City regulations. The General Plan's policies set out the standards that will be used by City staff, the Planning Commission, and the City Council in their review of land development projects, resource protection activities, infrastructure improvements, and other City actions. Policies are on-going and don't necessarily require specific action on behalf of the City.

- An **action** is an implementation measure, procedure, technique, or specific program to be undertaken by the City to help achieve a specified goal or implement an adopted policy. The City must take additional steps to implement each action in the General Plan. An action is something that can and will be completed.

GENERAL PLAN LAND USE MAP

The General Plan Land Use Map identifies land use designations for each parcel within the City's Planning Area. The proposed General Plan Land Use Map is shown on Figure 2.0-3.

GENERAL PLAN LAND USE DESIGNATIONS

The Land Use Element of the Willows General Plan defines various land use designations by their allowable uses and maximum development densities and intensities. The following describes the proposed land use designations for the General Plan. Table 2.0-1 shows the total acreage for each land use designation shown on the proposed Land Use Map.

Table 2.0-1: Proposed General Plan Land Use Designation Acreages

Land Use	City	SOI	Total
Residential Uses			
Agricultural/Residential	-	84.75	84.75
Low Density Residential	478.39	1636.74	2115.13
Multiple Family Residential	41.15	25.70	66.85
Mixed Uses			
Mixed Use	-	19.68	19.68
Commercial/Industrial Combining Use	216.56	-	216.56
Commercial Uses			
General Commercial	133.18	61.65	194.83
Highway Commercial	45.78	311.94	357.72
Office and Professional	45.26	-	45.26
Manufacturing and Industrial Uses			
General Industrial	41.18	643.25	684.43
Light Industrial	157.87	265.31	423.18
Institutional			
Public Facilities and Services	229.43	285.26	514.70
Conservation Uses			
Open Space	37.64	-	37.64
Urban Reserve	-	264.39	264.39
ROW Uses			
ROW/Canal	27.50	-	27.50
Grand Total	1453.95	3598.68	5052.63

SOURCE: DE NOVO PLANNING GROUP, 2021

2.5 GENERAL PLAN BUILDOUT ANALYSIS

Table 2.0-2 includes a comparison overview of existing conditions, the current General Plan Land Use Map, and the proposed General Plan Land Use Map in terms of population, housing units, nonresidential development square footage, jobs, and the jobs-to-housing ratio.

Growth projections shown in Table 2.0-2 represent an estimate of new growth potential under the existing General Plan and the proposed General Plan, which and are based on several factors, including the availability of vacant and underutilized parcels and historical growth trends in Willows and the region. Given that actual development rates and growth rates in Willows are likely to be significantly lower than the maximum allowed development under the General Plan (if every parcel

in the City developed or redeveloped to its fully potential) over a 20-year planning horizon, these projections are intended to provide a meaningful estimate of the level of growth that could potentially occur. New development and growth are largely dictated by existing development conditions, market conditions, and land turnover rates. Very few communities in California actually develop to the full potential allowed in their respective General Plans during the planning horizon.

While no specific development projects are proposed as part of the Willows Plan Update, the General Plan will accommodate future growth in Willows, including new businesses, expansion of existing businesses, and new residential uses. The buildout analysis assumes a 20-year horizon, and 2040 is assumed to be the buildout year of the General Plan.

As shown in Table 2.0-2, buildout of the General Plan could yield a total of up to 3,421 housing units, a population of 8,689 people, 2,157,625 square feet of non-residential building square footage, and 3,501 jobs within the Planning Area. As shown in Table 2.0-2, this represents development growth over existing conditions of up to 963 new housing units, 2,446 people, 786,233 square feet of new non-residential building square footage and 1,310 jobs.

TABLE 2.0-2: GROWTH PROJECTIONS - PROPOSED LAND USE MAP

	POPULATION	*DWELLING UNITS*	*NONRESIDENTIAL SQUARE FOOTAGE*	*JOBS*	*JOBS PER HOUSING UNIT*
Existing Conditions					
	6,243	2,458	1,371,392	2,191	0.89
New Growth Potential					
Proposed General Plan	2,446	963	786,233	1,310	1.36
Existing Plus New Growth Potential					
Proposed General Plan	8,689	3,421	2,157,625	3,501	1.02

SOURCES: GLENN COUNTY ASSESSOR 2021; CALIFORNIA DEPARTMENT OF FINANCE 2021; U.S CENSUS; DE NOVO PLANNING GROUP 2021.

Tables 2.0-3 and 2.0-4 provide detailed growth projections under the Proposed General Plan (broken down by land use within the City limits) Tables 2.0-5 breaks down the total new development buildout for residential and non-residential growth projections within the SOI.

TABLE 2.0-3: PLANNING AREA BUILDOUT (BUILDOUT OF VACANT LAND IN WILLOWS CITY LIMITS)

Land Use Designation	Vacant Acreages (acre)	FAR[1]	Residential Units per Acre		Non-Residential Buildout (sf)		South Willows Residential Community[2]	Total New Residential Units	
			from	to	from	to		from	to
City	**164.99**							**641**	**734**
Non-residential Land Uses									
Commercial/Industrial Combining Use	72.72	0.25	-	-	395,966		-	-	-
General Commercial	21.55	0.25	-	-	117,361		-	-	-
General Industrial	13.34	0.25	-	-	72,644		-	-	-
Highway Commercial	16.61	0.25	-	-	90,468		-	-	-
Light Industrial	3.36	0.25	-	-	18,313		-	-	-
Office and Professional	4.24	0.25	-	-	23,083		-	-	-
Public Facilities and Services	13.57	-	-	-	-		-	-	-
Residential Land Uses									
Low Density Residential	18.08	-	2	6	36	108	419	455	527
Multiple Family Residential	1.51	-	16	30	24	45	162	186	207

Notes:
1- Assumes new non-residential development occurs at a FAR of 0.25 and is developed on 50% of the vacant parcels for each non-residential land use category.
2- The South Willows Residential Community is an entitled project, and is assumed to be fully built-out by 2040

SOURCES: CITY OF WILLOWS; PARCELQUEST PARCEL. DE NOVO PLANNING GROUP 2022.

TABLE 2.0-4: PLANNING AREA BUILDOUT - HOUSING UNITS IN WILLOWS CITY LIMITS

Total Buildout New Housing Units[1]	689
2020 Housing Units (existing)	2,458
2040 Housing Units (projected)	3,147
Mid-range Growth Projection (annual growth rate over 20 years)	1.40%

NOTES: 1- ASSUMES THAT ALL VACANT RESIDENTIAL PARCELS WILL DEVELOP AT THE MID-RANGE ALLOWED DENSITY

SOURCES: DE NOVO PLANNING GROUP 2022.

As shown in Table 2.0-3 and Table 2.0-4, 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. These projections are likely an overstatement of the level of growth that will occur in the Willows community over the next 20 years, given that these growth levels exceed historical growth rates in Willows.

As shown in Table 2.0-5, 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.

TABLE 2.0-5: PLANNING AREA BUILDOUT - BUILDOUT OF VACANT LAND IN WILLOWS SOI

Land Use Designation	Vacant Acreages (acre)	FAR*	Residential Units per Acre		Non-Residential Buildout (sq. ft)	Total New Residential Units	
			from	to		from	to
SOI	**84.98**	**84.98**				**137**	**411**
Non-residential Land Uses							
General Commercial	0.18	0.25	-		975	-	
General Industrial	1.95	0.25	-		10,637	-	
Highway Commercial	1.47	0.25	-		8,015	-	
Light Industrial	6.37	0.25	-		34,676	-	
Mixed Use	2.59	0.25	-		14,096	-	
Public Facilities and Services	3.94	-	-		-	-	
Residential Land Uses							
Low Density Residential	68.47	-	2	6	-	137	411
Note: *Assumes new non-residential development occurs at FAR of 0.25 is developed on 50% of the vacant parcels for each non-residential land use category.							

SOURCES: CITY OF WILLOWS; COUNTY OF GLENN; PARCELQUEST PARCE. DE NOVO PLANNING GROUP 2022.

2.6 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed Project.

CITY OF WILLOWS

The City of Willows is the lead agency for the proposed Project. The updated Willows General Plan will be presented to the Planning Commission for review and recommendation and to the City Council for comment, review, and consideration for adoption. The City Council has the sole discretionary authority to approve and adopt the Willows General Plan. In order to approve the proposed project, the City Council would consider the following actions:

- Certification of the General Plan EIR;
- Adoption of required CEQA findings for the above action;
- Adoption of a Mitigation Monitoring and Reporting Program; and
- Approval of the General Plan Update.

SUBSEQUENT USE OF THE EIR

This EIR provides a review of environmental effects associated with implementation of the proposed General Plan. When considering approval of subsequent activities under the proposed General Plan, the City of Willows would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review, if any, of a subsequent activity. Projects or activities successive to this EIR may include, but are not limited to, the following:

- Approval and funding of major projects and capital improvements;
- Future Specific Plan, Planned Unit Development, or Master Plan approvals;
- Revision to the Willows Zoning Ordinance;
- Development plan approvals, such as tentative subdivision maps, variances, conditional use permits, and other land use permits;
- Development Agreements;
- Property rezoning consistent with the General Plan;
- Permit issuances and other approvals necessary for public and private development projects;
- Issuance of permits and other approvals necessary for implementation of the General Plan;
- Sphere of Influence (SOI) updates prepared by LAFCO; and
- Annexations processed by LAFCO.

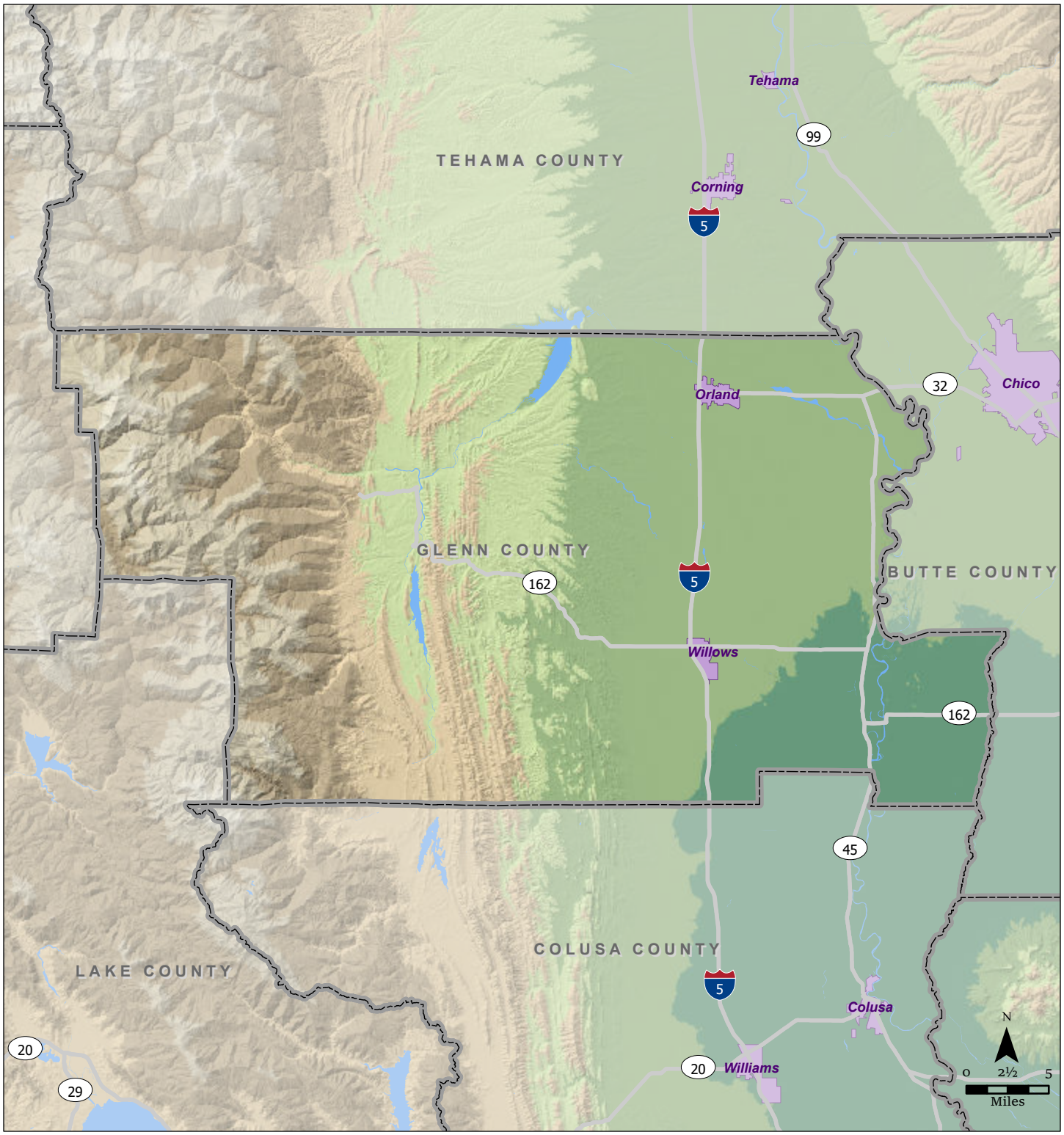
OTHER GOVERNMENTAL AGENCY APPROVALS

City approval of the proposed project would not require any actions or approvals by other public agencies. Subsequent projects and other actions to support implementation of the proposed project would require actions, including permits and approvals, by other public agencies that may include, but are not necessarily limited to:

- California Department of Transportation (Caltrans) approval of projects and encroachment permits for projects affecting State highway facilities.
- Regional Water Quality Control Board (RWQCB) approval for National Pollution Discharge Elimination System compliance, including permits and Storm Water Pollution Prevention Plan approval and monitoring.
- Glenn County Local Agency Formation Commission (LAFCO) approvals for annexation of any lands into the boundaries of the City of Willows.
- California Department of Fish and Wildlife (CDFW) approval of potential future streambed alteration agreements, pursuant to Fish and Game Code. Approval of any future potential

take of State-listed wildlife and plant species covered under the California Endangered Species Act.

- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of Federally listed wildlife and plant species and their habitats, pursuant to the Federal Endangered Species Act.



Sources: Glenn County. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 2.0-1. REGIONAL LOCATION

Legend

Incorporated Area

County Boundary

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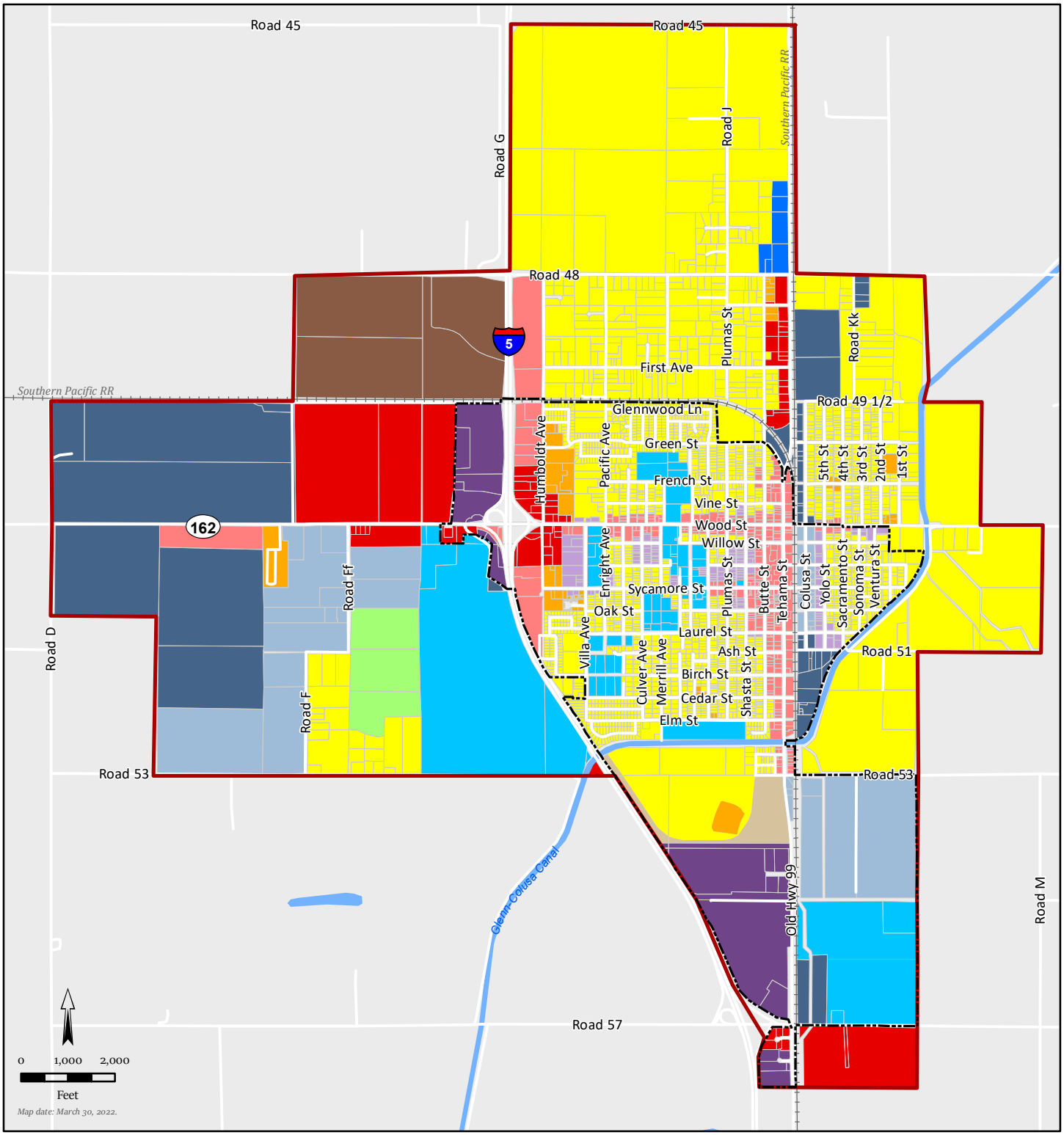

Planning Areas

City of Willows

Willows Sphere of Influence

General Plan Designations

- Low Density Residential
- Multiple Family Residential
- Urban Reserve
- General Commercial
- Highway Commercial
- Commercial/Industrial Combining Use
- Light Industrial
- General Industrial
- Office and Professional
- Open Space
- Public Facilities and Services
- Agricultural/Residential*
- Mixed Use*

*County designation. See Glenn County General Plan.

CITY OF WILLOWS

FIGURE 2.0-2: LAND USE MAP

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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The City of Willows and the surrounding areas possess numerous scenic resources, many of which are found in the natural areas within the unincorporated areas of Glenn County. These resources enhance the quality of life for Willows residents, and provide for outdoor recreational, agricultural, habitat, and tourist-generating uses. Landscapes can be defined as a combination of four visual elements: landforms, water, vegetation, and man-made structures. Scenic resource quality is an assessment of the uniqueness or desirability of a visual element. This section reviews and summarizes key scenic resources.

This section was prepared based on existing reports and literature for Willows. Additional sources of information included the California Department of Transportation's (Caltrans) Designated Scenic Route map for Glenn County.

This section provides a background discussion of scenic highways and corridors, and natural scenic resources such as waterways, agricultural lands, and prominent visual features found in the Willows Planning Area. This section is organized with an existing setting, regulatory setting, and impact analysis.

There were no comments received during the NOP comment period related to this environmental topic.

CONCEPTS AND TERMINOLOGY

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Character. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features. The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality. Visual quality is evaluated using the well-established approach to visual analysis adopted by the Federal Highway Administration, employing the concepts of vividness, intactness, and unity, which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.

- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.

- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Viewer Exposure and Sensitivity. The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related, in part, to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middle ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middle ground zone is from the foreground zone to 3–5 miles from the viewer, and the background zone is from the middle ground to infinity.

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work. Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based on a regional frame of reference. The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

Scenic Highway Corridor. The area outside of a highway right-of-way that is generally visible to persons traveling on the highway.

Scenic Highway/Scenic Route. A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources and access or direct views to areas or scenes of exceptional beauty (including those of historic or cultural interest). The aesthetic values of scenic routes often are protected and enhanced by regulations governing the development of property or the placement of outdoor advertising. Until the mid-1980's, general plans in California were required to include a Scenic Highways Element.

View Corridor. A view corridor is a highway, road, trail, or other linear feature that offers travelers a vista of scenic areas within a city or county.

3.1.1 ENVIRONMENTAL SETTING

BUILT & NATURAL ENVIRONMENT

Willows is located at the northern end of the Sacramento Valley in the Central Valley region of California. The City has developed on the flat plain between the foothills of the Coastal Ranges to the West and the Sutter Buttes to the East. Extensive agricultural lands surround the city and provide visual relief and make expansive view of surrounding areas possible.

Nighttime light levels in the majority of the Planning Area are typical of low density areas, although generally darker at night compared to highly developed urban and suburban areas.

SCENIC HIGHWAYS AND CORRIDORS

According to the California Scenic Highway Mapping System, administered by Caltrans, there are no officially designated State Scenic Highways in the vicinity of the City of Willows, or within Glenn County. In addition, there are no eligible State Scenic Highway Corridors in Glenn County that have not yet been officially designated.

Additionally, the City of Willows has not designated any scenic corridors.

OTHER SCENIC RESOURCES AREAS

The City of Willows General does not specifically designate any scenic viewsheds within the city. The General Plan does, however, note the surrounding county's scenic environmental resources including the Sacramento River environment, and surrounding agricultural lands offer scenic value.

Water Resources: Water resources are important visual resources that draw tourists to the area for recreational opportunities, provide critical habitat, and provide for scenic areas within and surrounding urban areas. The most visually significant water body in the region is the Sacramento River located east of Willows within Glenn County.

Agricultural Resources: Much of the undeveloped land within the City Limits, SOI, and areas surrounding the urbanized portion of Willows is predominantly farmland, including alfalfa, orchard, row crops, and pasture. Agricultural lands have become important visual resources that contribute to the community identity of Willows, surrounding areas, and the Valley Region. Agricultural lands provide for visual relief form urbanized areas and act as community separators to nearby urban areas.

LIGHT AND GLARE

During the day, sunlight reflecting from structures is a primary source of glare, while nighttime light and glare can be divided into both stationary and mobile sources. Stationary sources of nighttime light include structure illumination, interior lighting, decorative landscape lighting, and street lights. The principal mobile source of nighttime light and glare is vehicle headlamp illumination. This ambient light environment can be accentuated during periods of low clouds or fog.

The variety of urban land uses in the Planning Area are the main source of daytime and nighttime light and glare. They are typified by single and multi-family residences, commercial structures,

industrial areas, and street lights. These areas and their associated human activities (inclusive of vehicular traffic) characterize the existing light and glare environment present during daytime and nighttime hours in the urbanized portions of the Planning Area. Areas of open space are characterized primarily by non-urban uses and open space uses and lower intensity residential development, and agricultural lands, and generally have lower levels of ambient nighttime lighting and daytime glare.

Sources of glare in urbanized portions of the Planning Area come from light reflecting off surfaces, including glass, and certain siding and paving materials, as well as metal siding/roofing. The urbanized areas of Willows contain sidewalks and paved parking areas which reflect street and vehicle lights. The existing light environment found in the project area is generally considered typical of developed areas.

Sky glow is the effect created by light reflecting into the night sky. Sky glow is of particular concern in areas surrounding observatories, where darker night sky conditions are necessary, but is also of concern in more rural or natural areas where a darker night sky is either the norm or is important to wildlife. Due to the urban nature of the City limits, a number of existing light sources affect residential areas and illuminate the night sky. Isolating impacts of particular sources of light or glare is therefore not appropriate or feasible for the Project.

3.1.2 REGULATORY SETTING

FEDERAL

There are no Federal regulations that apply to the proposed project related to visual resources in the study area.

STATE

California Department of Transportation – California Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. As previously described, there are no scenic highways in the Planning Area or with views of the Planning Area.

LOCAL

City of Willows Design Review Ordinance

Chapter 18.141, Architectural Board of Review, of the City Zoning Ordinance developing contains ordinance with the purpose of preserving a continuity of pictorial design in commercial and other structures, boulevards, parkways, parking lots, parks, aboveground utilities and/or any installation that would affect the aesthetic appeal and beauty of the City of Willows. Buildings, structures and other physical improvements or change of or to existing buildings, structures and other physical improvements shall be subject to design review (unless exempt). Projects subject to the City's Design Review will be reviewed and approved by an architectural review board made up by the planning commission of the City of Willows.

City of Willows Zoning Ordinance

Chapter 18.110, General Provisions and Exceptions, of the City Zoning Ordinance contains several sections that regulate aesthetic or visual standards for development in the City. These include standards for landscaping, yards and fencing requirements for residential, commercial and industrial developments.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: General Plan implementation would not have a substantial adverse effect on a scenic vista (Less than Significant)

While the Willows Planning Area contains numerous areas and viewsheds with scenic value, there are no officially designated scenic vista points or viewsheds in the Planning Area. Additionally, as described above, there are no officially designated scenic highways located in the vicinity of Willows. Significant visual resources in the Planning Area generally consist of distant foothill views, and views of agricultural lands surrounding the city.

The proposed Land Use Map does not convert any open space designated lands to urban uses. However, land uses allowed by the proposed Land Use Map could result in the conversion of agricultural lands to more development commercial and residential uses. Additionally, in some undeveloped areas that are designated for urban uses the general plan would also allow development of these areas, thus changing the visual appearance of these areas.

As described in greater detail in the Project Description chapter (Chapter 2.0), implementation of the proposed General Plan could lead to new and expanded development throughout the city. This new development may result in limited visual changes throughout the Planning Area, which may obstruct or interfere with views of visual features surrounding the Planning Area. Furthermore, buildout under the proposed General Plan and implementation of the General Plan Land Use Map has the potential to result in new and expanded development along roadway corridors with scenic value, even though these corridors are not officially designated as State Scenic Highways.

The implementation of the policies and actions contained in the General Plan listed below would ensure that new residential and non-residential development in the Planning Area is located in and around existing developed areas and developed to be visually compatible with surrounding areas and nearby open space resources. Through implementation of the policies and actions included in

the General Plan, and listed below, implementation of the proposed General Plan would result in a **less than significant impact**.

GENERAL PLAN 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.

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 1.1: Preserve open space for conservation, agricultural, and recreation, uses.

COS 1.2: Recognize open space as essential to maintaining a high quality of life within the Willows Planning Area.

COS 1.3: Support regional and local natural resource preservation plans of public agencies that retain and protect open space within the Planning Area.

COS 1.4: Encourage public and private efforts to preserve open space.

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-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-4a: Continue to maintain and utilize the Willows Architectural Board of Review for review of commercial and other structures, parkways, parking lots, parks, aboveground utilities and/or any installation that would affect the aesthetic appeal of the City of Willows consistent with Municipal Code.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-1a: Continue to work with regional agencies and Glenn County to ensure that regional open space amenities remain publicly-accessible, well-maintained, and provide for essential habitat.

COS-3a: Update Tree Protection Regulations (Municipal Code Chapter 12.30) to:

- *Provide more detailed tree replacement criteria to address the aesthetic loss, and habitat value of the tree being removed; and*
- *Consider adding additional tree species to the master tree list (particularly native species).*

Impact 3.1-2: General Plan implementation would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway (no impact)

As discussed in the settings section, no adopted State scenic highway is located in Willows, and there are no sections of highway in the Willows vicinity eligible for Scenic Highway designation.

Given that no adopted State scenic highways are located within the Planning Area, and that no scenic highways provide views of the Planning Area, **no impact** related to State scenic highways associated with General Plan implementation would be expected.

Impact 3.1-3: Project implementation would not substantially degrade the existing visual character or quality of public views of the site and its surroundings within a non-urbanized areas. Or within urbanized areas, conflict with applicable zoning and other regulations governing scenic quality? (Less than Significant)

CEQA Guidelines Section 15387 defines an urbanized area as a central city or a group of contiguous cities with a population of 50,000 or more, together with adjacent densely populated areas having a population density of at least 1,000 persons per square mile

Section 21071 of the Public Resources Code states: "Urbanized area" means either of the following:

> (a) An incorporated city that meets either of the following criteria:
>
> (1) Has a population of at least 100,000 persons.
>
> (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.

In addition, to be considered an urbanized area according to CEQA, projects must also be within the boundary of a map prepared by the U.S. Bureau of the Census which designates the area as urbanized area. According to the U.S. Bureau of the Census, the planning area is not mapped and designated as urbanized area and does not meet the qualifications for an urbanized area.

Policies in the proposed General Plan are intended to complement and further the regulating of scenic quality and resources, and any development occurring under the proposed General Plan

would be subject to compliance with these guidelines, as well as the applicable regulations set forth in the Willows Municipal Code. The proposed General Plan does not propose any development projects that would substantially degrade the existing visual character or quality of public views of the Sphere of Influence and its surroundings. Scenic quality-related impacts associated with General Plan implementation would thus be **less than significant**. In order to further ensure that future development allowed under the General Plan would not degrade the existing visual character of the environment, the City has included policies and actions in the General Plan (as described under Impact 3.1-1).

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See General Plan policies and actions identified in Impact 3.1-1.

Impact 3.1-4: General Plan implementation could result in the creation of new sources of nighttime lighting and daytime glare (Less than Significant)

The primary sources of daytime glare are generally sunlight reflecting from structures and other reflective surfaces and windows. Implementation of the proposed General Plan would introduce new sources of daytime glare into previously developed areas of the Planning Area and increase the amount of daytime glare in existing urbanized areas. The General Plan Land Use Map identifies areas for the future development of residential, commercial, industrial, recreational, and public uses. Such uses may utilize materials that produce glare. Daytime glare impacts would be most severe in the limited areas of the city that have not been previously disturbed, including the limited number of vacant parcels designated for urbanized land uses, agricultural lands, and in areas that receive a high level of daily viewership.

The primary sources of nighttime lighting are generally from exterior building lights, street lights, and vehicle headlights. Exterior lighting around commercial and industrial areas may be present throughout the night to facilitate extended employee work hours, ensure worker safety, and to provide security lighting around structures and facilities. Nighttime lighting impacts would be most severe in areas that do not currently experience high levels of nighttime lighting. Increased nighttime lighting can reduce visibility of the night sky, resulting in fewer stars being visible and may detracting from the quality of life in Willows. Future development would be required to be consistent with the General Plan, as well as lighting and design requirements in the Willows Municipal Code. The proposed General Plan contains Policy LU 2.1 which would ensure that high quality design and site planning is compatible with surrounding development, public spaces, and natural resources.

Through the implementation of these policies in conjunction with the City's municipal code during the development review process, the City can ensure that adverse impacts associated with daytime glare and nighttime lighting are **less than significant**.

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

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 2.10: 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.

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.

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This section provides a background discussion of agricultural lands, agricultural resources, and forest/timber resources found in the Willows Planning Area. This section is organized with an existing setting, regulatory setting, and impact analysis. Information in this section is derived primarily from the California Important Farmlands Map (California Department of Conservation, 2014), the California Land Conservation (Williamson) Act Status Report (California Department of Conservation, 2016), the Glenn County Agricultural Report (Glenn County Agricultural Commissioner, 2016-2017), and the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2018).

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

3.2.1 ENVIRONMENTAL SETTING

AGRICULTURAL RESOURCES

The Farmland Mapping and Monitoring Program (FMMP) is a farmland classification system administered by the California Department of Conservation. Important farmland maps are based on the Land Inventory and Monitoring criteria, which classify a land's suitability for agricultural production based on both the physical and chemical characteristics of soils, and the actual land use. The system maps five categories of agricultural land, which include important farmlands (prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance) and grazing land, as well as three categories of non-agricultural land, which include urban and built-up land, other land, and water area.

The State of California Department of Conservation Farmland Mapping and Monitoring Program and Glenn County GIS data were used to illustrate the farmland characteristics for the Planning Area. Farmlands in the Planning Area are identified in Table 3.2-1 and are shown on Figure 3.2-1. The farmland classifications for the site and surrounding area are described below.

TABLE 3.2-1: LAND CLASSIFICATION

LAND CLASSIFICATION	*CITY ACRES*	*SOI ACRES*	*GRAND TOTAL*	*% OF TOTAL*
D - URBAN AND BUILT-UP LAND	887.17	797.36	1684.54	33.3%
L - FARMLAND OF LOCAL IMPORTANCE	216.73	334.31	551.05	10.9%
LP - FARMLAND OF LOCAL POTENTIAL	0	142.15	142.15	2.8%
P - PRIME FARMLAND	207.29	1580.82	1788.11	35.4%
S - FARMLAND OF STATEWIDE IMPORTANCE	101.55	657.74	759.29	15.0%
U - UNIQUE FARMLAND	1.57	0.25	1.82	0.0%
OTHER LAND	39.79	86.45	126.24	2.5%
GRAND TOTAL	1454.12	3599.09	5053.21	100.0%

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION 2018.

Prime Farmland is farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 1788.11 acres of Prime Farmland is located within the Planning Area.

Farmland of Statewide Importance is farmland with characteristics similar to those of prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 759.29 acres of Farmland of Statewide Importance is located within the Planning Area.

Unique Farmland is land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Approximately 1.82 acres of Unique Farmland is located within the Planning Area.

Farmland of Local Importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. Approximately 551.05 acres of Farmland of Local Importance is located within the Planning Area.

Local Potential (LP): All lands having Prime and Statewide soil mapping units which are not irrigated, regardless of cropping history or irrigation water availability.

Urban and Built-up Land includes Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. Approximately 1684.54 acres of Urban and Built-Up Land is located within the Planning Area.

Other Land consists Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land. Approximately 126.24 acres of Other Land is located within the Planning Area.

Farmland Preservation

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. The Williamson Act is described in greater detail under the Regulatory Setting section of this chapter.

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless the property owner requests a non-renewal or the contract is cancelled.

If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

Table 3.2-2 shows lands within the Planning Area that are under a Williamson Act contract and the status of the contract. As shown in Table 3.2-2, approximately 143.21 acres are Farmland Security Zone (FSZ) and approximately 377.05 are Mixed Enrollment Agricultural Land are enrolled. All Williamson Act lands are located outside the City Limits and within the Willows SOI.

TABLE 3.2-2: SUMMARY OF WILLIAMSON ACT CONTRACTS

CONTRACT LOCATION AND TYPE	*TOTAL ACRES*
Farmland Security Zone	143.21
Mixed Enrollment Agricultural Land	377.05
Total	520.26

SOURCE: SOURCES: CALIFORNIA DEPARTMENT OF CONSERVATION, DIVISION OF LAND RESOURCE PROTECTION, WILLIAMSON ACT 2017.

Figure 3.2-2 depicts the distribution of Williamson Act Contract lands in the Planning Area.

FOREST RESOURCES

Forest land is defined by Public Resources Code Section 12220(g), and includes *"land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."*

Timber land is defined by Public Resources Code Section 4526, and means *"land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis."*

There are no forest lands or timber lands located within the Willows Planning Area.

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

The Natural Resources Conservation Service (NRCS), an agency within the U.S. Department of Agriculture, is responsible for implementation of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize Federal programs' contribution to the conversion of farmland to non-agricultural uses by ensuring that Federal programs are administered in a manner that is compatible with state, local, and private programs designed to protect farmland. The NRCS provides technical assistance to Federal agencies, state and local governments, tribes, and nonprofit organizations that desire to develop farmland protection programs and policies. The NRCS summarizes FPPA implementation in an annual report to Congress.

Farm and Ranch Lands Protection Program

The NRCS administers the Farm and Ranch Lands Protection Program (FRPP), a voluntary program aimed at keeping productive farmland in agricultural uses. Under the FRPP, the NRCS provides matching funds to state, local, or tribal government entities and nonprofit organizations with existing farmland protection programs to purchase conservation easements. According to the 1996 Farm Bill, the goal of the program is to protect between 170,000 and 340,000 acres of farmland per year. Participating landowners agree not to convert the land to non-agricultural use and retain all rights to use the property for agriculture. A conservation plan must be developed for all lands enrolled based upon the standards contained in the NRCS Field Office Technical Guide. A minimum of 30 years is required for conservation easements and priority is given to applications with perpetual easements. The NRCS provides up to 50 percent of the fair market value of the easement being conserved (NRCS, 2004). To qualify for a conservation easement, farm or ranch land must meet several criteria. The land must be:

- Prime, Unique, or other productive soil, as defined by NRCS based on factors such as water moisture regimes, available water capacity, developed irrigation water supply, soil temperature range, acid-alkali balance, water table, soil sodium content, potential for flooding, erodibility, permeability rate, rock fragment content, and soil rooting depth;
- Included in a pending offer to be managed by a nonprofit organization, state, tribal, or local farmland protection program;
- Privately owned;
- Placed under a conservation plan;
- Large enough to sustain agricultural production;
- Accessible to markets for the crop that the land produces; and
- Surrounded by parcels of land that can support long-term agricultural production.

STATE

California Department of Conservation

The DOC administers and supports a number of programs, including the Williamson Act, the California Farmland Conservancy Program (CFCP), the Williamson Act Easement Exchange Program (WAEEP), and the FMMP. These programs are designed to preserve agricultural land and provide data on conversion of agricultural land to urban use. The DOC has authority for the approval of agreements entered into under the WAEEP. Key DOC tools available for land conservation planning are conservation grants, tax incentives to keep land in agriculture or open space, and farmland mapping and monitoring.

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents.

The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 10-year term that is automatically renewed each year, unless the property owner requests a non-renewal or the contract is cancelled. If the contract is cancelled the property owner is assessed a fee of up to 12.5 percent of the property value.

Farmland Security Zones

In 1998 the state legislature established the Farmland Security Zone (FSZ) program. FSZs are similar to Williamson Act contracts, in that the intention is to protect farmland from conversion. The main difference however, is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The term of the contract is a minimum of 20 years. The property owners are offered an incentive of greater property tax reductions when compared to the Williamson Act contract tax incentives; the incentives were developed to encourage conservation of prime farmland through FSZs. The non-renewal and cancellation procedures are similar to those for Williamson Act contracts.

California Government Code Section 560643

This section of the Government Codes defines “Prime agricultural land” as follows:

- Prime agricultural land means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications:

- Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
- Land that qualifies for rating 80 through 100 Storie Index Rating.
- Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
- Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will re-turn during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.
- Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years.

Forest Practices Rules

The California Department of Forestry and Fire Protection (CalFire) implements the laws that regulate timber harvesting on privately-owned lands. These laws are contained in the Z'berg-Nejedly Forest Practice Act of 1973 which established a set of rules known as the Forest Practice Rules (FPRs) to be applied to forest management related activities (i.e., timber harvests, timberland conversions, fire hazard removal, etc.). They are intended to ensure that timber harvesting is conducted in a manner that will preserve and protect fish, wildlife, forests, and streams. Under the Forest Practice Act, a Timber Harvesting Plan (THP) is submitted to CalFire by the landowner outlining what timber is proposed to be harvested, harvesting method, and the steps that will be taken to prevent damage to the environment. If the landowner intends to convert timberland to non-timberland uses, such as a winery or vineyard, a Timberland Conversion Permit (TCP) is required in addition to the THP. It is CalFire's intent that a THP will not be approved which fails to adopt feasible mitigation measures or alternatives from the range of measures set out or provided for in the Forest Practice Rules, which would substantially lessen or avoid significant adverse environmental impacts resulting from timber harvest activities. THPs are required to be prepared by Registered Professional Foresters (RPFs) who are licensed to prepare these plans (CalFire, 2007). For projects involving TCPs, CalFire acts as lead agency under CEQA, and the county or city acts as a responsible agency.

LOCAL

Local Agency Formation Commission Boundary Controls

The Glenn Local Agency Formation Commission (LAFCO) is responsible for coordinating orderly amendments to local jurisdictional boundaries, including annexations. Annexation to the City of Willows would be subject to LAFCO approval, and LAFCO's decision is governed by state law (Gov't Code § 56001 et seq.) and the local LAFCO Policies and Procedures. State law requires LAFCOs to consider agricultural land and open space preservation in all decisions related to expansion of urban

development. LAFCO's definition of Prime agricultural land refers to California Government Code Section 56064.3, which is described above under the State Regulatory Setting.

3.2.3 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 planning if it will:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526); or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: General Plan implementation would result in the conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (Significant and Unavoidable)

As shown in Table 3.2-1, there are Important Farmlands located within the city limits and SOI, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. As shown on the General Plan Land Use Map (Figure 2.0-3) lands within the city limits and SOI are planned for additional development. Therefore, it is assumed that the agricultural viability of all of the Important Farmlands within the city and SOI may eventually be lost upon full buildout of the General Plan.

The General Plan emphasizes and prioritizes infill development, however developed county-wide is focused in and around the incorporated communities including Willows, which will overtime require growth into areas of undeveloped lands including agricultural lands within the city limits and SOI.

As shown in Table 3.2-1, there are Important Farmlands located outside of the city limits, within the Planning Area, including 1580.82 acres of Prime Farmland, 657.74 acres of Farmland of Statewide Importance, 0.25 acres of Unique Farmland, and 334.31 acres of Farmland of Local Importance.

Table 3.2-3 identifies the proposed land use designation for the Important Farmland acres located in the Planning Area. As shown in this table, of the 527.15 acres of Important Farmland located within the City Limit, 34.16 acres (approximately 6.5%) are assigned land use designations on the General Plan Land Use Map that would protect the agricultural viability of the land. Of the 2573.13 acres of Important Farmland located within the SOI, 264.42 acres (approximately 10.3%) are assigned land use designations on the General Plan Land Use Map that would protect the agricultural viability of the land.

As described in greater detail in Section 2.0 of this EIR, the Open Space designation identifies lands that are permanently protected from future urban development through the application of conservation easements or other formal mechanisms to ensure that open space uses are continued in perpetuity. The Urban Reserve designation serves as a placeholder for future urban development. The land designated as Urban Reserve is located beyond the existing Sphere of Influence (SOI) and outside the Urban Limit Line. Lands designated Urban Reserve shall not be extensively subdivided or developed until it is appropriate to develop the lands with urban levels of residential, commercial, parks and recreation, and public/semi-public uses. It is expected that more specific planning and feasibility studies will be required prior to the development of these areas.

As shown in Table 3.2-3, approximately 3,100 acres of Important Farmlands, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance may be converted to urban land uses upon full buildout of the Planning Area.

Table 3.2-3: FMMP Farmland Classification and Land Use Designations in The Planning Area

Land Use Designation	Farmland of Local Importance (Acres)	Prime Farmland (Acres)	Farmland of Statewide Importance (Acres)	Unique Farmland (Acres)	Grand Total (Acres)
City	**216.73**	**207.29**	**101.55**	**1.57**	**527.15**
Commercial/Industrial Combining Use	62.73	85.40	17.75	1.57	167.45
General Industrial	0.00	4.77	0.10	0.00	4.87
Light Industrial	0.00	107.43	30.30	0.00	137.73
Low Density Residential	99.08	0.00	0.00	0.00	99.08
Multiple Family Residential	8.00	0.00	0.00	0.00	8.00
Public Facilities and Services	12.77	9.69	53.40	0.00	75.85
ROW/Canal	0.00	0.01	0.00	0.00	0.01
Land Use That Would Protect Agricultural Viability					
Open Space	34.16	0.00	0.00	0.00	34.16
SOI	**334.31**	**1580.82**	**657.74**	**0.25**	**2573.13**
Agricultural/Residential	0.14	0.00	63.45	0.00	63.59
General Commercial	23.34	16.40	19.23	0.00	58.96
General Industrial	174.00	365.08	59.20	0.00	598.28
Highway Commercial	0.14	183.22	86.12	0.25	269.73
Light Industrial	74.02	34.31	115.66	0.00	224.00
Low Density Residential	62.33	789.97	236.19	0.00	1088.50
Mixed Use	0.00	4.75	0.00	0.00	4.75
Public Facilities and Services	0.32	0.02	0.54	0.00	0.88
Land Use That Would Protect Agricultural Viability					
Urban Reserve	0.00	187.08	77.35	0.00	264.42

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION, 2018, AND DE NOVO PLANNING GROUP, 2022.

The proposed Willows General Plan includes a wide range of policies and actions aimed at protecting and preserving agricultural lands within the Planning Area. For example, Policies COS 9-1 through 9-3 encourage and support the preservation and protection of agricultural lands throughout the Planning Area, and support programs that create or establish permanent agricultural areas. The lands within the Planning Area that are identified for future urban land uses are generally located adjacent to the city limits, and along transportation corridors near the city limits. As shown on the Land Use Map, the General Plan avoids potential "leap-frog" development by promoting a compact land use plan that prioritizes development within and adjacent to existing urbanized areas.

The Willows General Plan has taken a proactive approach towards focusing new growth and development towards infill locations, and protecting open space areas and agricultural lands throughout the Planning Area to the greatest extent feasible. The applicable policies and actions that provide protection and preservation of agricultural lands are identified below.

However, as described above, implementation of the proposed Willows General Plan may lead to the urbanization of Important Farmlands located within the city limits and Planning Area. The policies and actions listed below would minimize this impact. However, this is considered a **significant and unavoidable** impact.

GENERAL PLAN MINIMIZATION MEASURES

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 9-1: Support and encourage the preservation of agricultural lands throughout Planning Area, consistent with the adopted Land Use Map.

COS 9-2: Support the continuation of agricultural uses on lands designated for urban use, until urban development transitions are approved.

COS 9-3: Provide an orderly and phased development pattern, encouraging the development of vacant lands within City boundaries and or in areas adjacent to existing development prior to conversion of unconnected agricultural lands, so that farmland is not subjected to premature development pressure or leapfrog developments.

COS 9-4: Promote agricultural lands surrounding the City's Planning Area that serve as buffers and continue the agricultural heritage of Willows.

COS 9-5: Minimize conflicts between agricultural and urban land uses.

COS 9-6: Limit incompatible uses (i.e., schools, hospitals, and high density residential) near agricultural operations.

COS 9-7: As feasible, utilize buffers such as greenbelts, drainage features, parks, or other improved and maintained features in order to separate residential and other sensitive land uses, such as schools and hospitals, from agricultural lands and agricultural operations.

COS 9-8: Require new development to have structural setbacks that respect agricultural operations.

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 9-10: Promote best management practices in agricultural operations to reduce emissions, conserve energy and water, and utilize alternative energy sources.

COS 9-11: Encourage small-scale food production, such as community gardens and cooperative neighborhood growing efforts, on parcels within the City Limits, provided that the operations do not conflict with existing adjacent urban uses. Support farmers markets and other local resources that support local agriculture and provide fresh local foods.

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 POLICIES

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 2-2: 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 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 4-5: Maintain a supply of industrial land to support a wide array of manufacturing and agricultural support uses.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS 9a: Explore opportunities to update the Willows Municipal Code to adopt a Right to Farm ordnance in order to protect farming uses from encroaching urban uses and to notify potential homebuyers of nearby agricultural operations.

COS 9b: Consider impacts to agricultural lands and agricultural productivity when reviewing new development projects, amendments to the General Plan, and rezoning applications.

COS 9c: Amend Title 18 (Zoning) of the Willows Municipal Code to include specific agricultural buffer requirements for residential and sensitive land uses (i.e., schools, day care facilities, and medical facilities) that are proposed near existing agricultural lands in order to protect the associated agricultural operations from encroachment by incompatible uses.

COS 9d: Work with Glenn County to implement consistent policies for agricultural lands in Willows Planning Area.

COS 9e: Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly

those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of a reasonable and logical Sphere of Influence (SOI) boundary for the City.

LAND USE ELEMENT ACTIONS

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 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.

Impact 3.2-2: General Plan implementation may result in conflicts with existing Williamson Act Contracts (Significant and Unavoidable)

There are approximately 143.21 acres are Farmland Security Zone (FSZ) and approximately 377.05 are Mixed Enrollment Agricultural Land within the Planning Area that are currently under Williamson Act contract. Figure 3.2-2 depicts the distribution of Williamson Act Contract lands in the Planning Area.

Adoption of the proposed General Plan would lead to changes of use of 255.84 acres of parcels under a Williamson Act Contract within the Planning Area that are currently designated for agricultural uses. These parcels have been assigned an urban land use designation by the General Plan Land Use Map, which may lead to the urbanization of these parcels, and the cessation of agricultural operations, during the life of the General Plan.

As described in greater detail under Impact 3.2-1 above, the General Plan includes a comprehensive set of policies and actions aimed at protecting, enhancing, and preserving agricultural lands and agricultural resources throughout the Planning Area. However, implementation of the General Plan would assign urban land uses to approximately 520.26 acres of land under a Williamson Act Contract, 255.84 acres of which is not currently designated for urban uses. This is considered a **significant and unavoidable** impact. The policies and actions listed under Impact 3.2-1 would reduce this impact to the greatest extent feasible, but not to a less than significant level.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in Impact 3.2-1

Impact 3.2-3: General Plan implementation would not result in the loss of forest land or conversion of forest land to non-forest use (No Impact)

The Planning Area does not contain parcels designated as forest land and the proposed General Plan does not propose uses that would convert existing forest land to non-forest use. Therefore, the Project would result in ***no impact*** regarding the loss of forest land or conversion of forest land to non-forest use.

Impact 3.2-4: General Plan implementation would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use (Less than Significant)

As discussed in Impact 3.2-1, future development in accordance with the proposed General Plan would result in the conversion of farmland to a non-agricultural use. The proposed General Plan would allow new urban uses that have the potential to conflict with existing agricultural operations. Future development in areas within the Planning Area may involve other changes in the existing environment that could result in the conversion of farmland. However, as mentioned previously the proposed General Plan includes policies which would reduce the impact of development resulting in the conversion of existing farmland. This includes policies which encourage agricultural land uses in areas outside of Willows while supporting the continuation of agricultural operations and activities on lands adjacent to the SOI and with the City and SOI.

Adherence to the policies and actions stated above under Impact 3.2-1 would ensure that projects include adequate measures to buffer project uses from adjacent agricultural uses and would reduce adverse effects on neighboring agricultural uses, while supporting ongoing agricultural operations in areas within and surrounding the city. Therefore, the proposed General Plan would result in a ***less than significant*** impact involving other changes in the existing environment that could result in the conversion of farmland.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in Impact 3.2-1

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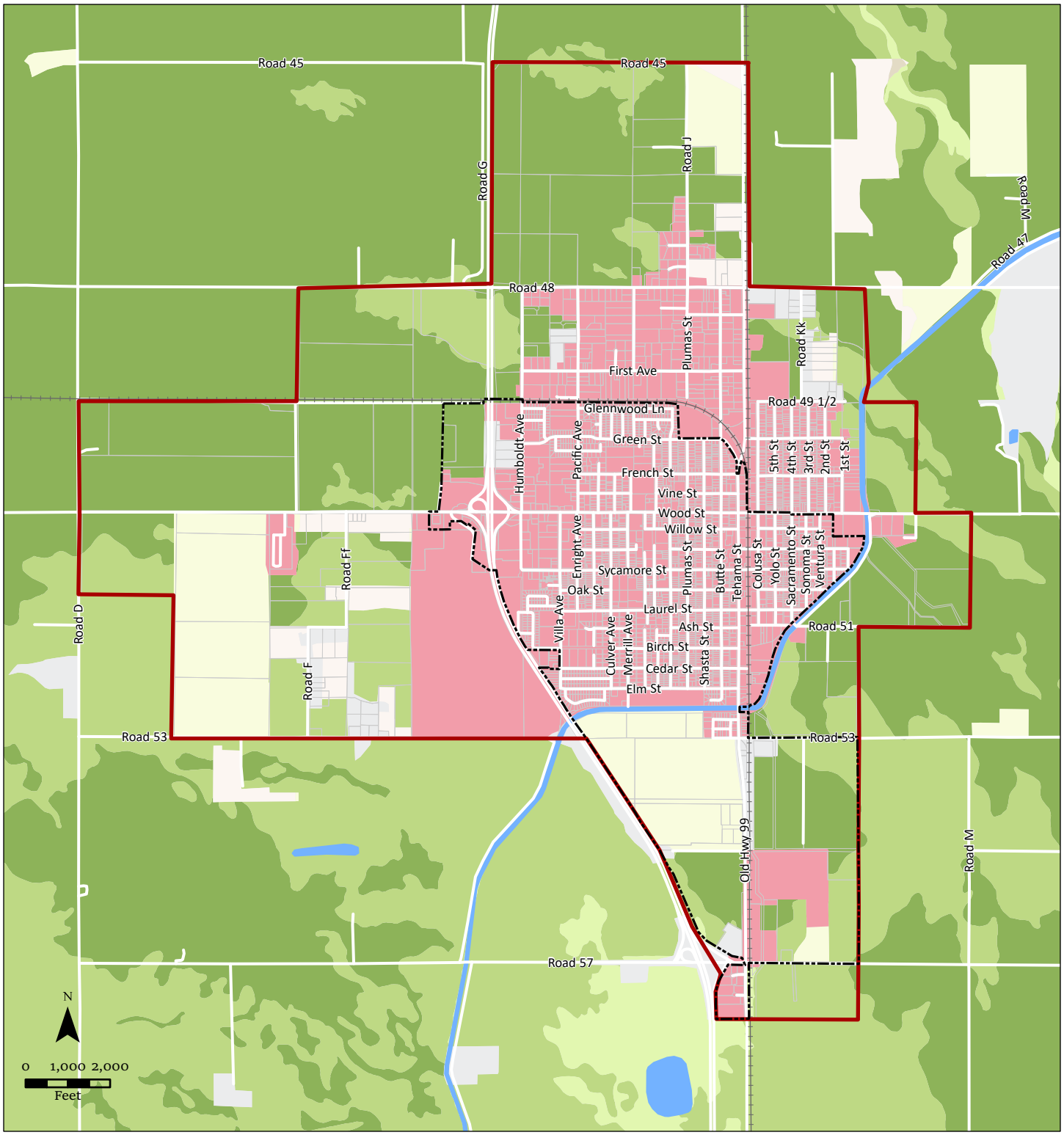

Sources: California Department of Conservation, Farmland Mapping and Monitoring Program, Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.2-1 IMPORTANT FARMLANDS

Legend

- City of Willows
- Willows Sphere of Influence

Farmland Classifications

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Grazing Land
- Farmland of Local Importance
- Farmland of Local Potential
- Other Land
- Urban and Built-Up Land

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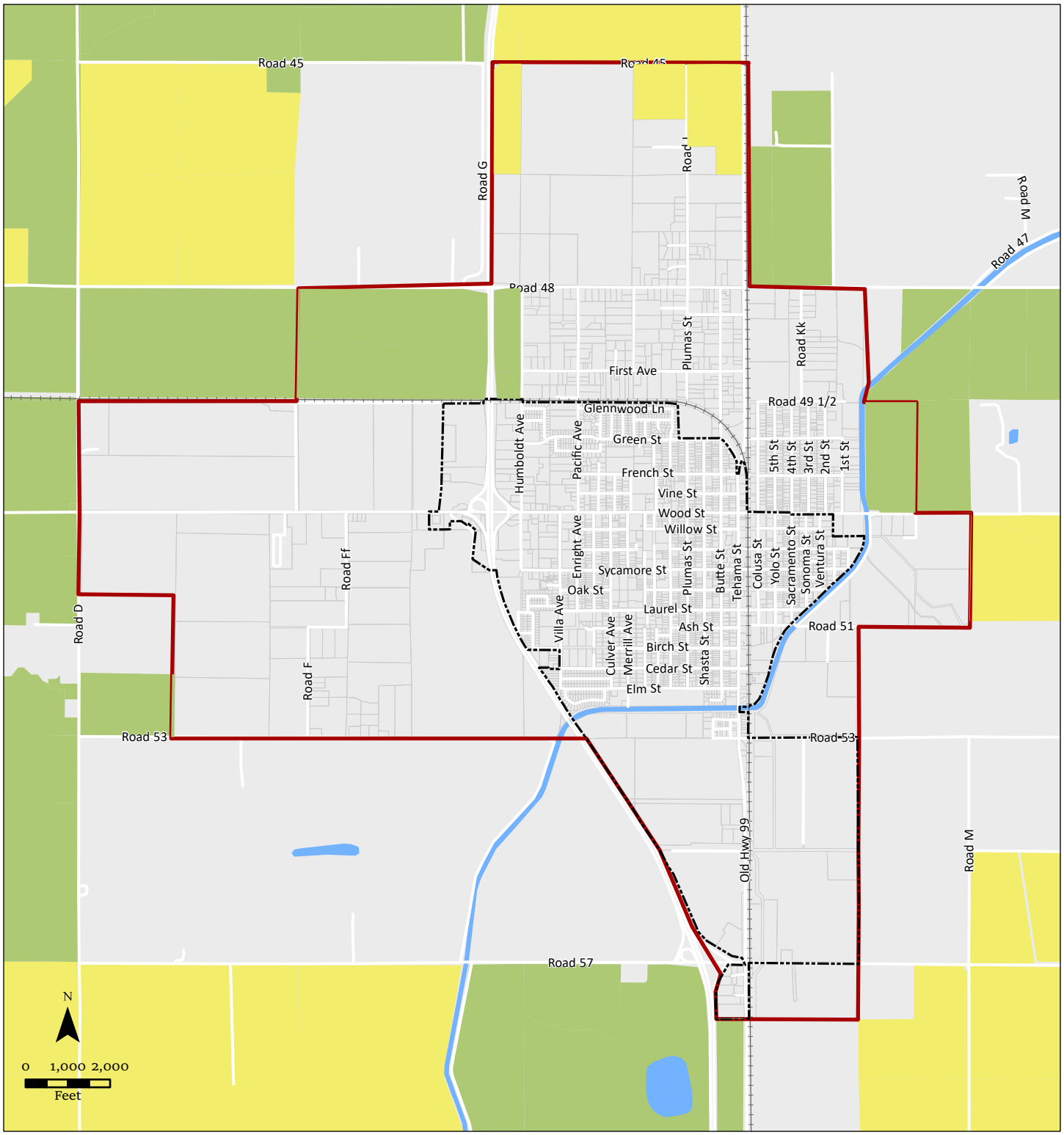

Sources: California Department of Conservation, Division of Land Resource Protection, Williamson Act 2017. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.2-2 WILLIAMSON ACT CONTRACTS

Legend

- City of Willows
- Willows Sphere of Influence

Williamson Act

- Farmland Security Zone
- Mixed Enrollment Agricultural Land

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This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. Information presented in this section is based in part on information gathered from the Glenn County Air Pollution Control District (Glenn County APCD) and the California Air Resources Board (CARB).

There were no comments received during the NOP public review period for the NOP related to air quality. The Greenhouse Gases, Climate Change, and Energy analysis is included in Section 3.7 of this document.

3.3.1 ENVIRONMENTAL SETTING

SACRAMENTO VALLEY AIR BASIN (SVAB)

The Planning Area is located within the Sacramento Valley Air Basin (SVAB). The SVAB is the northern half of California's Great Valley and is bordered on three sides (west, north, and east) by mountain ranges, with peaks in the eastern range above 9,000 feet. Figure 3.3-1 delineates the boundary of the SVAB. The SVAB is approximately 13,700 square miles and essentially a smooth valley floor with elevations ranging from 40 to 500 feet. The rolling valley is interrupted by the Sutter Buttes, an area of 80 square miles in northern Sutter County, which rise abruptly to more than 2,100 feet above the valley floor.

The SVAB consists of 11 counties and is split into two planning sections based on the degree of pollutant transport from one area to the other and the level of emissions within each area. The Glenn County area belongs to the Northern Sacramento Valley Air Basin (NSVAB), which is composed of the seven northern-most counties of the SVAB. These counties include Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba.

Air quality in this area is determined by natural factors such as Climate, meteorology, and air movement, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

Climate

The 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.

Willows 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.

Air Movement

The Sacramento Valley portion of the air basin forms a bowl, bounded on the west by the Coast Ranges, on the north by the Cascade Range, and on the east by the Sierra Nevada. These mountain ranges reach heights exceeding 7,000 feet above sea level. During summer, the wide, flat expanse

of the Sacramento Valley provides an ideal environment for the formation of photochemical smog. Moreover, the prevailing winds in the Sacramento Valley blow from south to north, driven by the marine air traveling through the Carquinez Strait. These winds can transport pollutants from the broader Sacramento area and from the San Francisco Bay Area to the Northern Sacramento Valley Air Basin. The mountain ranges that surround the Northern Sacramento Valley Air Basin provide a physical barrier to continued movement of the air mass, significantly hindering the dispersal of pollutants.

Generally, the basin experiences moderate to very poor capability to disperse pollutants nearly 80 percent of the time. This is, in large measure, due to the relatively stable atmosphere which acts to suppress vertical air movement. Extremely stable atmospheric conditions referred to as "inversions" act as barriers to pollutants. In valley locations under 1,000 ft, they create a "lid" under which pollutants are trapped. Dust and other pollutants can become trapped within these inversion layers and will not disperse until atmospheric conditions become more unstable. This situation creates concentrations of pollutants at or near the ground surface which pose significant health risks for plants, animals, and people.

Inversions occur in the SVAB with great frequency in all seasons. The most stable inversions occur in late summer and fall. The summertime inversions are often the result of marine air pushing under an overlying warm air mass. These are termed “marine inversions” and are generally accompanied by brisk afternoon winds, which provide good air circulation.

In contrast, many autumn inversions are the result of warm air subsiding in a high-pressure cell where accompanying light winds do not provide adequate dispersion. Autumn inversions limit vertical mixing, creating a very stable layer of air with very light or calm winds. These inversions are usually present on clear cold nights during late fall and winter. In the morning, these ground-based inversions are weakened and eventually eliminated by solar heating. As a result, they are strongest in the late night and early morning, when ground-level temperatures are coldest and solar radiation is low.

Seasonal Pollution Variations

Carbon monoxide, oxides of nitrogen, particulate matters, and lead particulate concentrations in the late fall and winter are highest when there is little interchange of air between the valley and the coast and when humidity is high following winter rains. This type of weather is associated with radiation fog, known as tule fog, when temperature inversions at ground level persist over the entire valley for several weeks and air movement is virtually absent.

Pollution potential throughout Glenn County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM_{10}) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide “hot spots” are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the

reaction of reactive organic gases (ROG) and nitrogen oxides (NOx) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in Glenn County during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM_{10} and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original or "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of the Sacramento Valley.

Temperature Inversions

A temperature inversion is a reversal in the normal decrease of temperature as altitude increases. In most parts of the country, air near ground level is warmer than the air above it. Semi-permanent systems of high barometric pressure fronts establish themselves over the basin, deflecting low-pressure systems that might otherwise bring cleansing rain and winds. The height of the base of the inversion is known as the "mixing height" and controls the volume of air available for the mixing and dispersion of air pollutants.

The interrelationship of air pollutants and climatic factors are most critical on days of greatly reduced atmospheric ventilation. On days such as these, air pollutants accumulate because of the simultaneous occurrence of three favorable factors: low inversions, low maximum mixing heights and low wind speeds. Although these conditions may occur throughout the year, the months of July, August and September generally account for more than 40 percent of these occurrences.

The potential for high contaminant levels varies seasonally for many contaminants. During late spring, summer, and early fall, light winds, low mixing heights, and sunshine combine to produce conditions favorable for the maximum production of oxidants, mainly ozone. When strong surface inversions are formed on winter nights, especially during the hours before sunrise, coupled with near-calm winds, carbon monoxide from automobile exhausts becomes highly concentrated. The highest yearly concentrations of carbon monoxide and oxides of nitrogen and measured during November, December and January.

CRITERIA POLLUTANTS AND EXISTING AMBIENT AIR QUALITY

Criteria Pollutants

The U.S. Environmental Protection Agency (U.S. EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O_3) is a photochemical oxidant and the major component of smog. While ozone in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of ozone at ground level are a major health and environmental concern. ozone is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak ozone levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of ozone causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of ozone not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to ozone for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide. NOx plays a major role, together with VOCs, in the atmospheric reactions that produce ozone. NOx forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO_2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts

of the country. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM_{10}) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural activities (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM_{10} causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter ($PM_{2.5}$) consists of fine particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for $PM_{2.5}$.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also impacts soils and damages materials, and is a major cause of visibility impairment.

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

Sensitive Receptors

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.

Ambient Air Quality

Both the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air

quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The federal and California state ambient air quality standards are summarized in Table 3.3-1 for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter (PM_{10}).

The U.S. Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.075 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001. In April 2005, the Air Resources Board approved a new eight-hour standard of 0.070 ppm and retained the one-hour ozone standard of 0.09 after an extensive review of the scientific literature. The U.S. EPA signed a final rule for the Federal ozone eight-hour standard of 0.070 ppm on October 1, 2015, and was effective as of December 28, 2015.

TABLE 3.3-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour 8-Hour	-- 0.070 ppm	0.09 ppm 0.070 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.053 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 0.075 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
$PM_{2.5}$	Annual 24-Hour	12 ug/m^3 35 ug/m^3	12 ug/m^3 --
Lead	30-Day Avg. 3-Month Avg.	-- 0.15 ug/m^3	1.5 ug/m^3 --

NOTES: PPM = PARTS PER MILLION, µG/M^3 = MICROGRAMS PER CUBIC METER
SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2017A.

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less ($PM_{2.5}$) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were revised.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within the project area is related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region.

Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Glenn County has a State designation of Nonattainment for O_3, PM_{10}, and $PM_{2.5}$ and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for $O_3$and $PM_{2.5}$. The County is designated either attainment or unclassified for the remaining national standards. Table 3.3-2 presents the State and national attainment status for Glenn County.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

CRITERIA POLLUTANTS	*STATE DESIGNATIONS*	*NATIONAL DESIGNATIONS*
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	
Lead	Attainment	
Hydrogen Sulfide	Unclassified	
Visibility Reducing Particles	Unclassified	

SOURCES: CALIFORNIA AIR RESOURCES BOARD (2018). WWW.ARB.CA.GOV/DESIG/ADM/ADM.HTM

Sacramento Valley Air Basin Monitoring

The SVAB consists of eleven counties, from Shasta County in the north to Sacramento County in the south. CARB maintains numerous air quality monitoring sites throughout each County in the Air

Basin to measure O_3, $PM_{2.5}$, and PM_{10}. It is important to note that the Federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for Federal standards. Data obtained from the SVAB monitoring sites over the last 3-year period is shown in Table 3.3-3.

TABLE 3.3-3: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE

Year	Days > Standard				1-Hour Observations			8-Hour Averages				Year Coverage	
	State		National			State	Nat'l	State		National			
	1-Hr	8-Hr	1-Hr	8-Hr	Max.	D.V.[1]	D.V.[2]	Max.	D.V.[1]	Max.	D.V.[2]	Min	Max
2017	8	47	*1*	45	0.121	0.11	0.107	0.092	0.091	0.091	0.084	0	100
2016	17	61	*1*	59	0.115	0.11	0.107	0.100	0.093	0.099	0.083	81	100
2015	9	42	*1*	38	0.122	0.10	0.101	0.100	0.088	0.100	0.080	0	100

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V.[1] = STATE DESIGNATION VALUE. D.V.[2] = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR iADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-4: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 2.5

Year	Est. Days > Nat'l '06 Std.	Annual Average		Nat'l Ann. Std. D.V.[1]	State Annual D.V.[2]	Nat'l '06 Std. 98th Percentile	Nat'l '06 24-Hr Std. D.V.[1]	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State	Min.	Max.
2017	12.3	9.7	14.0	9.6	14	40.6	34	85.9	85.9	87	100
2016	3.3	8.8	11.4	9.3	12	28.2	31	46.8	57.5	8	100
2015	8.7	10.4	12.3	10.2	13	37.8	35	109.8	109.8	86	99

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V.[1] = STATE DESIGNATION VALUE. D.V.[2] = NATIONAL DESIGN VALUE.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR iADAM) AIR POLLUTION SUMMARIES.

TABLE 3.3-5: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM 10

Year	Est. Days > Std.		Annual Average		3-Year Average		High 24-Hr Average		Year Coverage
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	
2016	6.1	19.3	26.4	22.0	24	23	237.7	242.0	100
2015	*	12.2	24.2	20.6	23	25	88.5	88.9	100
2014	0.0	25.2	27.0	24.9	20	25	114.6	118.0	100

NOTES: THE NATIONAL ANNUAL AVERAGE PM_{10} STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCE: CALIFORNIA AIR RESOURCES BOARD (AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM OR iADAM) AIR POLLUTION SUMMARIES.

Glenn County Air Quality Monitoring

Glenn County APCD and CARB maintain one air quality monitoring site in Glenn County that collect data for O_3, PM_{10}, and $PM_{2.5}$, the Willows - Colusa monitoring site. The Federal ozone 1-hour standard was revoked by the EPA in 2005, but subsequent litigation reinstated portions of implementation requirements under the revoked standard. As a result, the Glenn County APCD adopted the 2013 Plan for the Revoked 1-Hour Ozone Standard in September 2013 to address the reinstated requirements for this standard. Data obtained from the monitoring sites between 2015 through 2017 is shown in Tables 3.3-6.

TABLE 3.3-6: AMBIENT AIR QUALITY MONITORING DATA (WILLOWS– COLUSA)

Pollutant	*Cal.* / *Primary Standard*	*Fed.* / *Primary Standard*	*Year*	*Max Concentration*	*Days Exceeded State/Fed Standard*
Ozone (O_3) (1-hour)	0.09 ppm for 1 hour	NA	2015 2016 2017	0.080 0.070 0.068	0/NA 0/NA 0/NA
Ozone (O_3) (8-hour)	0.07 ppm for 8 hour	0.07 ppm for 8 hour	2015 2016 2017	0.072 0.070 0.068	0/0 0/0 0/0
Particulate Matter (PM_{10})	50 ug/m^3 for 24 hours	150 ug/m^3 for 24 hours	2015 2016 2017	118.0 79.6 181.7	*/0 */0 */1.0
Fine Particulate Matter ($PM_{2.5}$)	No 24 hour State Standard	35 ug/m^3 for 24 hours	2015 2016 2017	31.8 31.1 55.2	NA/* NA/* NA/*

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2015, 2016, AND 2017.

NOTES:

PPM = PARTS PER MILLION.

UG/M3 = MICRONS PER CUBIC METER.

NA= NOT APPLICABLE

** = THERE WAS INSUFFICIENT (OR NO) DATA AVAILABLE TO DETERMINE THE VALUE*

Odors

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

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

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

NATURALLY OCCURRING ASBESTOS

The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally occurring asbestos is commonly associated with ultramafic rocks and serpentinite. Ultramafic rocks, such as dunite, peridotite, and pyroxenite are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth's surface. The metamorphic rock serpentinite is a common product of the alteration process. There is no naturally occurring asbestos mapped within Willows or the Planning Area.

3.3.2 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: 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. EPA 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 (with an adequate margin of safety, including for sensitive populations such as children, the elderly, and individuals suffering from respiratory diseases), and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

NAAQS standards define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the ozone and $PM_{2.5}$ ambient air quality standards indicate that certain individuals

exposed to these pollutants may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

NAAQS standards have been designed to accurately reflect the latest scientific knowledge and are reviewed every five years by a Clean Air Scientific Advisory Committee (CASAC), consisting of seven members appointed by the USEPA administrator. Reviewing NAAQS is a lengthy undertaking and includes the following major phases: Planning, Integrated Science Assessment (ISA), Risk/Exposure Assessment (REA), Policy Assessment (PA), and Rulemaking. The process starts with a comprehensive review of the relevant scientific literature. The literature is summarized and conclusions are presented in the ISA. Based on the ISA, USEPA staff perform a risk and exposure assessment, which is summarized in the REA document. The third document, the PA, integrates the findings and conclusions of the ISA and REA into a policy context, and provides lines of reasoning that could be used to support retention or revision of the existing NAAQS, as well as several alternative standards that could be supported by the review findings. Each of these three documents is released for public comment and public peer review by the CASAC. Members of CASAC are appointed by the USEPA Administrator for their expertise in one or more of the subject areas covered in the ISA. The committee's role is to peer review the NAAQS documents, ensure that they reflect the thinking of the scientific community, and advise the Administrator on the technical and scientific aspects of standard setting. Each document goes through two to three drafts before CASAC deems it to be final.

Although there is some variability among the health effects of the NAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. NAAQS standards were last revised for each of the six criteria pollutants as listed below, with detail on what aspects of NAAQS changed during the most recent update:

- Ozone: On October 1, 2015, the U.S. EPA lowered the national eight-hour standard from 0.075 ppm to 0.070 ppm, providing for a more stringent standard consistent with the current California state standard.

- CO: In 2011, the primary standards were retained from the original 1971 level, without revision. The secondary standards were revoked in 1985.

- NO_2: The national NO_2 standard was most recently revised in 2010 following an exhaustive review of new literature pointed to evidence for adverse effects in asthmatics at lower NO_2 concentrations than the existing national standard.

- SO_2: On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-

year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb.

- PM: the national annual average $PM_{2.5}$ standard was most recently revised in 2012 following an exhaustive review of new literature pointed to evidence for increased risk of premature mortality at lower $PM_{2.5}$ concentrations than the existing standard.
- Lead: The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. In 2016, the primary and secondary standards were retained.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the USEPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. The CARB is the state agency that is responsible for preparing and implementing the California SIP.

Transportation Conformity

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas (maintenance areas are those areas that were in nonattainment that have been redesignated to attainment, under the FCCA). Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to

single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

California Clean Air Act

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CARB is the agency responsible for administering the CCAA. The CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards.

California Air Quality Standards

Although NAAQS are determined by the USEPA, states have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards. Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM_{10}) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. Although there is some variability among the health effects of the CAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. The existing state and federal primary standards for major pollutants are shown in Table 3.3-1.

Air quality standard setting in California commences with a critical review of all relevant peer reviewed scientific literature. The Office of Environmental Health Hazard Assessment (OEHHA) uses the review of health literature to develop a recommendation for the standard. The recommendation can be for no change, or can recommend a new standard. The review, including the OEHHA recommendation, is summarized in a document called the draft Initial Statement of Reasons (ISOR), which is released for comment by the public, and also for public peer review by the Air Quality Advisory Committee (AQAC). AQAC members are appointed by the President of the University of California for their expertise in the range of subjects covered in the ISOR, including health, exposure, air quality monitoring, atmospheric chemistry and physics, and effects on plants, trees, materials, and ecosystems. The Committee provides written comments on the draft ISOR. The ARB staff next revises the ISOR based on comments from AQAC and the public. The revised ISOR is then released for a 45-day public comment period prior to consideration by the Board at a regularly scheduled Board hearing.

In June of 2002, the CARB adopted revisions to the PM_{10} standard and established a new $PM_{2.5}$ annual standard. The new standards became effective in June 2003. Subsequently, staff reviewed the published scientific literature on ground-level ozone and nitrogen dioxide and the CARB adopted revisions to the standards for these two pollutants. Revised standards for ozone and

nitrogen dioxide went into effect on May 17, 2006 and March 20, 2008, respectively. These revisions reflect the most recent changes to the CAAQS.

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

CARB Air Quality and Land Use Handbook

The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities. The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate [I] 405 and I-710), the San Francisco Bay, and San Diego areas. The recommendations identified by the CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day" (CARB, 2005).

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for the CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before the CARB can designate a substance as a TAC. To date, the CARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, the CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. The CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, the CARB adopted a new public-transit bus-fleet rule and emission

standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Other recent milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

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.

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3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed General Plan will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

METHODOLOGY

The analysis presented below was completed to include a qualitative approach to address consistency with current air quality plan control measures. The qualitative analysis discusses the proposed General Plan's consistency with the Regulations of the Air Pollution Control District of Glenn County, and the proposed General Plan's VMT projections. The VMT analysis is described in greater detail in Chapter 3.14, Transportation and Circulation.

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: General Plan implementation would not conflict with or obstruct implementation of the applicable air quality plan, or result in a cumulatively considerable net increase of criteria pollutants (Significant and Unavoidable)

CEQA requires lead agencies to determine whether a project is consistent with all applicable air quality plans. Under the existing state and federal environmental regulatory structure, the federal government's Environmental Protection Agency is granted primary authority to establish health-based ambient air quality standards and specific technology and emission requirements for sources of air pollution, regulate selected sources of air pollution, and mandate that states comply with these requirements. The federal government has the authority to withhold transportation funds from the state if certain requirements are not met. Under the state of California regulatory structure, the state's California Air Resources Board maintains primary authority to regulate mobile sources of air pollution (e.g. establish vehicle and engine emission standards), and possess regulatory oversight authority over local and regional air pollution control agencies. Local and regional agencies maintain primary authority to regulate stationary sources of air pollution (e.g. permitting industry activities and regulating open burning).

As described previously, Glenn County has a State designation of Nonattainment for O_3, PM_{10}, and $PM_{2.5}$ and is either Unclassified or Attainment for all other criteria pollutants. The County has a national designation of Nonattainment for O_3 and $PM_{2.5}$. The County is designated either attainment or unclassified for the remaining national standards. The Glenn County APCD does not provide criteria pollutant thresholds for General Plans (such as the proposed Project). As such, there is no programmatic threshold of significance established for criteria pollutants for which to compare the proposed General Plan.

This EIR acknowledges that the proposed General Plan will allow new residential and non-residential growth, as described in detail in Chapter 2.0 (Project Description). This new growth will undoubtedly result in increases in the emissions of criteria pollutants, most notably from mobile-source and area-source emissions increases associated with increased growth and development in Willows. Additionally, the implementation of individual projects within the General Plan would have the potential to conflict with APCD requirements for criteria pollutants at the project-level.

The proposed General Plan includes policies and actions that are specifically aimed at improving air quality throughout the City and region. These policies and actions (provided below), limit impacts to air quality by reducing the number and length of vehicle trips, supporting green and sustainable building development, promoting the use of renewable energy, and encouraging the conservation of resources.

The policies and actions included throughout the proposed General Plan cover the full breadth of air quality issues. If approval of the proposed General Plan would cause the disruption, delay, or otherwise hinder the implementation of any air quality plan control measure, it may be inconsistent with the applicable air quality plans. The proposed General Plan does not cause the disruption,

delay, or otherwise hinder the implementation of any quality plan or control measure; therefore, it is consistent with the applicable air quality plans. All future development and infrastructure projects within the Planning Area would be subject to the General Plan goals, policies, and actions described above and include below, which were adopted to reduce emissions and air quality impacts. However, the proposed General Plan includes higher levels and rates of growth than those that would be facilitated under the existing General Plan. As such, total emissions levels associated with Project buildout would increase, which may indirectly hinder the efforts to reduce total emissions of criteria pollutants.

The Planning Area is surrounded by a variety of existing rural and agricultural uses, and includes two of the most heavily-travelled highway corridors in the region (I 5 and HW 99). The proposed General Plan includes polices and land uses that promote development patterns that emphasizes alternative transportation access and multi-modal connectivity throughout the Planning Area and surrounding areas.

Implementation of the proposed General Plan, which is consistent with all federal and state guidelines, and would be consistent with the applicable air quality plans, but would still lead to overall increases in emissions of criteria pollutants, given the total growth projected upon full buildout of the proposed General Plan.

Additionally, as described in Chapter 3.14 (Transportation and Circulation) of this DEIR, the proposed General Plan would result in increased per capita VMT and would also result in an increase in total VMT in comparison to the existing condition.

As described previously, the policies and actions included throughout the proposed General Plan cover the full breadth of air quality issues and promote air quality and vehicle trip reductions throughout the city. However, even with implementation of the General Plan policies and actions that would reduce criteria pollutant emissions, since the proposed General Plan would new development that would increase the overall, and per capita VMT, this impact is considered **significant and unavoidable**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

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.

CIRC 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.

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

CIRC 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.

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

CONVERSATION 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.

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).

CIRC-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.

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

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

CIRC-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.

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

CIRC-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.

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

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

CIRC-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.

CIRC-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 3.3-2: General Plan implementation would expose sensitive receptors to substantial pollutant concentrations (Less than Significant)

Local communities' risks from air pollutants may include exposure to TACs and $PM_{2.5}$ concentrations. TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health and $PM_{2.5}$ can cause a wide range of health effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular systems, and contributing to heart attacks and deaths). Common stationary source types of TAC and $PM_{2.5}$ emissions include gasoline stations, dry cleaners, and other sources, which are subject to Glenn County APCD requirements. The other, often more significant, common source type is on-road motor vehicles on freeways and roads such as trucks and cars, and off-road sources such as construction equipment, ships, and trains. Implementation of the proposed General Plan would have the potential of introducing new sources of TAC and $PM_{2.5}$ emissions within the City as well as siting new sensitive receptors, such as new homes in close proximity to existing sources of TAC and $PM_{2.5}$ emissions.

The proposed General Plan includes policies and actions that would minimize exposure to emissions, TAC, and $PM_{2.5}$ concentrations within the City. These policies and actions are included within various elements of the proposed General Plan. For example, policies and actions in the Land Use Element call for uses to be compatible with one another. Additionally, Action LU-7a required the city to review all development proposals, planning projects, and infrastructure projects to ensure that potential adverse environmental impacts, such as exposure to pollutants, including toxic air contaminants are reduced to the greatest extent feasible.

Individual projects will be required to determine air quality impacts from the construction and operation of their projects. In the event that future individual projects may result in exposure to pollutants including TACs by sensitive receptors, these future projects would be required to implement mitigation measures to reduce the impact to the greatest extent feasible. Therefore, compliance with the applicable policies and programs in the proposed General Plan as well applicable Glenn County APCD rules and regulations, would minimize the potential exposure of sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ within the City, and impacts at the program level would be **less than significant**.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

LU 7.1: Consider the effects of planning decisions on the overall health and well-being of the community and its residents, with specific consideration provided regarding disadvantaged communities.

LU 7.2: Consider environmental justice issues related to potential adverse health impacts associated with land use decisions, including methods to reduce exposure to hazardous materials, industrial activity, vehicle exhaust, other sources of pollution, and excessive noise on residents regardless of age, culture, gender, race, socioeconomic status, or geographic location.

LAND USE ELEMENT ACTIONS

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.

SAFETY ELEMENT POLICIES

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-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 3.3-3: General Plan implementation would not result in other emissions (such as those leading to odors adversely affecting a substantial number of people) (Less than Significant)

ODORS

Objectionable odors can be generated from certain types of commercial and/or industrial land uses. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. In general, residential land uses are not associated with odor generation, but they do serve as sensitive receptors. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public.

The proposed General Plan does not propose any specific development projects, but could result in additional development that may trigger the need for public and quasi-public facilities that could include expanded wastewater treatment facilities, and other potential odor sources. Similarly, lands designated for Industrial uses could include new or expanded uses that could result in odors, including chemical manufacturing, materials manufacturing, food and beverage processing, and other uses that may involve odors. Similarly, existing agricultural uses may include on-site processing or confined animal facilities that may result in odors. Individual projects that have the potential to generate significant objectionable odors would be required to undergo individual CEQA review.

The Glenn County APCD responds to complaints about odors, dust or chemical air pollutants emitted by industrial plants, refineries, neighborhood businesses, gas station nozzles, idling trucks, locomotives and buses. It also processes complaints about smoke from agricultural fires, controlled burns, non-cooking backyard fires and outdoor trash burning.

With respect to other emissions, future development under the proposed General Plan would be required to comply with APCD, SIP, and CARB, regulations, Title 24 energy efficiency standards, and the proposed General Plan policies and actions.

The proposed General Plan included policies and actions that support compatible land uses and does not propose any development that includes potential source of objectionable odors. Individual projects that have the potential to generate significant objectionable odors would be required to undergo individual project level environmental review. In addition, the General Plan policies and actions listed below would further minimize the potential for other emissions (such as odors) to adversely affect a substantial number of people. Therefore, implementation of the proposed General Plan would have a **less than significant** impact relative to this topic.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

LAND USE ELEMENT POLICIES

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.

CONVERSATION ELEMENT ACTIONS

COS-6a: Update the municipal code to incorporate standards for new development and infrastructure projects to incorporate Low Impact Development (LID) measures into site designs to reduce pollutants from non-point sources, incorporate "green" infrastructure, and encourage greater use of permeable paving surfaces.

LAND USE ELEMENT ACTIONS

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.

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.

This section describes biological resources in the Planning Area. This section provides a background discussion of the bioregions, regionally important habitat and wildlife, and special status species found in the vicinity of Willows. This section is organized with an environmental setting, regulatory setting, and impact analysis.

One comment on this environmental topic was received during the NOP comment period. The California Department of Fish and Wildlife (CDFW) provided comments about potential impacts to special status species and sensitive natural habitat. The letter provided general information on the types of impacts that could occur. These comments have been addressed throughout this EIR chapter. All comments are included in Appendix A of this DEIR.

KEY TERMS

The following key terms may be used throughout this section to describe biological resources and the framework that regulates them:

Hydric Soils. One of the three wetland identification parameters, according to the Federal definition of a wetland, hydric soils have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season. There are approximately 2,000 named soils in the United States that may occur in wetlands.

Hydrophytic Vegetation. Plant types that typically occur in wetland areas. Nearly 5,000 plant types in the United States may occur in wetlands. Plants are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS) and include such species as cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains.

Sensitive Natural Community. A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, State, or Federal agencies. The California Environmental Quality Act (CEQA) identifies the elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Wildlife (CDFW) tracks sensitive natural communities in the California Natural Diversity Database (CNDDB).

Special-Status Species. Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by Federal, State, or other agencies. Some of these species receive specific protection that is defined by Federal or State endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of State resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this report, following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term “special status” includes those species that are:

- Federally listed or proposed for listing under the Federal Endangered Species Act (50 CFR 17.11-17.12);

- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- State listed or proposed for listing under the California Endangered Species Act (14 CCR 670.5);
- Species listed by the USFWS or the CDFW as a species of concern (USFWS), rare (CDFW), or of special concern (CDFW);
- Fully protected animals, as defined by the State of California (California Fish and Game Code Section 3511, 4700, and 5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).

Waters of the U.S. The Federal government defines waters of the U.S. as "lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows" [33 C.F.R. §328.3(a)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the U.S. Army Corps of Engineers (USACE) as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” [33 C.F.R. §328.3(e)].

Wetlands. Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The Federal government defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Wetlands require wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to waters of the U.S.

3.4.1 ENVIRONMENTAL SETTING

The City of Willows is located in Glenn County within the northern Central Valley.

GEOMORPHIC PROVINCES/BIOREGION

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief and climate. These geomorphic provinces are remarkably diverse. They provide spectacular vistas and unique opportunities to learn about earth's geologic processes and history. The Planning Area is located in the northern portion of the Great Valley Geomorphic Province of California.

The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley Province

is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west.

The planning area is defined by the Sacramento Valley bioregion. Figure 3.4-1 illustrates the boundaries of the bioregions within Glenn County, which the planning area resides.

The Sacramento Valley Bioregion is a watershed of the Sierra Nevada that encompasses the northern end of the great Central Valley, stretching from Redding to the southeast corner of Sacramento County. The bioregion is generally flat, and is rich in agriculture. The climate is characterized by hot dry summers and cool wet winters. Oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands provide the major natural vegetation of the bioregion. This bioregion is the most prominent wintering area for waterfowl, attracting significant numbers of ducks and geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks. Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are some of the wildlife that are common in this bioregion.

The region is bordered by the coastal range foothills to the west, the snow-capped peaks of the Sierra Nevada to the east and the Tehachapi Range to the south. Two major rivers– the Sacramento and the American– carry water that originates in the Sierra Nevada south and west into the Delta. Other rivers in the northern part of the bioregion include the Cosumnes, lower Feather, Bear, and Yuba rivers.

Vegetation

Vegetation occurring within the Planning Area primarily consists of agricultural, ruderal, riparian, and landscaping vegetation. Because of urban nature of the developed areas within the city and the active agricultural uses in surrounding lands, there is limited undisturbed natural vegetation. Common plant species observed in the region include: wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*) alfalfa (*Medicago sativa*), Russian thistle (Salsola tragus), Italian thistle (*Carduus pycnocephalus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), coyote brush (*Baccharis pilularis*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), barley (*Hordeum* sp.), mustard (*Brassica niger*), and heliotrope (*Heliotropium curassavicum*).

Wildlife

Agricultural, riparian vegetation along the Sacramento River, and ruderal vegetation found in the Planning Area provides habitat for both common and special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus),* American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting.

Plant Communities

Agricultural and natural plant communities provide habitat for a variety of biological resources in the region. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under a Habitat Conservation Plan, Natural Community Conservation Plan, the California Environmental Quality Act (CEQA), the Fish and Game Code, or the Clean Water Act (CWA). Additionally, sensitive habitats are usually protected under specific policies from local agencies. Figure 3.4-2 illustrates the plant communities (land cover types) in the county.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

The California Wildlife Habitat Relationship (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

According to the California Wildlife Habitat Relationship System, there are 13 land cover types (wildlife habitat classification) found in Willows out of the 59 found in California. These include: Annual Grassland, Cropland, Deciduous Orchard, Dryland Grain Crops, Evergreen Orchard, Fresh Emergent Wetland, Irrigated Grain Crops, Irrigated Hayfield, Irrigated Row and Field Crops, Rice, Riverine, Urban, and vineyard.

Table 3.4-1 identifies the area by acreage for each cover type (classification) found in the City. Figure 3.4-2 illustrates the location of each cover type (classification) within proximity to Willows.

TABLE 3.4-1: COVER TYPES - CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

Cover Types	Acreage
Annual Grassland	4.87
Cropland	853.19
Deciduous Orchard	667.98
Dryland Grain Crops	727.02
Evergreen Orchard	206.94
Fresh Emergent Wetland	1.00
Irrigated Grain Crops	667.10
Irrigated Hayfield	192.23
Irrigated Row and Field Crops	1.11
Rice	509.80
Riverine	19.17
Urban	1,873
Vineyard	0.89
Total	5,724.90

SOURCE: SOURCE: CASIL GIS DATA, 2019

Natural and Agricultural Communities

Annual Grassland

Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost free season averages 250 to 300 days (18 to 21 fortnights). Annual precipitation is highest in northern California.

Fresh emergent wetland

Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions are highly variable and range from the extreme summer heat to winter temperatures well below freezing.

Other

There are a variety of other habitat types documented within Willows. These include aquatic habitats such as lacustrine (water) and riverine (rivers/creeks), and agricultural habitats (deciduous orchard, dryland grain crops, evergreen orchards, irrigated grain crops, irrigated hayfields, irrigated row and field crops, pasture, rice and vineyard). Additionally, Willows contains areas that are urban.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the background search was regional in scope and focused on the documented occurrences within a 9 Quad search area of Willows.

Special Status Plants

The search revealed documented occurrences of the 15 special status plant species within the 9 Quad search area of Willows. Table 3.4-2 provides a list of special-status plant species that are documented in the region, their habitat, and current protective status. Figure 3.4-3 illustrates the location of each documented occurrence.

TABLE 3.4-2: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN WILLOWS

Species	*Status (Federal/State/CNPS)*	*Habitat*
Atriplex persistens Vernal pool smallscale	--;--;1B	Vernal pools (alkaline). 10-115M.
Atriplex cordulata Heartscale	--;--;1B	Chenopod scrub, meadows, seeps, Sandy soils in the valley and foothill grasslands (Dry alkaline flats)
Atriplex depressa Brittlescale	--;--;1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools (Alkaline flats and clay soils)

Species	*Status (Federal/State/CNPS)*	*Habitat*
Atriplex joaquinian San Joaquin spearscale	--;--;1B	Chenopod scrub, alkali meadow, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub 1-250M.
Castilleja rubicundula ssp. *rubicundula* Pink creamsacs	--;--;1B	Chaparral, meadows, and seeps, valley and foothill grassland. Openings in chaparral or grasslands. Serpentine. 20-900M.
Cordylanthus palmatus palmate-bracted bird's-beak	FE;CE;1B	Chenopod scrub, valley and foothill grassland. Usually on Pescadero silty clay which is alkaline, with Distichilis, Frankenia, etc. ETC. 5-155M.
Euphorbia hooveri Hoover's spurge	FT;--;1B	Vernal Pools. 25-250M.
Hibiscus lasiocarpos Woolly rose-mallow	--;--;2	Marshes and swamps (freshwater). Moist, freshwater soaked river banks and low peat islands in sloughs; in California, known from the Delta Watershed. 0-150M.
Lepidium latipes var. heckardii Heckard's pepper-grass	--;--;1B	Valley and foothill grassland (alkaline flats). 2-200M.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	--;--;1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Vernal pools and swales, adobe or alkaline soils. 5-950M.
Neostapfia colusana Colusa grass	FT;CE;1B	Vernal pools. Usually in large, or deep vernal pool bottoms; adobe soils. 5-110M.
Orcuttia pilosa Hairy Orcutt grass	FE;CE;1B	Vernal pools. 46-200M.
Tropidocarpum capparideum Caper-fruited tropidocarpum	--;--;1B	Valley and foothill grassland (alkaline hills). 1-455M.
Tuctoria greenei Greene's tuctoria	FE;CR;1B	Vernal Pools. 30-1070M.
Wolffia brasiliensis Brazilian watermeal	--;--;2	Assorted shallow freshwater marshes and swamps. 20-100M.

SOURCE: DFG CNDDB 2019

ABBREVIATIONS:

FE FEDERAL ENDANGERED
FT FEDERAL THREATENED
CE CALIFORNIA ENDANGERED SPECIES
CT CALIFORNIA THREATENED
CR CALIFORNIA RARE (PROTECTED BY NATIVE PLANT PROTECTION ACT)
1B CNPS - RARE, THREATENED, OR ENDANGERED
2 CNPS - RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE
4 CNPS - PLANTS OF LIMITED DISTRIBUTION - A WATCH LIST

Special Status Animals

The search revealed documented occurrences of the 21 special status animal species within the 9 Quad search area of Willows, including: 6 invertebrates, 2 amphibians/reptiles, 10 birds, 1 fish, and 1 mammal. Table 3.4-3 provides a list of the special-status animal species that are documented, their habitat, and current protective status. Figure 3.4-3 illustrates the location of each documented occurrence.

TABLE 3.4-3: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN WILLOWS

Species	*Status (Federal/ State)*	*Habitat*
Invertebrates		
Branchinecta lynchi Vernal pool fairy shrimp	FT;--	Endemic to grasslands of the central valley, central coast mtns., and south coast mtns., in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
Branchinecta conservatio Conservancy fairy shrimp	FE;--	Inhabit rather large, cool-water vernal pools with moderately turbid water. The pools generally last until June.
Linderiella occidentalis California linderiella	--;--	Cold winter waters. Large, clear vernal pools. Typical in Central Valley floristic provinces below 300-m
Lepidurus packardi Vernal pool tadpole shrimp	FE;--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed & highly turbid.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT;--	Found on or close to its host plant, red or blue elderberry (Sambucus species), along rivers and streams. Females lay their eggs on the bark. Larvae hatch and burrow into the stems.
Bombus crotchii Crotch bumble bee	--;--	Occurs at relatively warm and dry sites, open grassland and scrub
Amphibians/Reptiles		
Actinemys marmorata western pond turtle	--;CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.
Thamnophis gigas Giant garter snake	FT;CT	Freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. Also has adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields.
Birds		
Agelaius tricolor tricolored blackbird	FSC;CSC	Highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.

Species	*Status (Federal/ State)*	*Habitat*
Athene cuniculari Burrowing owl	FSC; CSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Buteo swainsoni Swainson's hawk	FSC; CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranches. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT; CE	Nesting restricted to river bottoms and other mesic habitats where humidity is high.
Egretta thula snowy egret	FSC/ MBTA	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas; marshes, tidal flats, streams, wet meadows, and borders of lakes.
Haliaeetus leucocephalus bald eagle	FSC/FD; CE/CP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within one mile of water. Nests in large, old-growth, or dominant live three w/open branches especially ponderosa pine. Roosts communally in winter.
Nycticorax nycticorax black-crowned night heron	MBTA;--	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.
Pandion haliaetus osprey	MBTA; Raptor	Ocean shore, bays, fresh water lakes, and larger streams. Large nests built in tree tops within 15 miles of a good fish producing body of water.
Riparia riparia bank swallow	--;CT	Restricted to riparian areas with vertical cliffs and banks with fine-textured or sandy soils while breeding.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT;CE	Low to moderate elevation native forests lining the rivers and streams.
Fish		
Oncorhynchus mykiss irideus pop. 11 Steelhead – central valley DPS	FT;--	Primarily in cool, clear, fast-flowing waters. They typically thrive in tailwaters of large dams, but also can easily adapt to inhabiting lakes and reservoirs with ample food.
Mammals		
Erethizon dorastum North American porcupine	--;--	Most common in montane conifer, Douglas-fir, alpine dwarf-shrub, and wet meadow habitats. Less common in hardwood, hardwood-conifer, montane and valley-foothill riparian, aspen, pinyon-juniper, low sage, sagebrush, and bitterbrush.

SOURCE: DFG CNDDB 2019

ABBREVIATIONS:

FE FEDERAL ENDANGERED

FT	*FEDERAL THREATENED*
FC	*FEDERAL CANDIDATE*
FSC	*FEDERAL SPECIES OF CONCERN*
FD	*FEDERAL DELISTED*
MBTA	*PROTECTED BY MIGRATORY BIRD TREATY ACT*
CE	*CALIFORNIA ENDANGERED SPECIES*
CT	*CALIFORNIA THREATENED*
CP	*CALIFORNIA FULLY PROTECTED UNDER §3511, 4700, 5050 AND 5515 FG CODE*
CSC	*CDFG SPECIES OF SPECIAL CONCERN*

Sensitive Natural Communities

The California Department of Fish and Wildlife (CDFW) considers sensitive natural communities to have significant biotic value, with species of plants and animals unique to each community. The CNDDB search revealed documented occurrences of 4 sensitive natural communities within Willows and a brief description follows. This includes: Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great valley Mixed Riparian Forest, and Great Valley Willows Scrub.

All of these community types were once more widely distributed throughout California, but have been modified or destroyed by grazing, cultivation, and urban development. Since the remaining examples of these sensitive natural communities are under continuing threat from future development, CDFW considers them "highest inventory priorities" for future conservation. There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the State and nation including the CDFW, the USFWS, the USACE, and the National Marine Fisheries Service (NMFS). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the Federal, State, and local regulations that are applicable to implementing the General Plan.

3.4.2 REGULATORY SETTING

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act, passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the United States Fish and Wildlife Service. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, posses, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Bald and Golden Eagle Protection Act

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

Clean Water Act – Section 404

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

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

The USACE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a Federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification, the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the State.

Department of Transportation Act - Section 4(f)

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was

amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

> *It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of a historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

Rivers and Harbors Act of 1899

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. The Act requires authorization from the USACE for any excavation or deposition of materials into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

STATE

Fish and Game Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the State. The intent of the law was to preserve, protect, and enhance

endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds

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

Fish and Game Code §1601-1603 – Streambed Alteration

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

Public Resources Code § 21000 - California Environmental Quality Act

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

Species that may be considered for review are included on a list of “Species of Special Concern,” developed by the CDFW. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

Public Resources Code § 21083.4 - Oak Woodlands Conservation

In 2004, the California legislature enacted SB 1334, which added oak woodland conservation regulations to the Public Resources Code. This new law requires a county to determine whether a

project, within its jurisdiction, may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county must require oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. Such mitigation alternatives include: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; contribution of funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; and/or other mitigation measures developed by the county.

California Oak Woodland Conservation Act

The California Legislature passed Assembly Bill 242, known as the California Oak Woodland Conservation Act, in 2001 as a result of widespread changes in land use patterns across the landscape that were fragmenting oak woodland character over extensive areas. The Act created the California Oak Woodland Conservation Program within the Wildlife Conservation Board. The legislation provides funding and incentives to ensure the future viability of California's oak woodland resources by maintaining large scale land holdings or smaller multiple holdings that are not divided into fragmented, nonfunctioning biological units. The Act acknowledged that the conservation of oak woodlands enhances the natural scenic beauty for residents and visitors, increases real property values, promotes ecological balance, provides habitat for over 300 wildlife species, moderates temperature extremes, reduces soil erosion, sustains water quality, and aids with nutrient cycling, all of which affect and improve the health, safety, and general welfare of the residents of the State.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and Federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional, multi-species planning before the special measures of the CESA become necessary.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate state water quality and protect beneficial uses.

Water Quality Control Plan for the Sacramento-San Joaquin River Basins

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the CVRWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and SJR basins, including the Delta.

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 of the SJR include groundwater recharge and fresh water replenishment.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

City of Willows Municipal Code

Chapter 16.05 - Environmental Review

The City of Willows Municipal code Chapter 16.05 contains Environmental Review requirements. This Chapter states the all projects within the city which may have a significant effect on the environment shall be reviewed and evaluated by the environmental review commission.

Chapter 12.30 - Trees

Chapter 12.30 (Trees) of the City of Willows Municipal Code (Code) is to establish policies, regulations, and standards to protect and to preserve existing trees and plantings. Chapter 12.30 is part of a comprehensive plan developed in the best interest of the community to regulate the protection of trees and to avoid damage to trees from development projects.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

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

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

IMPACTS AND MITIGATION

Impact 3.4-1: General Plan implementation could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Less than Significant)

Approval of the General Plan would not directly approve or entitle any development or infrastructure projects. However, implementation of the General Plan and Land Use Map would allow and facilitate future development in Willows, which could result in adverse impacts to special-status plant and wildlife species, as well as sensitive natural habitat or wildlife movement corridors.

SPECIAL STATUS PLANT SPECIES

The CNDDB search revealed documented occurrences of 15 special status plant species within the 9-quad search area. Table 3.4-2 provides a list of special-status plant species that are documented within a 9-quad search area of Willows, and current protective status. Figure 3.4-3 illustrates the special status species located within the 9-quad search area.

Subsequent development under the proposed General Plan could result in the direct loss of habitat areas associated with these special status plant species, since suitable habitat for these species does occur in the region. Additionally, indirect impacts to special status plant species could occur with implementation of the General Plan. Indirect impacts could include habitat degradation as a result of impacts to water quality.

Special status plant species receive protection from various Federal and State laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of the plant species without a special permit. Additionally, the proposed General Plan includes numerous policies and actions intended to reduce or avoid impacts to special status plant species. These policies and actions are listed below.

SPECIAL STATUS ANIMAL SPECIES

The search revealed documented occurrences of the 21 special status animal species within the 9 Quad search area of Willows, including: 6 invertebrates, 2 amphibians/reptiles, 10 birds, 1 fish, and 1 mammal. Figures 3.4-3 illustrate the special status species located within the 9-quad region of the Planning Area. 7 species are located within one mile of Willows. Table 3.4-3 provides a list of the special-status animal species that are documented within the 9-quad search area, and current protective status. Figure 3.4-3 illustrates the special status species located within the 9-quad search area.

While most new development in Willows that would occur under the proposed General Plan would occur in areas that have been previously developed, subsequent development under the proposed General Plan could result in the direct loss of habitat areas associated with these special status animal species, since suitable habitat for these species does occur in the region, and may occur on future development project sites within Willows. Additionally, indirect impacts to special status animal species could occur with implementation of the General Plan. Indirect impacts could include habitat degradation as a result of impacts to water quality, increased human presence, and the loss of foraging habitat.

Special status animal species receive protection from various Federal and State laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of a species or direct impact to foraging and breeding habitat without a special permit. Additionally, the proposed General Plan includes numerous policies and actions intended to reduce or avoid impacts to special status animal species. These policies and actions are listed below.

CONCLUSION

Construction and maintenance activities associated with future development projects under the proposed General Plan could result in the direct and indirect loss or indirect disturbance of special status plant or animal species or their habitats that are known to occur, or have potential to occur, in the region. Impacts to special status species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Impacts on special status species associated with individual subsequent projects could include:

- increased mortality caused by higher numbers of automobiles in new areas of development;
- direct mortality from the collapse of underground burrows, resulting from soil compaction;
- direct mortality resulting from the movement of equipment and vehicles through construction areas;
- direct mortality resulting from removal of trees with active nests;
- direct mortality or loss of suitable habitat resulting from the trimming or removal of obligate host plants;
- direct mortality resulting from fill of wetlands features;
- loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- loss of suitable habitat for vernal pool invertebrates resulting from the destruction or degradation of vernal pools or seasonal wetlands;
- abandoned eggs or young and subsequent nest failure for special status nesting birds, including raptors, and other non-special status migratory birds resulting from construction-related noises;
- loss or disturbance of rookeries and other colonial nests;
- loss of suitable foraging habitat for special status raptor species;
- loss of migration corridors resulting from the construction of permanent structures or features; and
- impacts to fisheries/species associated with waterways.

However, implementation of the policies and actions listed below would assist in minimizing the impact to a less than significant level. Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of special status plants and animals, including habitat. The City of Willows has prepared the General Plan to include numerous policies and actions intended to protect special status plants and animals, including habitat, from adverse effects associated with future development and improvement projects.

While future development has the potential to result in impacts to protected special status plants and animals, including habitat, the implementation of the policies and action listed below, as well as Federal and State regulations, would result in a **less than significant** impact to special status plants and animals, including habitat.

GENERAL PLAN MINIMIZATION MEASURES

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 3.1: Preserve existing native trees and vegetation where possible and integrate regionally native trees and plant species into development and infrastructure projects where appropriate.

COS 3.2: As feasible utilize locally-sourced native and drought-tolerant plants and trees for landscaping on public projects consistent with the City's "Master Street Tree List", if feasible. Strongly encourage the use of native drought tolerant trees for landscaping on private projects.

COS 3.3: Avoid removal of large, mature trees that provide wildlife habitat, visual screening, or contribute to the visual quality of the environment through appropriate project design and building siting. If full avoidance is not possible, prioritize planting of replacement trees on-site over off-site locations. Replacement trees for high-quality mature trees should generally be of like kind, and provide for comparable habitat functionality, where appropriate site conditions exist.

COS 3.4: Facilitate the preservation of existing trees, the planting of additional street trees, and the replanting of trees lost through disease, new construction or by other means.

COS 3.5: Strongly discourage the removal of healthy trees on public and private property.

COS 6.1: Preserve and enhance biological communities that contribute to the City's and the region's biodiversity including, but not limited to, grasslands, freshwater marshes, wetlands, vernal pools, riparian areas, aquatic habitat, oak woodlands, and agricultural lands.

COS 6.2: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.

COS 6.3: Conserve existing native vegetation where possible and integrate regionally native plant species into development and infrastructure projects where appropriate.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-3a: Update Tree Protection Regulations (Municipal Code Chapter 12.30) to:

- *Provide more detailed tree replacement criteria to address the aesthetic loss, and habitat value of the tree being removed; and*
- *Consider adding additional tree species to the master tree list (particularly native species).*

COS-3b: Seek grant funding ("greening" grants) to help offset the cost of landscape improvements along special corridors and public rights-of-way.

COS-3c: Make available a list of plants and trees native to the region that are suitable for use in landscaping, consistent with the requirements of California's Water Efficient Landscape Ordinance (WELO). The plant and tree species should be drought tolerant, and consideration should be given to the suitability of the plant and tree species for use as habitat to native animals, birds, and insects.

COS-3d: Allocate sufficient funds in the annual budget to maintain the City's trees and to replace trees that are diseased or dying.

COS-6a Update the municipal code to incorporate standards for new development and infrastructure projects to incorporate Low Impact Development (LID) measures into site designs to reduce

pollutants from non-point sources, incorporate "green" infrastructure, and encourage greater use of permeable paving surfaces.

COS-6b: Require development projects which have the potential to result in impacts to biological resources to submit a biological resources evaluation which determines whether significant adverse impacts will occur. Evaluations shall be carried out consistent with applicable state and federal guidelines. Projects shall be designed to avoid or reduce impacts to the maximum extent feasible.

COS-6c: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the project shall include appropriate mitigation measures identified by a qualified biologist, which may include, but are not limited to the following:

- *Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;*
- *Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and*
- *Employees working on the project site shall be trained by a qualified biologist to identify and avoid protected species and habitat*

Impact 3.4-2: General Plan implementation could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Less than Significant)

The CDFW considers sensitive natural communities to have significant biotic value, with species of plants and animals unique to each community. The CNDDB search revealed documented occurrences of four sensitive natural communities within Willows and a brief description follows. This includes: Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great valley Mixed Riparian Forest, and Great Valley Willows Scrub. All four of these community types were once more widely distributed throughout California, but have been modified or destroyed by grazing, cultivation, and urban development. Since the remaining examples of these sensitive natural communities are under continuing threat from future development, CDFW considers them "highest inventory priorities" for future conservation.

While not always documented as a sensitive natural community in the CNDDB, streams, rivers, wet meadows, and vernal pools are of high concern because they provide unique aquatic habitat for many endemic species, including special status plants, birds, invertebrates, and amphibians. The City of Willows contains limited aquatic habitats that qualify as sensitive habitat. The main aquatic resource found in the Planning Area is the Glenn-Colusa Canal. Additionally, as shown on Figure 3.4-2, no Wildlife Habitat Relationship Type for land within the City limits is designated Riparian.

The proposed project is a planning document that does not itself approve any specific physical changes to the to the environment, adoption of the proposed project would not directly impact the

environment. However, the project could have an indirect change on the physical environment through subsequently approved projects that are consistent with the buildout that is contemplated in the General Plan. The implementation of an individual project would require a detailed and site-specific review of the site to determine the presence or absence of riparian habitat or natural sensitive communities. If riparian habitat or natural sensitive communities are present and disturbance is required, Federal and State laws require measures to reduce, avoid, or compensate for impacts to these resources. The requirements of these Federal and State laws are implemented through the permit process.

This potential impact would be minimized through the implementation of the policies and actions listed below. Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of sensitive natural communities, including riparian habitat. The City of Willows has prepared the General Plan to include numerous policies and actions intended to protect sensitive natural communities, including riparian habitat, from adverse effects associated with future development and improvement projects. While future development has the potential to result in impacts to protected habitats, the implementation of the General Plan policies and action listed below, as well as Federal and State regulations, would result in a **less than significant** impact.

GENERAL PLAN MINIMIZATION MEASURES

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 6.1: Preserve and enhance biological communities that contribute to the City's and the region's biodiversity including, but not limited to, grasslands, freshwater marshes, wetlands, vernal pools, riparian areas, aquatic habitat, oak woodlands, and agricultural lands.

COS 6.2: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.

COS 6.3: Conserve existing native vegetation where possible and integrate regionally native plant species into development and infrastructure projects where appropriate.

SAFETY ELEMENT POLICIES

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-6a: Update the municipal code to incorporate standards for new development and infrastructure projects to incorporate Low Impact Development (LID) measures into site designs to reduce pollutants from non-point sources, incorporate "green" infrastructure, and encourage greater use of permeable paving surfaces.

COS-6b: Require development projects which have the potential to result in impacts to biological resources to submit a biological resources evaluation which determines whether significant adverse impacts will occur. Evaluations shall be carried out consistent with applicable state and federal guidelines. Projects shall be designed to avoid or reduce impacts to the maximum extent feasible.

COS-6c: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the project shall include appropriate mitigation measures identified by a qualified biologist, which may include, but are not limited to the following:

- *Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;*
- *Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and*
- *Employees working on the project site shall be trained by a qualified biologist to identify and avoid protected species and habitat*

Impact 3.4-3: General Plan implementation could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than Significant)

Streams, rivers, wet meadows, and vernal pools (wetlands and jurisdictional waters) are of high concern because they provide unique aquatic habitat (perennial and ephemeral) for many endemic species, including special status plants, birds, invertebrates, and amphibians. These aquatic habitats oftentimes qualify as protected wetlands or jurisdictional waters and are protected from disturbance through the CWA.

Willows contains several aquatic habitats that qualify as Federally protected wetlands and jurisdictional waters such as lacustrine (water) and riverine (rivers/creeks). As noted in Impact 3.4-2, the main aquatic resource found in the Planning Area is the Glenn-Colusa Canal. As shown on Figure 3.4-2, no wetlands are found in the Planning Area. Additionally, the majority of land adjacent to waterways within the City limits is designated Urban while the majority land adjacent to waterways outside of the City limits but within the SOI boundary is designated to Urban, Annual Grassland, Cropland, Dryland Grain Crops, and Irrigated Hayfield.

Section 404 of the CWA requires any project that involves disturbance to a wetland or water of the U.S. to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Although subsequent projects may disturb protected wetlands and/or jurisdictional waters, the regulatory process that is established through Section 404 of the CWA ensures that there is "no net loss" of wetlands or jurisdictional waters. If, through the design process, it is determined that a future development project cannot avoid a wetland or jurisdictional water, then the USACE would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

Construction activities associated with individual future projects could result in the disturbance or loss of waters of the United States. This includes perennial and intermittent drainages; unnamed drainages; vernal pools; freshwater marshes; and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities.

The proposed project is a planning document that does not itself approve any specific physical changes to the to the environment, adoption of the proposed project would not directly impact the environment. However, the project could have an indirect change on the physical environment through subsequently approved projects that are consistent with the buildout that is contemplated in the General Plan. The implementation of an individual project would require a detailed and site-specific review of the site to determine the presence or absence of water features. If water features are present and disturbance is required, Federal and State laws require measures to reduce, avoid, or compensate for impacts to these resources. The requirements of these Federal and State laws are implemented through the permit process.

Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of sensitive natural communities, including protected wetlands. The City of Willows has prepared the General Plan to include numerous policies and actions intended to protect wetlands and waters of the U.S. from adverse effects associated with future development and improvement projects. While future development has the potential to result in impacts to protected water features, the implementation of the General Plan policies and actions listed below, as well as Federal and State regulations, would result in a **less than significant** impact.

GENERAL PLAN POLICIES AND ACTIONS MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 6.1: Preserve and enhance biological communities that contribute to the City's and the region's biodiversity including, but not limited to, grasslands, freshwater marshes, wetlands, vernal pools, riparian areas, aquatic habitat, oak woodlands, and agricultural lands.

COS 6.2: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.

COS 6.3: Conserve existing native vegetation where possible and integrate regionally native plant species into development and infrastructure projects where appropriate.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-6a: Update the municipal code to incorporate standards for new development and infrastructure projects to incorporate Low Impact Development (LID) measures into site designs to reduce pollutants from non-point sources, incorporate "green" infrastructure, and encourage greater use of permeable paving surfaces.

COS-6b: Require development projects which have the potential to result in impacts to biological resources to submit a biological resources evaluation which determines whether significant adverse impacts will occur. Evaluations shall be carried out consistent with applicable state and federal guidelines. Projects shall be designed to avoid or reduce impacts to the maximum extent feasible.

COS-6c: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the project shall include appropriate mitigation measures identified by a qualified biologist, which may include, but are not limited to the following:

- *Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;*
- *Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and*
- *Employees working on the project site shall be trained by a qualified biologist to identify and avoid protected species and habitat*

Impact 3.4-4: General Plan implementation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (i.e., linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). Wildlife habitat corridors maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation or removal. The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question.

Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species everyday survival. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and use corridors for a greater length of time.

Willows contains one main aquatic habitat that may be used for movement of wildlife. As noted in Impact 3.4-2, the main aquatic resource found in the Planning Area is the Glenn-Colusa Canal. The areas of land next to waterways within the Willows City Limits is designated for urban uses by the

proposed Land Use Map and are generally developed with urban uses currently. Therefore, while flowing through City Limits, the creeks do not function as important movement corridor for native wildlife.

Because the proposed project is a planning document and thus, no physical changes will occur to the environment, adoption of the proposed project would not directly impact the environment. There is a reasonable chance that movement corridors could be impacted throughout the buildout of subsequent individual projects. The implementation of an individual project would require a detailed and site-specific review of the site to determine the presence or absence of movement corridors on a given project site. If movement corridors are present and disturbance is required, Federal and State laws require measures to reduce, avoid, or compensate for impacts to these resources. The requirements of these Federal and State laws are implemented through the permit process.

Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of movement corridors. The City of Willows has prepared the General Plan to include three policies and one action intended to protect movement corridors from adverse effects associated with future development and improvement projects. While future development has the potential to result in impacts to protected movement corridors, the implementation of the General Plan policies and action listed below, as well as Federal and State regulations, would result in a **less than significant** impact.

GENERAL PLAN POLICIES AND ACTIONS MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 6.1: Preserve and enhance biological communities that contribute to the City's and the region's biodiversity including, but not limited to, grasslands, freshwater marshes, wetlands, vernal pools, riparian areas, aquatic habitat, oak woodlands, and agricultural lands.

COS 6.2: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory, or special-status species and that can be managed with minimal interference with nearby urban land uses.

COS 6.3: Conserve existing native vegetation where possible and integrate regionally native plant species into development and infrastructure projects where appropriate.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-6a: Update the municipal code to incorporate standards for new development and infrastructure projects to incorporate Low Impact Development (LID) measures into site designs to reduce pollutants from non-point sources, incorporate "green" infrastructure, and encourage greater use of permeable paving surfaces.

COS-6b: Require development projects which have the potential to result in impacts to biological resources to submit a biological resources evaluation which determines whether significant adverse impacts will occur. Evaluations shall be carried out consistent with applicable state and federal guidelines. Projects shall be designed to avoid or reduce impacts to the maximum extent feasible.

COS-6c: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the project shall include appropriate mitigation measures identified by a qualified biologist, which may include, but are not limited to the following:

- *Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;*
- *Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and*
- *Employees working on the project site shall be trained by a qualified biologist to identify and avoid protected species and habitat*

Impact 3.4-5: The General Plan would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

The proposed Project is a long-range planning document, in which local policies are established. The General Plan itself does not conflict with its own policies and has been drafted to be internally consistent (as required by state law). Subsequent development projects will be required to comply with the General Plan Update policies, as well as the Municipal Code. Implementation of the policies and implementation measures listed throughout this chapter would be consistent with already established ordinances. Specifically related to tree protections, General Plan Goal COS-3 calls for the conservation protection and enhance trees and native vegetation. Action COS-3a call upon the city to update tree protection regulations (Municipal Code Chapter 12.30) to provide a detailed tree replacement criteria to address the aesthetic loss, and habitat value of the tree being removed; and to consider adding additional tree species to the master tree list (particularly native species).

The City of Willows has a Tree Ordinance that regulates tree protection on public and private property. As stated previously the General Plan Update includes Policies and Implementation Actions that support tree preservation, consistent with the City's Tree Ordnance. The General Plan Update does not conflict with this ordinance.

The proposed General Plan is a policy document, in which local policies are established. This EIR presents the numerous policies of the General Plan. The General Plan itself does not conflict with its policies. Subsequent development projects will be required to comply with the General Plan policies, as well as the Municipal Code. This is a **less than significant i**mpact.

GENERAL PLAN POLICIES AND ACTIONS MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE ELEMENT POLICIES

COS 3.1: Preserve existing native trees and vegetation where possible and integrate regionally native trees and plant species into development and infrastructure projects where appropriate.

COS 3.2: As feasible utilize locally-sourced native and drought-tolerant plants and trees for landscaping on public projects consistent with the City's "Master Street Tree List", if feasible. Strongly encourage the use of native drought tolerant trees for landscaping on private projects.

COS 3.3: Avoid removal of large, mature trees that provide wildlife habitat, visual screening, or contribute to the visual quality of the environment through appropriate project design and building siting. If full avoidance is not possible, prioritize planting of replacement trees on-site over off-site locations. Replacement trees for high-quality mature trees should generally be of like kind, and provide for comparable habitat functionality, where appropriate site conditions exist.

COS 3.4: Facilitate the preservation of existing trees, the planting of additional street trees, and the replanting of trees lost through disease, new construction or by other means.

COS 3.5: Strongly discourage the removal of healthy trees on public and private property.

CONSERVATION AND OPEN SPACE ELEMENT ACTIONS

COS-3a Update Tree Protection Regulations (Municipal Code Chapter 12.30) to:

- *Provide more detailed tree replacement criteria to address the aesthetic loss, and habitat value of the tree being removed; and*
- *Consider adding additional tree species to the master tree list (particularly native species).*

COS-3b Seek grant funding ("greening" grants) to help offset the cost of landscape improvements along special corridors and public rights-of-way.

COS-3c Make available a list of plants and trees native to the region that are suitable for use in landscaping, consistent with the requirements of California's Water Efficient Landscape Ordinance (WELO). The plant and tree species should be drought tolerant, and consideration should be given to the suitability of the plant and tree species for use as habitat to native animals, birds, and insects.

COS-3d Allocate sufficient funds in the annual budget to maintain the City's trees and to replace trees that are diseased or dying.

Impact 3.4-6: General Plan implementation would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan (No Impact)

The City of Willows is currently not a permittee of the Habitat Conservation Plan or Natural Community Conservation Plan.

Given that there is no adopted Habitat Conservation Plan or Natural Community Conservation Plan within the Planning Area. Through implementation of this Action, the General Plan would have a **no impact** relative to this topic.

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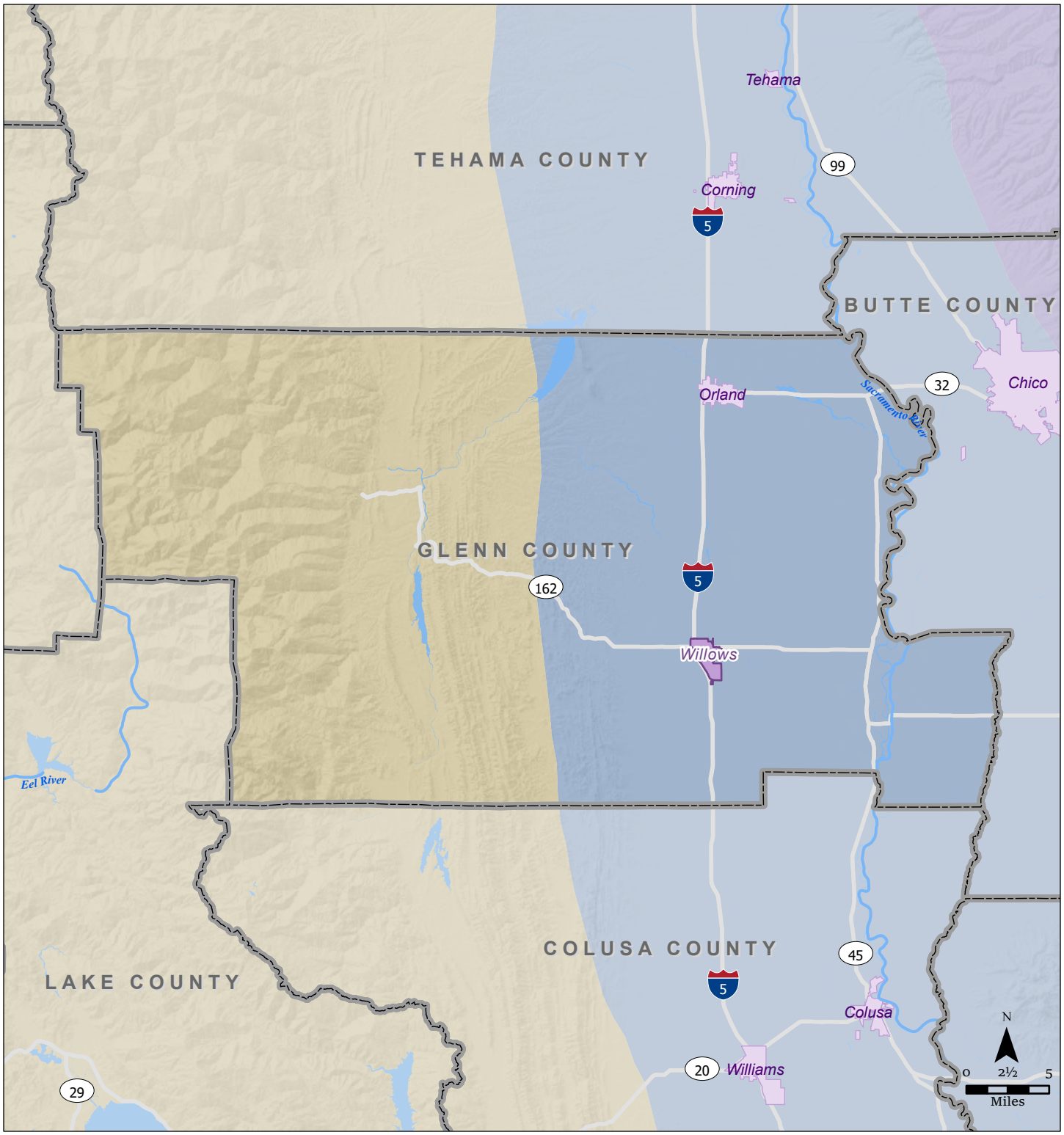

Sources: Conservation Biology Institute; Glenn County. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.4-1 BIOREGIONS

Legend

- Willows City Boundary
- Other Incorporated Area

Bioregions

- Klamath/North Coast
- Modoc
- Sacramento Valley

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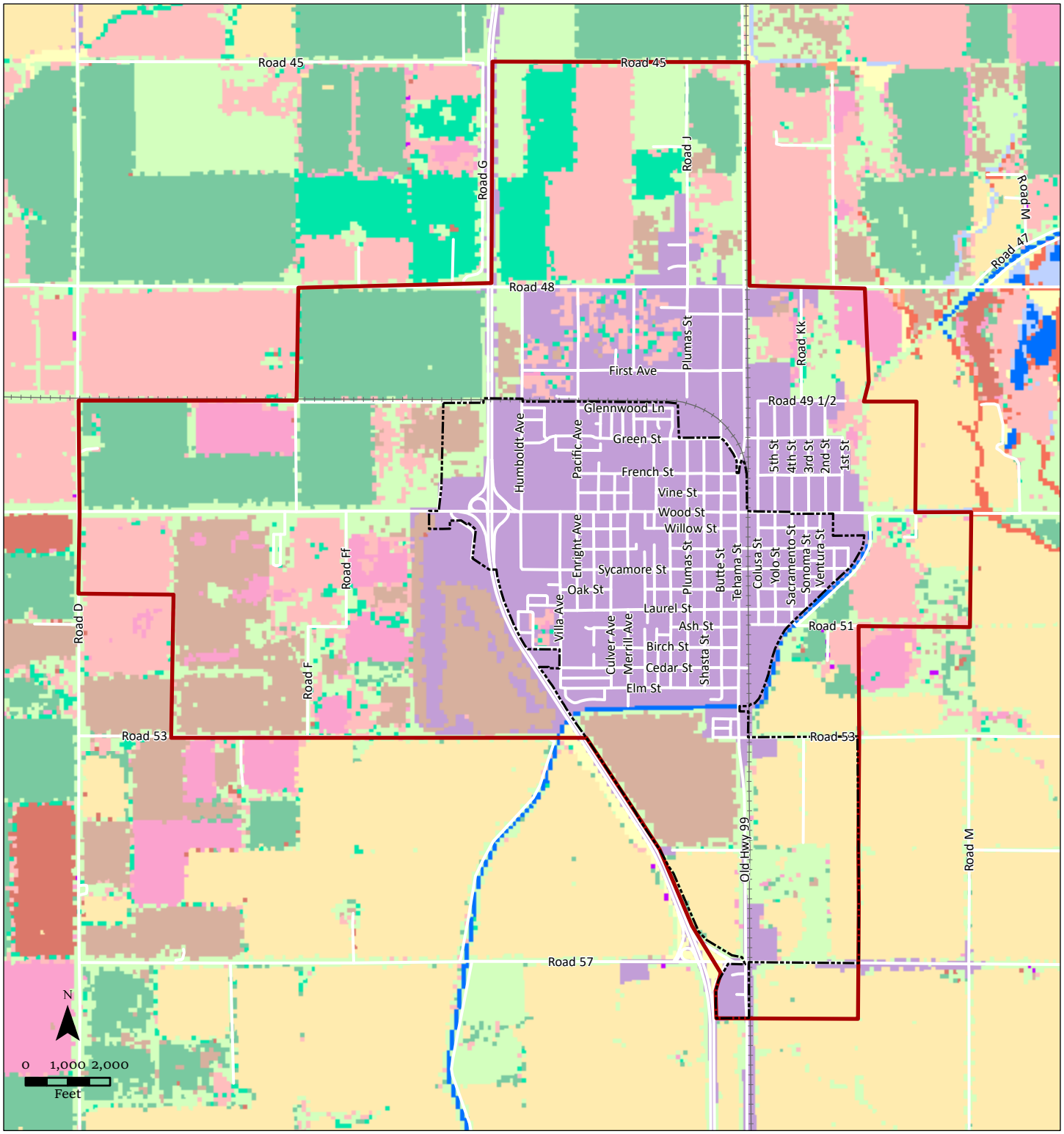

Sources: FRAP Vegetation (FVEG15_1); Glenn County 2018. Map date: July 4, 2022.

CITY OF WILLOWS

Legend

City of Willows

Willows Sphere of Influence

Land Cover Types

- Annual Grassland
- Cropland
- Deciduous Orchard
- Dryland Grain Crops
- Eucalyptus
- Evergreen Orchard
- Fresh Emergent Wetland
- Irrigated Grain Crops
- Irrigated Hayfield
- Irrigated Row and Field Crops
- Rice
- Riverine
- Urban
- Valley Foothill Riparian
- Vineyard

FIGURE 3.4-2 LAND COVER TYPES

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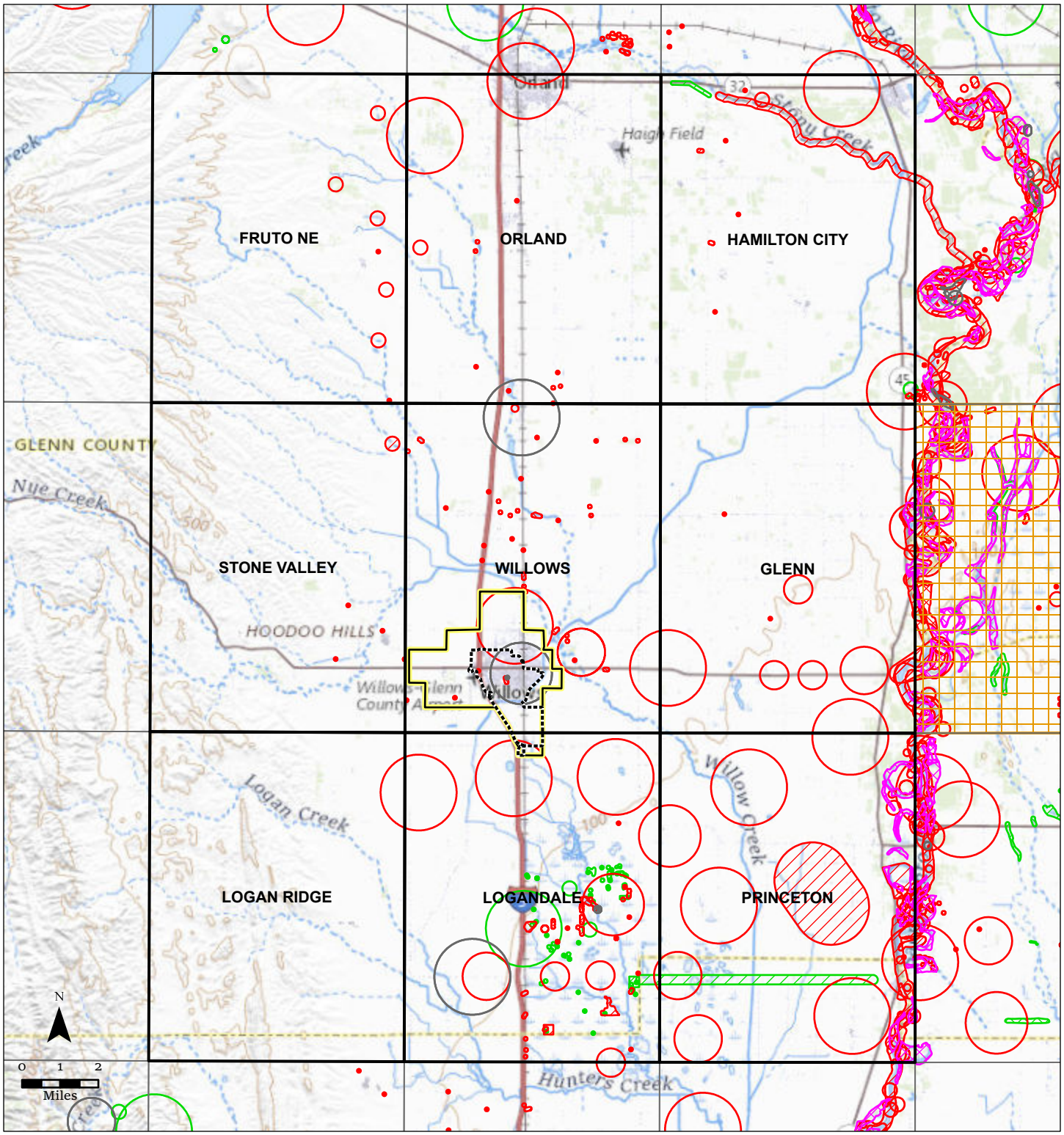

Sources: ArcGIS Online USGS Topo Map Service; CNDDB version 2/4/2021. Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.4-3 CALIFORNIA NATURAL DIVERSITY DATABASE 9-QUAD SEARCH

Legend

- City of Willows
- Willows Sphere of Influence

Special Status Species

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

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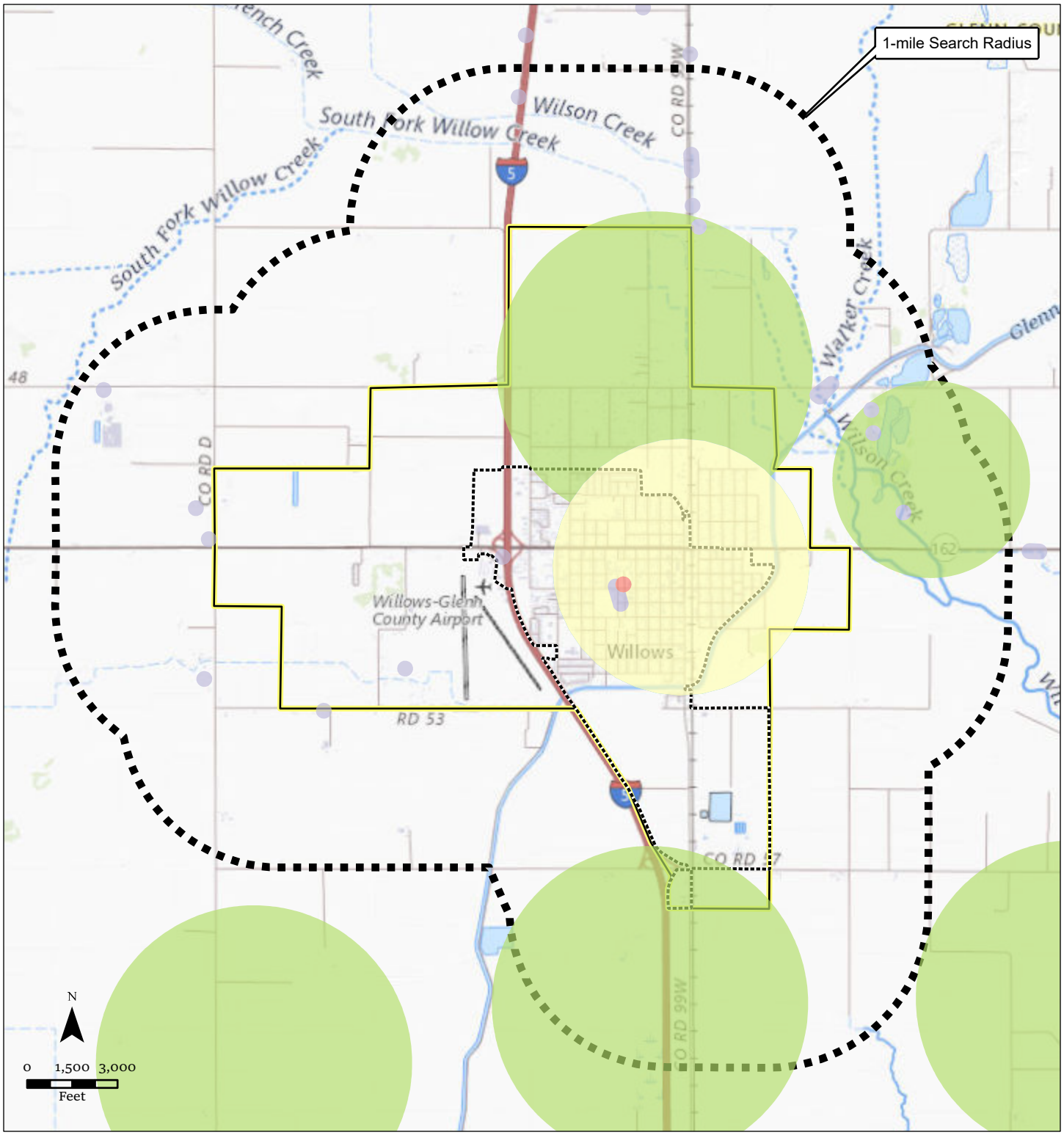

Sources: ArcGIS Online USGS Topo Map Service; CNDDB version 2/4/2021. Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: July 4, 2022.

CITY OF WILLOWS

Legend

- City of Willows
- Willows Sphere of Influence

Common Names

- Baker's navarretia
- San Joaquin spearscale
- Swainson's hawk
- black-crowned night heron
- brittlescale
- snowy egret
- tricolored blackbird

FIGURE 3.4-4 CALIFORNIA NATURAL DIVERSITY DATABASE INTERNAL 1-MILE SEARCH

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Cultural resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Tribal cultural resources include site feature, places, cultural landscapes, sacred places or objects, which is of cultural value to a Tribe. Preservation of the city's cultural heritage should be considered when planning for the future.

This section provides a background discussion of the prehistory, ethnology, historical period background, and cultural resources and tribal cultural resources found in Willows. This section is organized with an existing setting, regulatory setting, and impact analysis.

One comment was received during the NOP public review period relevant to cultural resources or tribal cultural resources. The Native American Heritage Commission (NAHC) provided a response letter providing information on relevant tribal consultation requirements. The letter did not provide any input specific to Willows or the proposed Project.

KEY TERMS

The following key terms are used throughout this section to describe cultural and tribal resources and the framework that regulates them:

Archaeology. The study of historic or prehistoric peoples and their cultures by analysis of their artifacts and monuments.

Ethnography. The study of contemporary human cultures.

Complex. A patterned grouping of similar artifact assemblages from two or more sites, presumed to represent an archaeological culture.

Midden. A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell fragments, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.

3.5.1 ENVIRONMENTAL SETTING

Cultural resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Preservation of the city's cultural heritage should be considered when planning for the future.

PREHISTORY

Glenn County has not had large scale archeological excavations that would have provided a clear picture into the prehistoric period. The closest such excavation occurred just south of the Glenn County line. Archeology tells us that by at least 6,000 years ago, about 4,000 B.C., Native Americans were living along the Sacramento River in Colusa County and likely Glenn County too. Ten to twelve feet below the modern surface was a "buried midden" dated to 4020 B.C. that was discovered and dated, but not further investigated (White 2003a, 2003b). Midden is the remains of plants and animals, like a compost pile, usually with bits of artifacts too, left by a group who generally call the place home. Village sites have midden, temporary camps normally don't.

After 2,500 B.C., archeologists do have a record of life at this village with various artifacts recovered including stone points designed to be used with a spear-thrower (atlatl), fishing related items, bone and stone tools, and shell ornaments (Figure 10.4 in Rosenthal et al. 2007:154). By this time, archeologists feel this village site was occupied year-round (White 2003a, 2003b). Colusa County, and no doubt Glenn County as well, looks to have had its first 'town" about 4,500 years ago.

At about 1,000 A.D., the bow and arrow were introduced into the area and new opportunities opened for the hunter. Fishing technology also continued to improve during this period, and, not surprisingly fish remains make up increasingly larger percentages of food remains found at river side villages from this period onward (Rosenthal et al. 2007:160). The collection of the local wild seed crop supplementing the diet of acorn, a staple since about 500 B.C., also increased during this time. Over time, the size of certain types of seeds collected became larger, leading some to suggest that the foundations of horticulture were beginning to take root in California's Central Valley (Rosenthal 2007:159).

Populations at the villages along the river continued to expand, and by the time of first written records, a village with three or four thousand residents was not uncommon, particularly at a good fishing spot where weirs could be constructed.

ETHNOLOGY

The Wintu are the northernmost dialectical groups of the Wintun, whose territory roughly incorporates the western side of the Sacramento Valley from the Carquinez Straits north to include most of the upper Sacramento River drainage, the McCloud River, and the lower reaches of the Pit River. The Wintun, a collective name, were subdivided into three sub-groups with the Southern, Central, and the Northern dialects known respectively as Patwin, Nomlaki, and Wintu. The area surrounding Willows has been identified as belonging to the River Nomlaki (Goldschmidt 1978:341).

Although economic subsistence was heavily weighted toward the acorn, the staple of the diet, the rich riverine resources of the Sacramento River supplied a large variety of foodstuffs. Hunting of game and small mammals augmented the diet with protein. Seasonal procurement of vegetable foods and the hunting of game occurred throughout the territory held by villages.

Villages were usually situated along rivers and streams or close to springs where reliable water supplies allowed a semi-permanent occupation. Major villages were located along the riverbanks, with locations oriented to higher spots on the natural levees. Smaller villages tended to be along the tributary streams and near springs. Cultural resources surveys in the region have demonstrated that there was very heavy use of tributary streams and other areas at a distance from the main river, while early ethnographies had emphasized the concentration of population along the Sacramento.

HISTORIC PERIOD BACKGROUND

Glenn County, named for Dr. Hugh Glenn, was organized in 1891, from the northern half of Colusa County. The earlier history of the County is that of Colusa County settlement.

In the early 1840s, Maria Josefa Soto, later the wife of Dr. James Stokes of Monterey, received the Capay Land Grant from the Mexican government. In 1846, a man named Bryant built the first house on the land, and in 1848, after Marshall's gold discovery in Coloma and the resulting gold rush, purchased the 44,388-acre grant stretching along the west side of the Sacramento River. The land soon attracted more settlers including U.P. Monroe, Martin Reager, and John McIntosh (Rodgers 1891:81; Kyle 2002).

The old River Road ran along the west side of the Sacramento River between Colusa through present day Glenn County and Shasta. With up to 50 freight wagons a day leaving Colusa for the northern mines, a series of hospitality houses, aptly named Four-Mile house, or Fourteen-Mile house, depending on their distance north were set up to feed and settler both two- and four-legged travelers (Kyle 2002:48).

The stagecoach lines following the Old River Road route along the Sacramento River were expanded during the summer of 1872 to include new tri-weekly stagecoach runs from Colusa north to Newville and west towards Wilbur and Bartlett Springs (Rogers 1891:128). Competition between competing stage coach companies on the existing run between Colusa and Marysville had become so fierce by November of that year that the fare was only 25 cents and, "…no effort of horse-flesh spared by competing lines in endeavoring to arrive first at their home station" (Rogers 1891). By 1873, nine stage lines were operating out of Colusa (Rogers 1891).

At the base of the steep Coast Range, Elk Creek was established in the late 1860s as a trading center for the valleys drained by Stony Creek and its tributaries. The post office in the town opened in 1872, and the town became the stopping point for stages from Colusa to the southeast and Newville to the north. Elk Creek is the entrance to the Mendocino National Forest (Kyle 2002).

Monroe's Ranch, later Monroeville, became a popular stopping point along the Old River Road. The hotel also doubled as a courthouse built partially from the wreck of the steamer *California*, one of the first steamers to ascend the Sacramento River.

Colusa County had obvious advantages in terms of natural transportation routes. The Sacramento River was once a navigable waterway with steamships plying the river from the bay area up to Red Bluff. Water based transportation was the primary means of transporting goods cheaply when Colusa County was first settled in the early 1850s. Up until the early 1870s, steamships regularly ran as far north as Red Bluff, but then the railroad came, boats quit going higher up than Chico Landing, except during unusually high water or on special occasions.

1876 was a pivotal year for Colusa (later Glenn County) when the "Northern Railway," later Southern Pacific, tracks were completed, and the communities of Willows and Orland prospered. By 1926, the road paralleling the Southern Pacific railroad was officially designated at Highway 99W. Beginning at Sacramento at the 'I" Street Bridge, Highway 99W followed the west side of the river up to the valley to eventually meet and merge with the Highway 99E branch at Red Bluff. In the early 1960s, construction began on a new interstate highway system, Interstate 5, and when "I-5" was completed, Highway 99W was relegated to a frontage road.

In 1887, California passed the Wright Irrigation Act that authorized and regulated the formation of irrigation districts. Wasting no time, on November 22, 1887 the Central Irrigation District was formed, incorporating 156,500 acres (McComish and Lambert 1918). Upon formation of the district, its members, by a vote of five to one, approved the issuance of $750,000 in bonds for the construction of the necessary canals and irrigation works. Using $290,000 of these funds, the district hired construction crews who began working on the canal in October, 1889. The canal, as proposed, covered the lands from its source north of Hamilton City to about midway between Willows and Arbuckle, where its outlet or discharge would into Willow Creek. The original estimates also called for a main canal with a depth of sixty-five feet and a length of thirty miles, tapering to a depth of twenty feet for the remainder of the canal. Lateral canals and sub-canals were also included in this original estimate (McComish and Lambert 1918).

By 1918, farmers had organized the Glenn-Colusa Irrigation District that provided water from Hamilton City south to near Willows (Eubank 1948).

Hamilton City is the newest town in Glenn County and is considered the legitimate descendant of two pioneer towns —Monroeville, about five miles south, and St. John. St. John, two miles north of Monroeville, was founded in 1856 on the banks of Stony Creek. St. John had a general merchandise store, warehouses and barns, housing freighters headed to Shasta and Weaverville. St. John began to fade, as Monroeville had done when business shifted to St. John. Hamilton City was founded in 1905 as the site of a large sugar beet factory and named for the president of the sugar company (Kyle 2002).

Agriculture has always been the primary economic activity of Glenn County. Other industries include chromite, mined briefly in this area informally during World War I and more formally during World War II. The Black Diamond Mine and Gray Eagle Mine operated between 1942-44 until supplies were exhausted. The Beehive Bend gas fields were discovered in the 1930s, about five miles east of Willows, the largest in northern California. The wells are scattered over a large area (Kyle 2002).

CULTURAL RESOURCES IN WILLOWS GENERAL PLAN STUDY AREA

Archaeological Resources: According to files maintained by the Northwest Information Center (NWIC), no resources of this type have been recorded within the Planning Area. However, one resource has been recorded within the one-mile vicinity. Unrecorded prehistoric and/or historic archaeological resources may be located within the project area.

Historic Properties: According to files maintained by the Northwest Information Center (NWIC), three resources of this type have been recorded within or adjacent to the Planning Area. As shown in Table 3.5-1, the three recorded cultural resources consisting of Glenn-Colusa Canal, Willows Main Post Office, and Willows Wastewater Treatment Plant.

TABLE 3.5-1: RESOURCES LISTED WITH THE NORTHWEST INFORMATION CENTER FILE DIRECTORY

PROPERTY #	*ADDRESS*	*PERIOD/TYPE*	*NAME*
P-11-000605	From the intersection of State Routes 45 and 32, in the town of Hamilton City, travel one mile north on Canal Road to the south end of the recorded segment.	Historic Building	Glenn-Colusa Canal
P-11-000616	315 W. Sycamore Street, Willows	Historic Building	Willows Main Post Office
P-11-000748	County Road 99W, Willows	Historic Building	Willows Wastewater Treatment Plant

SOURCE: NORTHWEST INFORMATION CENTER (NWIC), CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM (CHRIS).

The Built Environment Resources Directory (BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists 30 properties within or adjacent to the proposed project area.

TABLE 3.5-2: BUILDINGS ON THE GLENN COUNTY HISTORIC PROPERTY DATA FILE DIRECTORY

PROPERTY #	*ADDRESS*	*YEAR BUILT*	*NAME*
69325	Not Listed	Not Listed	CCC Buildings and Structures, Sacramento NAT WILDL
132896	346 N Butte St	1910	Not Listed
132899	338 N Lassen St	1895	Leonora Marshall Neate Residence
79770	125 N Marshall St	1902	Not Listed
72396	339 N Murdock	1891	Not Listed
132895	414 N Plumas St	1938	E J Saal Residence
181568	255 N Tehama St	1974	Not Listed
144809	125 N Villa Ave	1950	Not Listed
132902	345 N Villa Ave	1932	Karl Mason Residence
Not Listed	445 S Butte St	1962	Willows Fire Station Building
155396	435 S Plumas St	1909	Not Listed
89059	255 S Sacramento St	1942	Not Listed
72225	406 S Shasta St	1926	Not Listed
79771	503 S Shasta St	1932	Not Listed
50146	Sr 162	1925	MP. 11-09
50147	315 W Sycamore St	Not Listed	Us Post Office--Willows Main
5149	526 W Sycamore St	1894	Glenn County Courthouse
184425	915 W Walnut St	1946	Not Listed
144804	426 W Willow St	1928	Not Listed
132889	1129 W Wood St	1950	St Monica's Parish Rectory
132897	242 W Wood St	1910	Not Listed
132898	354 W Wood St	1945	Not Listed
132894	443 W Wood St	1880	J R Garnett Residence

PROPERTY #	ADDRESS	YEAR BUILT	NAME
132893	463 W Wood St	1910	Frank Moody Residence
132900	518 W Wood St	1950	Not Listed
132892	537 W Wood St	1913	Pirkey-Bird Residence
132891	611 W Wood St	1900	Milton French Residence
132901	820 W Wood St	1952	R.C. Robertson Residence
132890	907 W Wood St	1952	Not Listed
84904	336 Walnut St	1911	Willows Public Library; Carnegie Library; Willows

SOURCE: GLENN COUNTY HISTORIC PROPERTY DATA FILE DIRECTORY.

NATIVE AMERICAN CONSULTATION

Letters were sent to: the Colusi County Historical Society; The Native American Heritage Commission; Glenda Nelson, Chairperson, Estom Yumeka Maidu Tribe of the Enterprise Rancheria; Ronald Kirk, Chairperson, Grindstone Rancheria of Wintun-Wailaki; Jessica Lopez, Chairperson, KonKow Valley Band of Maidu; Dennis Ramirez, Chairperson, Mechoopda Indian Tribe; Guy Taylor, Mooretown Rancheria of Maidu Indians; Benjamin Clark, Chairperson, Mooretown Rancheria of Maidu Indians; and, Andrew Alejandre, Chairperson, Paskenta Band of Nomlaki Indians. None of the contacted entities responded with information related to tribal cultural resources in the Planning Area.

3.5.2 REGULATORY SETTING

FEDERAL REGULATIONS

National Historic Preservation Act

Most regulations at the Federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations specifically for Federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any Federal agency and which have the potential to affect cultural resources. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It

establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archaeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

STATE REGULATIONS

California Register of Historic Resources (CRHR)

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared pursuant to the California Environmental Quality Act (CEQA). Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on The National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

California Environmental Quality Act (CEQA)

CEQA requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. This determination applies to those resources which meet significance criteria qualifying them as “unique,” “important,” listed on the California Register of Historical Resources (CRHR), or eligible for listing on the CRHR. If the agency determines that a project may have a significant effect on a significant resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potential significant environmental effects resulting from projects. If avoidance is not feasible, an excavation program or some other form of mitigation must be developed to mitigate the impacts. In order to adequately address the level of potential impacts, and thereby design appropriate mitigation measures, the significance and nature of the cultural resources must be

determined. The following are steps typically taken to assess and mitigate potential impacts to cultural resources for the purposes of CEQA:

- identify cultural resources;
- evaluate the significance of the cultural resources found;
- evaluate the effects of the project on cultural resources; and
- develop and implement measures to mitigate the effects of the project on cultural resources that would be significantly affected.

In 2015, CEQA was amended to require lead agencies to determine whether projects may have a significant effect on tribal cultural resources. (Public Resources Code [PRC] § 21084.2). To qualify as a tribal cultural resource, the resource must be a site, feature, place, cultural landscape, sacred place, or object, which is of cultural value to a California Native American Tribe and is listed, or eligible for listing, on the national, state, or local register of historic resources. Lead agencies may also use their discretion to treat any notable resource as a tribal cultural resource. To determine whether a project may have an impact on a resource, the lead agency is required to consult with any California Native American tribe that requests consultation and is affiliated with the geographic area of a proposed project (PRC § 21080.3.1). CEQA requires that a lead agency consider the value of the cultural resource to the tribe and consider measures to mitigate any adverse impact.

California Public Resources Code

Section 5097 of the Public Resources Code specifies the procedures to be followed in the event of the unexpected discovery of historic, archaeological, and paleontological resources, including human remains, historic or prehistoric resources, paleontological resources on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the California Native American Heritage Commission (NAHC). Section 5097.5 of the Code states the following:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Senate Bill 18 (Burton, Chapter 905, Statutes 2004)

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 to the Government Code; also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments for how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a State commission with statutory powers to assure that Federal and State laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-Federally recognized tribes for repatriation.

Assembly Bill 52

Assembly Bill (AB) 52, approved in September 2014, creates a formal role for California Native American tribes by creating a formal consultation process and establishing that a substantial adverse change to a tribal cultural resource has a significant effect on the environment. Tribal cultural resources are defined as:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    A) Included or determined to be eligible for inclusion in the CRHR
    B) Included in a local register of historical resources as defined in PRC Section 5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1 (c). In applying the criteria set forth in PRC Section 5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria above is also a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. In addition, a historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a "non-unique archaeological resource" as defined in PRC Section 21083.2(h) may also be a tribal cultural resource if it conforms with above criteria.

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California

Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural or tribal resources if it will:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
- Disturb any human remains, including those interred outside of formal cemeteries?
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: General Plan implementation could cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to Section 15064.5 (Less than Significant)

A substantial adverse change in the significance of an historic resource is defined in Section 15064.5 (b)(1) of the CEQA Guidelines as the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. Known historic resource sites are located throughout the Planning Area and region, as shown in Tables 3.5-1 through 3.5-2, and there may be potential for additional undiscovered prehistoric sites to be located in various areas of the city as well.

As described previously, according to files maintained by the Northwest Information Center (NWIC), three historic property resources have been recorded within or adjacent to the Planning Area. As shown in Table 3.5-1. The Built Environment Resources Directory (BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists 30 properties within or adjacent to the Planning Area as shown on Table 3.5-2.

While the General Plan does not directly propose any adverse changes to any historic or archaeological resources, future development allowed under the General Plan could affect known historical or unknown historical and archaeological resources which have not yet been identified.

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

The General Plan includes policies and actions that would reduce impacts to cultural, historic, and archaeological resources, as well as policies and actions for the conservation of cultural, historic, and archaeological resources. Specifically, General Plan policies require development projects with a potential to impact archeological resources to be monitored by a relevant expert. In the event of a resource discovery, it is required that all ground disturbing activities and construction to be halted until a qualified expert is able to analyze the project site and determine appropriate mitigation. Additionally, the General Plan requires tribal consultation with tribes that may be impacted by proposed development, in accordance with state, local, and tribal intergovernmental consultation requirements. Adoption and implementation of the policies and actions listed below, combined with future CEQA review requirements, would result in a **less than significant** to historic and archaeological resources**.**

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND OPEN SPACE POLICIES

COS 4.1: Recognize significant historic resources and use these resources to promote a sense of place and history in Willows. Continue to protect and enhance these areas through the implementation of Historic Downtown & Wood Street design guidelines, the Downtown Revitalization Plan, and project level site review.

COS 4.2: Evaluate the condition of historical buildings, the costs of rehabilitation, and the feasibility of preservation or conservation alternatives when considering the demolition of historic structures; as feasible, encourage the adaptive re-use of the historic structure.

COS 4.3: Use the preservation standards outlined in the City's Design Guidelines for Historic Buildings and the current Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings.

COS 4.4: Provide readily available public information on the Mills Act and encourage people to renovate historic homes in disrepair using property tax savings available through the Mills Act.

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.

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.

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.

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

COS-4a: Developing a citywide Historic Resources Inventory with new sites or buildings that are of local, State or federal significance.

COS-4b: Create incentives to promote historic preservation, maintenance and adaptive reuse by property owners, such as, expedited permits, lower permit fees, and Mills Act Contracts for tax benefits.

COS-4c: Continue to implement the City's Historic Downtown & Wood Street Design Guidelines and periodically review and modify them as necessary in order to ensure that it continues to meet the City's historic preservation goals. COS-4d Provide educational resources and public outreach efforts that inform citizens of historical preservation efforts including:

- *School age programs, and on-line exhibits; and*
- *Collaboration with community groups, and educational institutions to promote local awareness and appreciation of Willows' rich history.*

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.

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 Community Development Services 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 Community Development Services Department.

- *If human remains are discovered during any ground disturbing activity, work shall stop until the Community Development Services 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.*

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

Impact 3.5-2: Implementation of the General Plan could lead to the disturbance of any human remains (Less than Significant)

Indications are that humans have occupied areas near the Planning Area for at least the past 6,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities allowed under the General Plan may yield human remains that may not be marked in formal burials.

Future projects may disturb or destroy buried Native American human remains, including those interred outside of formal cemeteries. Consistent with state laws protecting these remains (that is, Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98), sites containing Native American human remains must be treated in a sensitive manner.

As future development and infrastructure projects are considered by the City, each project will be evaluated for conformance with the City's General Plan, Municipal Code, and other applicable State and local regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that Native American human remains are inadvertently discovered during development activities. The General Plan requires that human remains are treated in compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98. Implementation of the policies and actions of the General Plan listed below would result in a **less than significant** impact to disturbance of human remains.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

See policies and actions identified in Impact 3.5-1

Impact 3.5-3: Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or a resource determined by the lead agency (Less than Significant).

As described previously, the City of Willows conducted Native American consultations under Senate Bill 18 (Chapter 905, Statutes of 2004), also known as SB18, which requires local governments to consult with Tribes prior to making certain planning decisions and requires consultation and notice for a general and specific plan adoption or amendments in order to preserve, or mitigate impacts to, cultural places that may be affected. While the Native American Heritage Commission responded with a letter dated March 13, 2019 which stated the results were positive, it is possible that unknown tribal cultural resources may be present and could be adversely affected by implementation of measures and strategies associated with the project.

Specific locations for future development and improvements have not been identified. Future projects would be required to be evaluated for project-specific impacts under CEQA at the time of application. The General Plan and local CEQA guidelines require tribal consultation and the protections of any identified archeological and tribal resources.

All future development projects would be required to follow development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protection of tribal resources. Subsequent projects would be required to prepare site-specific project-level analysis to fulfill CEQA requirements, which also would include additional consultation that could lead to the identification of potential site-specific tribal resources.

As discussed under impact discussions 3.5-1 and 3.5-2, impacts from future development could discover unknown archaeological resources including Native American artifacts and human remains. Impacts would result in a less-than-significant impact with implementation of General Plan policies and actions and local review guidelines. Compliance with the General Plan policies and actions, as well as State and local guidelines would provide an opportunity to identify, disclose, and avoid or minimize the disturbance of and impacts to a tribal resource through consultation and CEQA review procedures. Therefore, implementation of the policies and actions within the General Plan listed below would result in a **less than significant** impact.

GENERAL PLAN POLICIES AND ACTIONS THAT MINIMIZE POTENTIAL IMPACTS

CONSERVATION AND SUSTAINABILITY ELEMENT POLICIES

See policies and actions identified in Impact 3.5-1

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This section provides a background discussion of the seismic and geologic hazards found in the City and the regional vicinity. This section is organized with an environmental setting, regulatory setting, and impact analysis.

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

3.6.1 ENVIRONMENTAL SETTING

The City of Willows is located in southern Glenn County, about 30 miles southwest of Chico. The topography of the Planning Area is characterized by the relatively flat terrain with natural gentle slope from east to west. Willows' topography has an average elevation of approximately 135 feet above sea level.

GEOMORPHIC PROVINCE

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief, and climate. These geomorphic provinces are remarkably diverse. They provide spectacular vistas and unique opportunities to learn about Earth's geologic processes and history. The Planning Area is located in the northern portion of the Great Valley Geomorphic Province of California.

The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west.

REGIONAL GEOLOGY

The Planning Area lies in the Sacramento Valley in Northern California. The Sacramento Valley is located in the Northern portion of the Great Valley Geomorphic Province. The Great Valley, also known as the Central Valley, is a topographically flat, northwest-trending, structural trough (or basin) about 50 miles wide and 400 miles long. It is bordered by the Tehachapi Mountains on the south, the Klamath Mountains on the north, the Sierra Nevada on the east, and the Coast Ranges on the west.

The Sacramento Valley is filled with thick sedimentary rock sequences that were deposited as much as 130 million years ago. Large alluvial fans have developed on each side of the Valley. The larger and more gently sloping fans are on the east side of the Sacramento Valley, and overlie metamorphic and igneous basement rocks. These basement rocks are exposed in the Sierra Nevada foothills and consist of metasedimentary, volcanic, and granitic rocks.

SEISMIC HAZARDS

Seismic hazards include both rupture (surface and subsurface) along active faults and ground shaking, which can occur over wider areas. Ground shaking, produced by various tectonic

phenomena, is the principal source of seismic hazards in areas devoid of active faults. All areas of the state are subject to some level of seismic ground shaking.

Several scales may be used to measure the strength or magnitude of an earthquake. Magnitude scales (ML) measure the energy released by earthquakes. The Richter scale, which represents magnitude at the earthquake epicenter, is an example of an ML. As the Richter scale is logarithmic, each whole number represents a 10-fold increase in magnitude over the preceding number. Table 3.6-1 represents effects that would be commonly associated with Richter Magnitudes.

TABLE 3.6-1: RICHTER MAGNITUDES AND EFFECTS

MAGNITUDE	*EFFECTS*
< 3.5	Typically not felt
3.5 – 5.4	Often felt but damage is rare
5.5 – < 6	Damage is slight for well-built buildings
6.1 – 6.9	Destructive potential over ±60 miles of occupied area
7.0 – 7.9	"Major Earthquake" with the ability to cause damage over larger areas
≥ 8	"Great Earthquake" can cause damage over several hundred miles

SOURCE: USGS, EARTHQUAKE PROGRAM.

Moment Magnitude (Mw) is used by the United States Geological Service (USGS) to describe the magnitude of large earthquakes in the U.S. The value of moment is proportional to fault slip multiplied by the fault surface area. Thus, moment is a measurement that is related to the amount of energy released at the point of movement. The Mw scale is often preferred over other scales, such as the Richter, because it is valid over the entire range of magnitudes. Moment is normally converted to Mw, a scale that approximates the values of the Richter scale.

Seismic ground shaking hazards are calculated as a probability of exceeding certain ground motion over a period of time, usually expressed in terms of "acceleration." The acceleration of the Earth during an earthquake can be described in terms of its percentage of gravity (g). For example, the 10% probability of exceedance in 50 years is an annual probability of 1 in 475 of being exceeded each year. This level of ground shaking has been used for designing buildings in high seismic areas. This probability level allows engineers to design buildings for larger ground motions than what is expected to occur during a 50-year interval, which will make buildings safer than if they were only designed for the ground motions that are expected to occur in the next 50 years.

In contrast, other scales describe earthquake intensity, which can vary depending on local characteristics. The Modified Mercalli Scale (MM) expresses earthquake intensity at the surface on a scale of I through XII.

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Glenn County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. The following table represents the potential effects of an earthquake based on the Modified Mercalli Intensities.

TABLE 3.6-2: MODIFIED MERCALLI INTENSITIES AND EFFECTS

RICHTER MAGNITUDE	*MODIFIED MERCALLI*	*EFFECTS OF INTENSITY*
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awaken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

SOURCE: UNITED STATES GEOLOGICAL SURVEY

The Significant United States Earthquake data published by the USGS in the National Atlas identifies earthquakes that caused deaths, property damage, and geologic effects or were felt by populations near the epicenter. No significant earthquakes are identified within the Planning Area; however, significant earthquakes are documented in the region. The following table presents the significant earthquakes in the region.

TABLE 3.6-3: SIGNIFICANT EARTHQUAKES IN THE REGION

MAGNITUDE	*INTENSITY*	*LOCATION*	*YEAR*
5.6	VII	Petrolia	2019
5.0	V	Geysers	2016
5.1	IV	Upper Lake	2016
5.7	VII	Greenville	2013
5.1	N/A	Redding	1998
5.7	N/A	Palermo	1975
5.5	N/A	Lassen Peak	1950

MAGNITUDE	INTENSITY	LOCATION	YEAR
5.0	N/A	Lassen Peak	1946
5.6	N/A	Ukiah	1869
5.5	N/A	Sierra County	1855

SOURCE: UNITED STATE GEOLOGICAL SURVEY, 2019.

FAULTS

Faults are classified as Historic, Holocene, Late Quaternary, Quaternary, and Pre-Quaternary according to the age of most recent movement (California Geological Survey, 2002). These classifications are described as follows:

- **Historic:** faults on which surface displacement has occurred within the past 200 years;
- **Holocene:** shows evidence of fault displacement within the past 11,000 years, but without historic record;
- **Late Quaternary:** shows evidence of fault displacement within the past 700,000 years, but may be younger due to a lack of overlying deposits that enable more accurate age estimates;
- **Quaternary:** shows evidence of displacement sometime during the past 1.6 million years; and
- **Pre-Quaternary:** without recognized displacement during the past 1.6 million years.

Faults are further distinguished as active, potentially active, or inactive. (California Geological Survey, 2002).

- **Active:** An active fault is a Historic or Holocene fault that has had surface displacement within the last 11,000 years;
- **Potentially Active:** A potentially active fault is a pre-Holocene Quaternary fault that has evidence of surface displacement between about 1.6 million and 11,000 years ago; and
- **Inactive:** An inactive fault is a pre-Quaternary fault that does not have evidence of surface displacement within the past 1.6 million years. The probability of fault rupture is considered low; however, this classification does not mean that inactive faults cannot, or will not, rupture.

The 2010 Fault Activity Map provided by the California Department of Conservation identified potential seismic sources within 100 kilometers (62 miles) of the Planning Area. The closest known faults classified by the California Geological Survey are the Corning fault, located approximately 5 miles to the northwest of the planning area; and the Stony Creek Fault, located approximately 23 miles west of the planning area. Both the Corning Fault and Stony Creek Fault has had movement as recently as the Late Quaternary Period (less than 130,000 years ago), thus, is considered potentially active faults. Other faults that could potentially affect the Planning Area include the Bartlett Springs, Hot Springs shear zone, Estel Ridge, Round Valley, and Chico Monocline. Figure 3.6-1 illustrates the location of some of the closest faults.

SEISMIC HAZARD ZONES

Alquist-Priolo Fault Zones

An active earthquake fault, per California's Alquist-Priolo Act, is one that has ruptured within the Holocene Epoch (≈11,000 years). Based on this criterion, the California Geological Survey identifies Earthquake Fault Zones. These Earthquake Fault Zones are identified in Special Publication 42 (SP42), which is updated as new fault data become available. The SP42 lists all counties and cities within California that are affected by designated Earthquake Fault Zones. The Fault Zones are delineated on maps within SP42 (Earthquake Fault Zone Maps).

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.

Seismic Hazard Zones

The State Seismic Hazards Mapping Act (1990) addresses hazards along active faults. The Northern California counties affected by the Seismic Hazard Zonation Program include Alameda, San Francisco, San Mateo and Santa Clara. The Southern California counties affected by the Program include San Bernardino, Los Angeles, Orange, and Ventura. Seismic hazard zones are not currently mapped in Willows within the Willows quadrangle.

LIQUEFACTION

Liquefaction, which is primarily associated with loose, saturated materials, is most common in areas of sand and silt or on reclaimed lands. Cohesion between the loose materials that comprise the soil may be jeopardized during seismic events and the ground will take on liquid properties. Thus, liquefaction requires specific soil characteristics and seismic shaking.

In collaboration with the USGS Earthquake Hazard Program, the California Geological Survey (CGS) produces Liquefaction Susceptibility Maps and identifies "Zones of Required Investigation" per the State's Seismic Hazard Zonation Program.

The article *Mapping Liquefaction-Induced Ground Failure Potential* (Youd and Perkins, 1978) provides a generalized matrix to demonstrate the relationship between liquefaction potential and depositional landscapes. Table 3.6-4, which is recreated from Youd and Perkins, demonstrates the general relationship between the nature and age of sediment and the anticipated liquefaction potential.

TABLE 3.6-4: LIQUEFACTION POTENTIAL BASED ON SEDIMENT TYPE AND AGE OF DEPOSIT

SEDIMENT	*SUSCEPTIBILITY BASED ON AGE OF DEPOSITS (YEARS BEFORE PRESENT)*			
	MODERN (< 500)	*HOLOCENE (< 10,000)*	*PLEISTOCENE (< 2 MILLION)*	*PRE-PLEISTOCENE (> 2 MILLION)*
River Channel	Very High	High	Low	Very Low
Flood Plain	High	Moderate	Low	Very Low
Alluvial Fan/Plain	Moderate	Low	Low	Very Low

SEDIMENT	*SUSCEPTIBILITY BASED ON AGE OF DEPOSITS (YEARS BEFORE PRESENT)*			
	MODERN (< 500)	*HOLOCENE (< 10,000)*	*PLEISTOCENE (< 2 MILLION)*	*PRE-PLEISTOCENE (> 2 MILLION)*
Lacustrine/Playa	High	Moderate	Low	Very Low
Colluvium	High	Moderate	Low	Very Low
Talus	Low	Low	Very Low	Very Low
Loess	High	High	High	- ? -
Glacial Till	Low	Low	Very Low	Very Low
Tuff	Low	Low	Very Low	Very Low
Tephra	High	High	- ? -	- ? -
Residual Soils	Low	Low	Very Low	Very Low
Sebka	High	Moderate	Low	Very Low
Un-compacted Fill	Very High	NA	NA	NA
Compacted fill	Low	NA	NA	NA

SOURCE: YOUD AND PERKINS, 1978

The CGS Liquefaction Susceptibility Maps and "Zones of Required Investigation" are produced per the State's Seismic Hazard Zonation Program. In Northern California, the areas of high liquefaction potential identified by the CGS are confined to the nine counties comprising the Bay Area, which doesn't include Glenn County.

The Earthquake Zones of Required Investigation of California Geological Survey suggests that the Planning Area is not within a CGS Liquefaction Zones. 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 may include unconsolidated content 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.

STRUCTURAL DAMAGE

Fault Rupture Damage. A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e., earthquake) or slow (i.e., fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. Willows does not have surface expression of active faults and fault rupture is not anticipated.

Ground Shaking Damage. As is the case for most areas within California, the potential for seismic ground shaking in the Planning Area is expected. As a result, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. California's seismic design provisions require enhanced structural integrity based on several risk parameters with the ultimate objective of protecting the life and safety of building occupants and the public. For large earthquakes, the seismic design standards

primarily ensure that the building will not collapse, but some structural and non-structural damage may be expected. Older buildings constructed of unreinforced masonry, including materials such as brick, concrete, and stone, pre-1940 wood frame houses, and pre-1973 tilt-up concrete buildings are particularly susceptible to structural damage from ground shaking. In most cases, these older buildings require retrofit, or they risk significant structural damage during an earthquake.

Liquefaction Damage. The potential for liquefaction ranges from low to high within the Planning Area. Liquefaction poses a substantial source of hazard to structures and infrastructure located throughout the Planning Area. There are a variety of geotechnical strategies that can be implemented to mitigate the potential for structural damage. These include appropriate foundation design, engineering soils, groundwater management, and the use of special flexible materials for construction.

Landslide and Lateral Spreading Damage. There are a variety of geotechnical strategies that can be implemented to mitigate the potential for landslide and lateral spreading in this area. These include engineering soils, groundwater management, surface water control, slope reconfiguration, and structural reinforcement if necessary. The Planning Area is essentially flat; therefore, the potential for a landslide is generally low.

OTHER GEOLOGIC HAZARDS

Soils

A Custom Soil Survey was completed for the Planning Area using the NRCS Web Soil Survey program. Figure 3.6-2 presents a map of the soils located in the Planning Area. Below is a brief description of the most prominent soils within the Planning Area.

***Myers series*.** The Myers series consists of very deep, well to moderately well drained soils on flood basins and alluvial fans. These soils formed in alluvium derived from mixed sources. Slope ranges from 0 to 18 percent. The mean annual precipitation is about 22 inches, and the mean annual temperature is about 60 degrees F. The soils are used for dry farmed grain, irrigated row, field crops and rice. Vegetation consists of annual grasses and forbs. This soil occurs on the west side of the Sacramento Valley and in valleys of the Coast Range and Cascade foothills of California. The soils are moderately extensive.

***Willows series*.** The Willows series consists of very deep, poorly to very poorly drained sodic soils formed in alluvium from mixed rock sources. Willows soils are in flood basins. Slope ranges from 0 to 2 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 60 degrees F. The soil is used for growing rice, sugar beets and safflower. Original vegetation was saline-sodic tolerant plants. These soils occur on the west side of the Sacramento and San Joaquin Valleys and intermountain valleys of the Coast Range, California. The soils are moderately extensive.

Erosion

The U.S. Natural Resource Conservation Service (NRCS) delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of erosion factors is provided by the NRCS Physical Properties Descriptions:

- Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kf indicates the erodibility of the fine soils. The estimates are modified by the presence of rock fragments.

The Custom Soils Report identified the erosion potential for the soils in the Planning Area. This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factors K for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Soil erosion data for the city of Willows were obtained from the NRCS. Within the Planning Area, the erosion factor K varies from 0.24 to 0.37, which is considered a low to moderate potential for erosion. Furthermore, given the drainage characteristics of the majority of the soils and the nearly level topography of the Planning Area, runoff erosion hazard is considered low. The wind erosion potential ranges from moderate-to-high during the spring, summer, and fall, however this potential for wind erosion diminish during the winter.

Expansive Soils

The NRCS delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of linear extensibility (also known as shrink-swell potential or expansive potential) is provided by the NRCS Physical Properties Descriptions:

> *"Linear extensibility" refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.*
>
> *The shrink-swell 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 the shrink-swell potential of soils in the Planning Area.

Landslide

The California Geological Survey classifies landslides with a two-part designation based on Varnes (1978) and Cruden and Varnes (1996). The designation captures both the type of material that failed and the type of movement that the failed material exhibited. Material types are broadly categorized as either rock or soil, or a combination of the two for complex movements. Landslide movements are categorized as falls, topples, spreads, slides, or flows.

Landslide potential is influenced by physical factors, such as slope, soil, vegetation, and precipitation. Landslides require a slope, and can occur naturally from seismic activity, excessive saturation, and wildfires, or from human-made conditions such as construction disturbance, vegetation removal, wildfires, etc. The Planning Area is essentially flat; therefore, the potential for a landslide is generally low. Figure 3.6-4 illustrates the landslide susceptibility in 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 potential for liquefaction is moderate to high in many areas of the city, however because 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.

Naturally Occurring Asbestos

The term “asbestos” is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally occurring asbestos is commonly associated with ultramafic rocks and serpentinite. Ultramafic rocks, such as dunite, peridotite, and pyroxenite are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth’s surface. The metamorphic rock serpentinite is a common product of the alteration process. Naturally occurring asbestos is not identified within Glenn County. There is no naturally occurring asbestos mapped within Willows.

Tsunami/Seiches

Tsunamis and seiches are standing waves that occur in the ocean or relatively large, enclosed bodies of water (i.e., Lake Tahoe) 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 city of Willows is not within a tsunami or seiche hazard area.

PALEONTOLOGICAL RESOURCES

Among the natural resources deserving conservation and preservation, and existing within the update Study Area, are the often unseen records of past life buried in the sediments and rocks below the pavement, buildings, soils, and vegetation which now cover most of the area. These records – fossils and their geologic context – undoubtedly exist in large quantities below the surface in many areas in and near the City of Willows, and span millions of years in age of origin. Fossils constitute a non-renewable resource: Once lost or destroyed, the exact information they contained can never be reproduced.

Paleontology is the science that attempts to unravel the meaning of these fossils in terms of the organisms they represent, the ages and geographic distribution of those organisms, how they interacted in ancient ecosystems and responded to past climatic changes, and the changes through time of all of these aspects.

The sensitivity of a given area or body of sediment with respect to paleontologic resources is a function of both the potential for the existence of fossils and the predicted significance of any fossils which may be found there. The primary consideration in the determination of paleontologic sensitivity of a given area, body of sediment, or rock formation is its potential to include fossils. Information that can contribute to assessment of this potential includes: 1) direct observation of fossils within the project area; 2) the existence of known fossil localities or documented absence of fossils in the same geologic unit (e.g., "Formation" or one of its subunits); 3) descriptive nature of sedimentary deposits (such as size of included particles or clasts, color, and bedding type) in the area of interest compared with those of similar deposits known elsewhere to favor or disfavor inclusion of fossils; and 4) interpretation of sediment details and known geologic history of the sedimentary body of interest in terms of the ancient environments in which they were deposited, followed by assessment of the favorability of those environments for the preservation of fossils.

The most general paleontological information can be obtained from geologic maps, but geologic cross sections (i.e., slices of the layer cake to view the third dimension) must be reviewed for each area in question. These usually accompany geologic maps or technical reports. Once it can be determined which formations may be present in the subsurface, the question of presence of paleontological resources must be addressed. Even though a formation is known to contain fossils, they are not usually distributed uniformly throughout the many square miles the formation may cover. If the fossils were part of a bay environment when they died, perhaps a scattered layer of shells will be preserved over large areas. If on the other hand, a whale died in this bay, one might expect to find fossil whalebone only in one small area of less than a few hundred square feet. Other resources to be considered in the determination of paleontological potential are regional geologic reports, site records on file with paleontological repositories, and site-specific field surveys.

Paleontologists consider all vertebrate fossils to be of significance. Fossils of other types are considered significant if they represent a new record, new species, an oldest occurring species, the

most complete specimen of its kind, a rare species worldwide, or a species helpful in the dating of formations. However, even a previously designated low potential site may yield significant fossils.

3.6.2 REGULATORY SETTING

FEDERAL REGULATIONS

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (42 USC, 7701 et seq.) requires the establishment and maintenance of an earthquake hazards reduction program by the Federal government.

Executive Order 12699

Signed in January 1990, this executive order of the President implements provisions of the Earthquake Hazards Reduction Act for "federal, federally assisted or federally regulated new building construction" and requires the development and implementation of seismic safety programs by Federal agencies.

International Building Code (IBC)

The purpose of the International Building Code (IBC) is to provide minimum standards to preserve the public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. IBC standards address foundation design, shear wall strength, and other structurally related conditions.

STATE REGULATIONS

California Building Standards Code

Title 24 of the California Code of Regulations, known as the California Building Standards Code (CBSC) or simply "Title 24," contains the regulations that govern the construction of buildings in California. The CBSC includes 12 parts: California Building Standards Administrative Code, California Building Code, California Residential Building Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Historical Building Code, California Fire Code, California Existing Building Code, California Green Building Standards Code (CAL Green Code), and the California Reference Standards Code. Through the CBSC, the State provides a minimum standard for building design and construction. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

California Health and Safety Code

Section 19100 et seq. of the California Health and Safety Code establishes the State's regulations for earthquake protection. This section of the code requires structural designs to be capable of resisting likely stresses produced by phenomena such as strong winds and earthquakes.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

- Cities and counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

Caltrans Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo 20-1 Seismic Design Methodology (Caltrans 1999) outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components, and seismic design practices that collectively make up Caltrans' seismic design.

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.

LOCAL REGULATIONS

City of Willows Design and Construction Standards

It is the purpose of these Design and Construction Standards to provide minimum standards to be applied to improvements and private development projects to be dedicated to the public and accepted by the City for maintenance or operation, as well as improvements to be installed within existing rights of way and easements. These standards provide for coordinated development of required facilities to be used by and for the protection of the public. These standards shall apply to and regulate the design and preparation of plans for construction of streets, drainage, sewerage, street lighting, and related public improvements.

Sewage Disposal Regulations Willows Municipal Code Title 13 Chapter 13.10.100

Title 13 Chapter 13.10.100 of the Willows Municipal Code include the following requirements for the use of public sewers:

(1) Disposal of Wastes. It shall be unlawful for any person to place, deposit, or permit to be deposited in an unsanitary manner upon public or private property within the city, or in any area under the jurisdiction of said city, any human or animal excrement, garbage, or other objectionable waste.

(2) Treatment of Wastes Required. It shall be unlawful to discharge to any stream or watercourse any sewage, industrial wastes, or other polluted waters, except where suitable treatment has been provided in accordance with provisions of this chapter.

(3) Unlawful Disposal. Except as herein provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, seepage pit or other facility intended or used for the disposal of sewage.

(5) Sewer Required. The owner of any building situated within the city and abutting on any street in which there is now located or may in the future be located a public sewer of the city, is hereby required at his expense to connect said building directly with the proper public sewer in accordance with the provisions of this chapter, within 90 days after date of official notice to do so; provided, that said public sewer is within 200 feet of the nearest point of the property; provided, however, that where territory is annexed to the city upon which existing improvements are located which are served by a satisfactorily operating and maintained septic tank, the owner may continue to dispose of waste to said septic tank so long as it remains in operating condition to the satisfaction of the county health officer or until any additional building or buildings or any division of the property is proposed, at which time connection to the public sewer shall be required. [Ord. 639-93, 10-26-93. Prior code § 17-42].

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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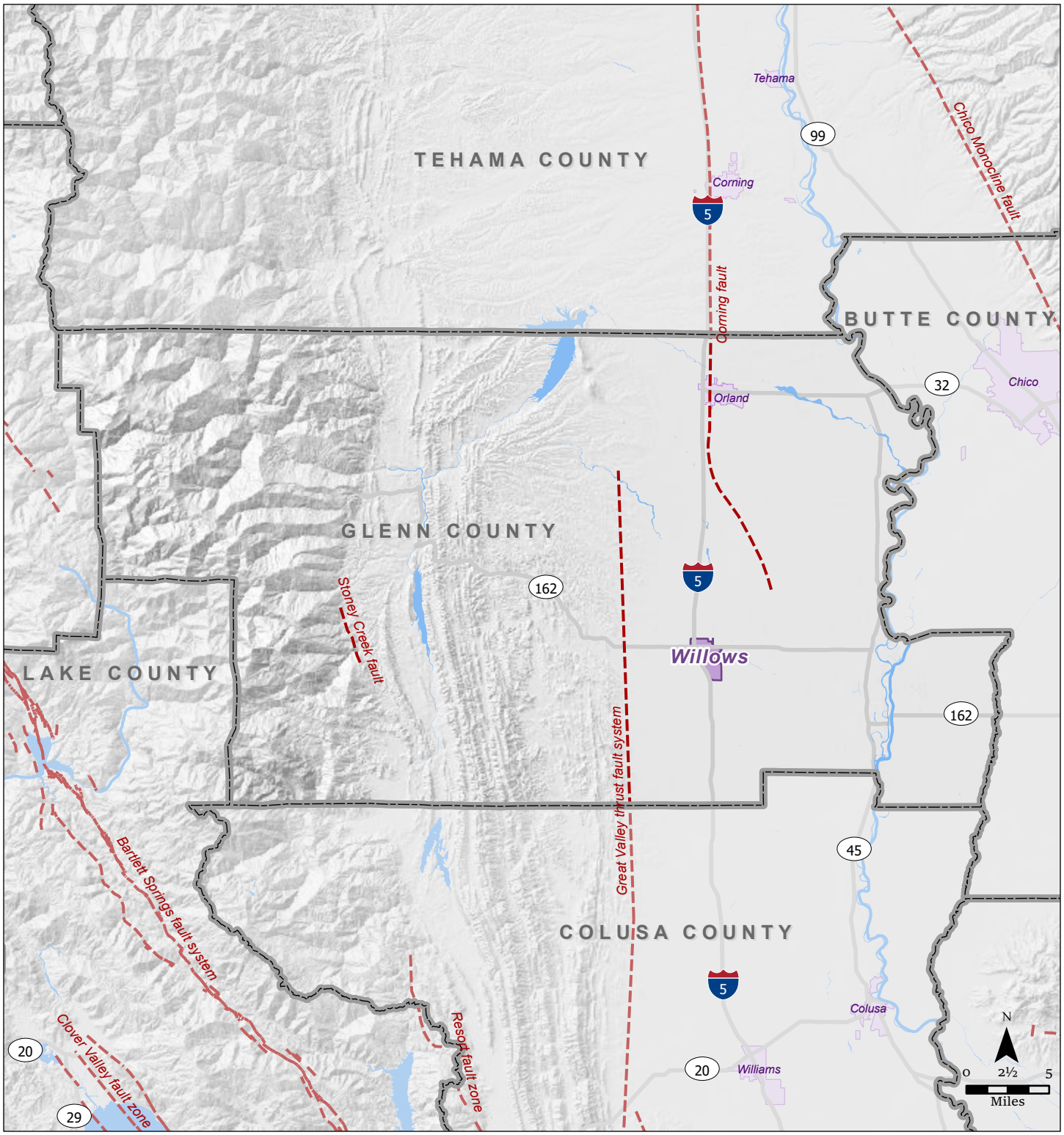

Sources: USGS; California State GeoPortal; Glenn County. Map date: July 4, 2022.

CITY OF WILLOWS

FIGURE 3.6-1 LOCAL EARTHQUAKE FAULTS

Legend

- City of Willows
- Other Incorporated Area
- Quaternary Fault

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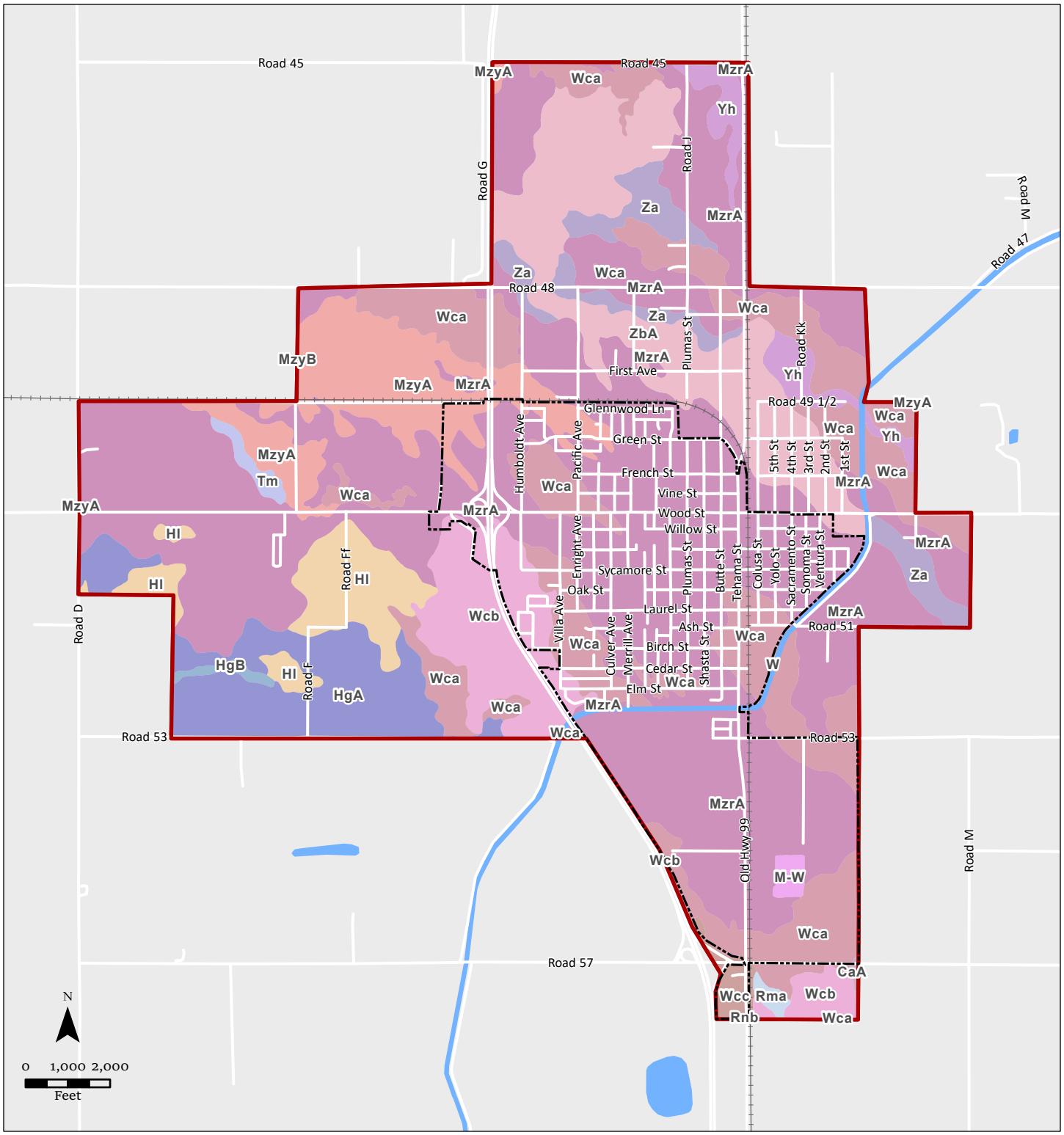

Sources: NRCS Soils Database; Glenn County 2018. Map date: July 4, 2022.

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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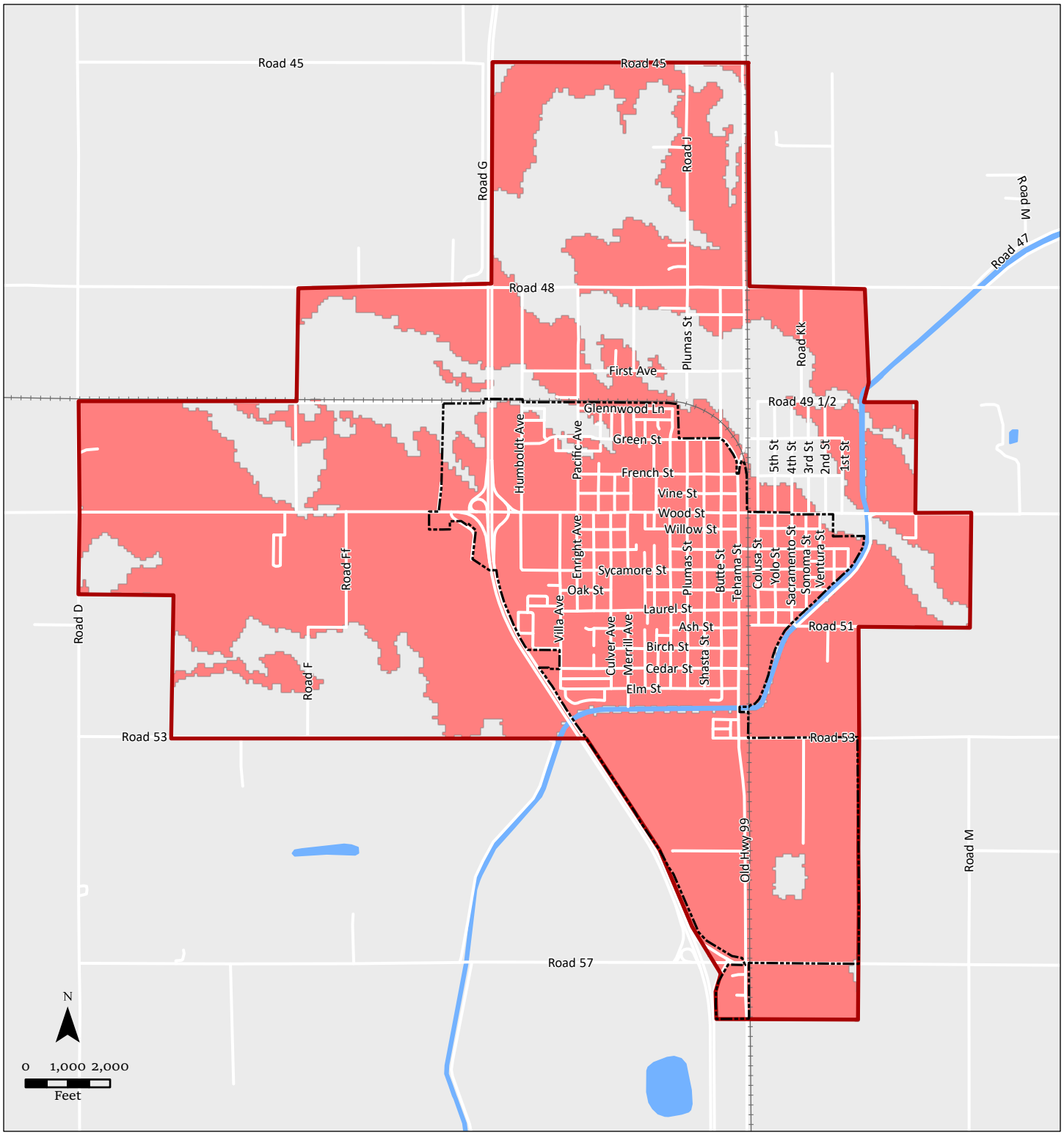

Sources: NRCS Soils Database; Glenn County 2018. Map date: July 4, 2022.

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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A Land Use Planning, Design, and Environmental Firm

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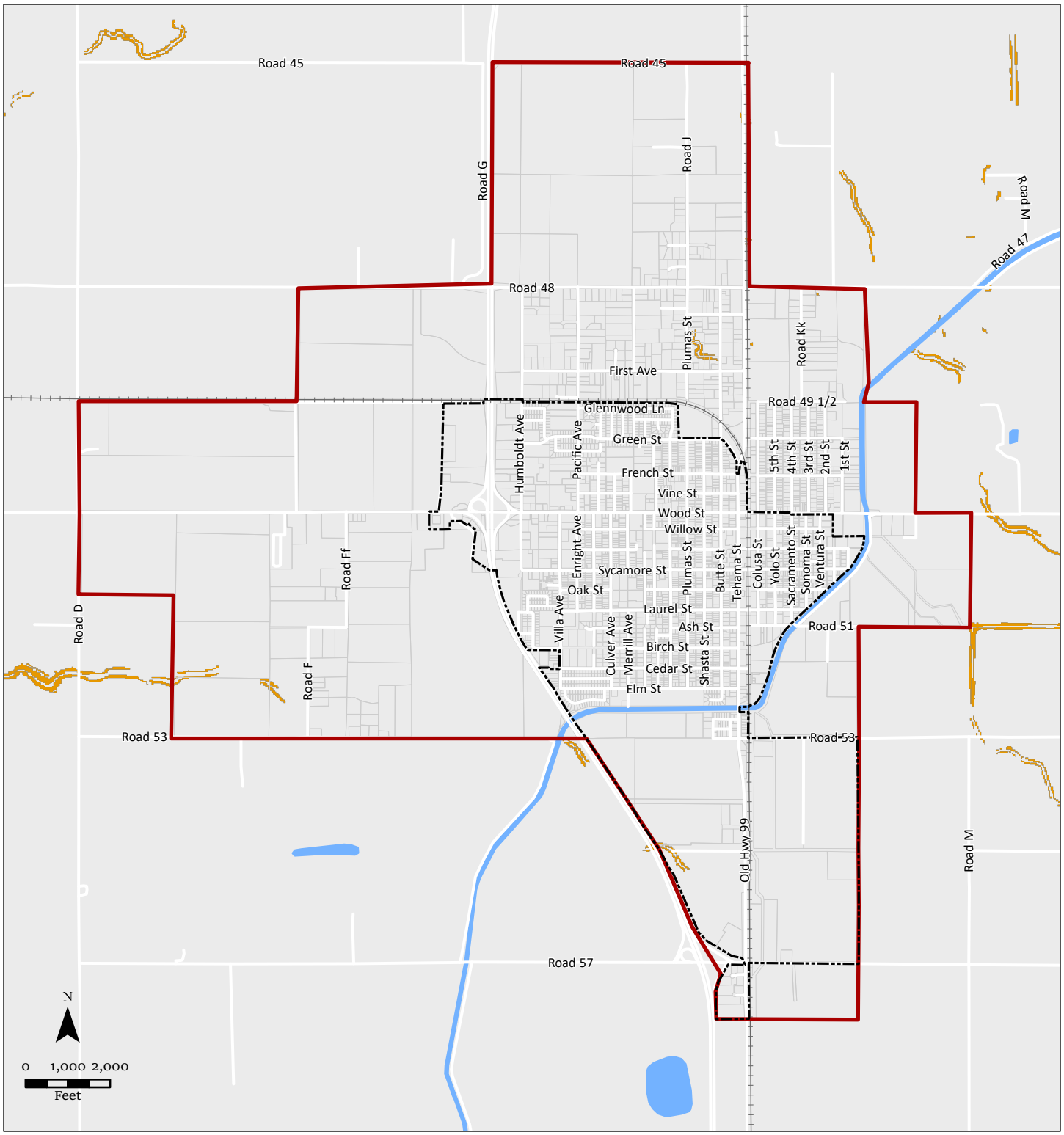

Sources: Department of Conservation, California Geological Survey, 2010; Glenn County 2018. Map date: July 4, 2022.

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.

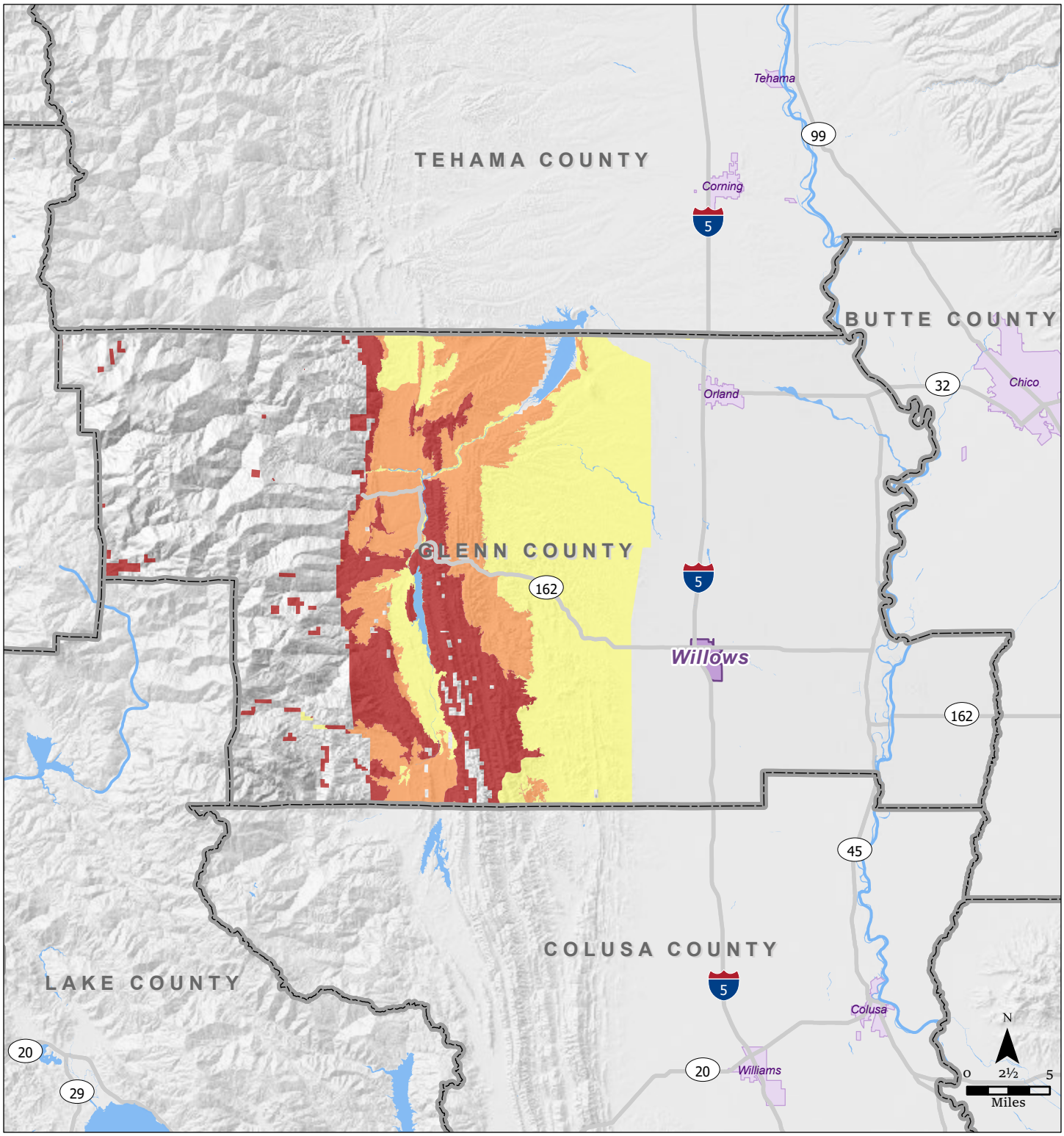
SA-4d: Work with Glenn County and other partner agencies to review and update local hazard plans including emergency operation plans, and the Glenn County, CA Multi-Jurisdiction Hazard Mitigation Plan to include an analysis of evacuation routes, fire breaks and other community needs.

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